



Buckinghamshire Council

www.buckinghamshire.gov.uk

Appendix C- H

16/00424/AOP

**Land Between Wendover Road And Aston Clinton Road Weston
Turville Buckinghamshire**

APPENDIX C: Hampden Fields SOS decision Jan 2015



Department for
Communities and
Local Government

GVA Ltd
10 Stratton Street
London
W1J 8JR

Our Ref: (A) APP/J0405/A/12/2181033
(B) APP/J0405/A/12/2189277
(C) APP/J0405/A/12/2189387
(D) APP/J0405/A/13/2197073

Barton Willmore LLP
Beansheaf Farmhouse
Bourne Close
Calcot,
Reading
RG31 7BW

26 January 2015

David Lock Associates Ltd
50 North Thirteenth Street
Milton Keynes
MK9 3BP

Dear Sirs,

**TOWN AND COUNTRY PLANNING ACT 1990 – SECTION 78
PLANNING APPEALS AT (A) FLEET MARSTON FARM, FLEET MARSTON,
AYLESBURY; (B) LAND SOUTH EAST OF AYLESBURY (HAMPDEN FIELDS); and
(C) & (D) LAND NORTH OF WEEDON HILL MDA, AYLESBURY**

1. I am directed by the Secretary of State to say that consideration has been given to the report of the Inspector, David M H Rose BA(Hons) MRTPI, who held a public local inquiry on dates between 25 June 2013 and 9 December 2013 into your clients' appeals against the refusal by Aylesbury Vale District Council ("the Council") to grant outline planning permission in respect of Appeals A and D and the failure of that Council to determine the applications in respect of Appeals B and C.
2. The developments proposed in the respective planning applications are set out on pages 1-2 of the Inspector's Report (IR), and the main elements are:

A – Application ref: 10/01504/AOP dated 19.07.2010 by Barwood Land and Estates Limited, and refused on 25.07.2012, for 2,745 dwellings, 30,000m² employment space, school, care home, railway station;

B – Application ref: 12/00605/AOP by the Hampden Fields Consortium, dated 12.03.12 and amended on 02.11.12. The appeal was against the failure of the Council to determine the application for up to 3,000 dwellings, care home, land for a Park & Ride

Jean Nowak, Decision Officer
Planning Casework Division
Department for Communities and Local Government
3rd Floor, Fry Building
2 Marsham Street
London, SW1P 4DF

Tel 0303 444 1626
Email pcc@communities.gsi.gov.uk

facility and a waste recycling facility, employment land, 2 schools, mixed-use local centre, and multi-functional green infrastructure;

C – Application ref: 12/00739/AOP by Hallam Land Management Limited, dated 30.03.12. The appeal was against the failure of the Council to determine the application for up to 120 dwellings, employment development and Park & Ride facility;

D – Application ref: 12/02850/AOP by Hallam Land Management Limited, dated 19.12.12 and refused on 12.04.13 for up to 220 dwellings and a Park and Ride facility on the same site as (C).

3. On 9 August 2012, the Secretary of State recovered Appeal A for his own decision and he similarly recovered Appeals B and C on 29 January 2013 and 21 May 2013 respectively. The reason for recovery of each case was that it involves proposals for residential development of over 150 units and on a site of over 5 hectares, which would significantly impact on the Government's objective to secure a better balance between housing demand and supply and create high quality, sustainable, mixed and inclusive communities. Appeal D was recovered on 29 January 2013 because it would be most efficiently and effectively decided with Appeals A, B and C.

Inspector's recommendation and summary of the decision

4. The Inspector recommended that the appeals be dismissed. For the reasons given below, the Secretary of State agrees with the Inspector's conclusions and recommendations. A copy of the IR is enclosed, and all references to paragraph numbers, unless otherwise stated, are to that report.

Procedural matters

5. In reaching his decisions the Secretary of State has taken into account the Environmental Statements (ESs) which were submitted with the applications relating to each of the appeals under the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 and the Inspector's comments at IR1.15. The Secretary of State is content that the ESs comply with the above regulations and that sufficient information has been provided for him to assess the environmental impact of the appeal proposals.

Matters arising following the close of the Inquiry

6. Following the close of the Inquiry, the Secretary of State received the following correspondence on substantive issues:

17 Dec 2013	Aylesbury Vale DC	Submission re HS2
10 Feb 2014	Barton Willmore	Implications of withdrawal of LP ¹
12 Feb 2014	Chilmark Consulting on behalf of Barwood Land and Estates Ltd	Implications of withdrawal of LP
4 April 2014	Aylesbury Vale DC	Implications of withdrawal of LP
16 April 2014	Chilmark Consulting	Response to above letter from Council
22 Aug 2014	Bucks CC	Archaeological significance

The Secretary of State is satisfied that none of this correspondence raised new issues on which he needed to seek further information to assist in making his decisions. However, copies can be obtained on written request to the address at the foot of the first page of this letter. The Secretary of State also received a request, dated 14 February

¹ Vale of Aylesbury Plan (LP)

2014 on behalf of Arnold White Estates (Rule 6 Party) seeking an extension of the period for comment following the withdrawal of the LP (referred to in paragraph 7 below); and a communication on their behalf dated 18 January 2015 drawing his attention to recent publications relating to the HS2 land scheme.

Policy considerations

7. In deciding these appeals, the Secretary of State has had regard to section 38(6) of the Planning and Compulsory Purchase Act 2004 which requires that proposals be determined in accordance with the development plan unless material considerations indicate otherwise. In the case of these appeals, the development plan consists of the saved policies of the Aylesbury Vale District Local Plan (AVDLP), adopted in January 2004 for the period to 2011. The two policies of the South East Plan which were retained as part of the development plan when the Regional Strategy was revoked on 23 March 2013 are not relevant to the consideration of these appeals. The Council submitted the LP for Examination in August 2013 but, following the Examining Inspector's conclusion that that plan had failed to assess objectively the full housing needs for the district and the duty to co-operate had not been fulfilled, they formally withdrew the plan in February 2014. Work on a new plan is still at an early stage, and the Secretary of State gives it little weight.
8. Other material considerations which the Secretary of State has taken into account include the *National Planning Policy Framework* (The Framework) and the subsequent planning guidance – upon which each of the main parties was invited by the Planning Inspectorate to comment (IR1.73); as well as the *Community Infrastructure Levy (CIL) Regulations 2010* as amended.
9. In accordance with section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 (the LB Act), the Secretary of State has paid special regard to the desirability of preserving those listed structures potentially affected by any of the appeal schemes or their settings or any features of special architectural or historic interest which they may possess.

Main issues

10. The Secretary of State agrees with the Inspector that there are two principal preliminary matters in relation to Appeals A and B (IR1.68) and that the individual main considerations are those set out at IR1.69 (Appeal A), IR1.70 (Appeal B) and IR1.71 (Appeals C and D).

Preliminary main consideration: housing land supply

11. For the reasons given at IR9.7-9.10, the Secretary of State agrees with the Inspector that the evidence relating to the preparation of the LP has diminished in materiality following its withdrawal so that the critical matters to be determined with regard to housing land supply are those listed at IR9.10. The Secretary of State has gone on to give careful consideration to the Inspector's arguments with regard to those matters at IR9.11-9.45; and agrees with his conclusion at IR9.46-9.48 that, for the purpose of these appeals, a more realistic level of housing provision would be in the order of at least 1,000 dwellings per annum before any uplift for previous under-delivery. He therefore also agrees that the Appeal A site and the Appeal B site would each only go part way to fulfilling the need for additional housing in the short term. Like the Inspector, the Secretary of State has therefore gone on to consider whether there are any material considerations to outweigh the provision of housing on each of the appeal sites.

Preliminary main consideration – financial contribution to Thames Valley Police

12. Having carefully considered the Inspector's exposition and discussion at IR9.49-9.75, the Secretary of State agrees with his conclusion at IR9.76 that, in the case of Appeals A and B, Thames Valley Police has not made out a convincing, site-specific case for the funding which it seeks so that the lack of developer contributions does not justify the refusal of planning permission.

APPEAL A: FLEET MARSTON

Landscape and visual effects

13. The Secretary of State has given very careful consideration to the Inspector's consideration of landscape character at IR9.78-9.109, visual affects at IR9.110-9.129, design iteration and primary mitigation at IR9.130-9.137 and the relevant saved policies of the AVDLP at IR9.138.144. He agrees with the Inspector's reasoning therein, and with his conclusions at IR9.145-146. Hence, the Secretary of State agrees with the Inspector that the proposal offers benefits including the retention, enhancement and reintroduction of trees and hedgerows consistent with the grain of the character area, community green infrastructure and the management of watercourses; whilst also agreeing with him that the proposal would have an adverse impact on the character and appearance of the landscape, contrary to the development plan and which would not be adequately mitigated by the design philosophy for the scheme. On balance, therefore, the Secretary of State agrees with the Inspector that the landscape and visual effects would cause significant harm.

Effect on heritage assets

14. For the reasons given at IR9.147-9.184, the Secretary of State agrees with the Inspector's conclusion at IR9.186 that the proposed development would have an adverse impact on the setting of the grade II* listed building at Saint Mary's church, Fleet Marston, amounting to less than substantial harm. He agrees that the claimed benefits of a wider use for the church and funds for repair and maintenance would not offset the harm to a material degree even if they could be guaranteed by a robust funding mechanism. The Secretary of State therefore agrees with the Inspector that significant weight attaches to the harm that would be caused to the setting of the church.
15. The Secretary of State also agrees (IR9.185) that the proposed development would not result in substantial harm to the setting of the grade II listed Fleet Marston farmhouse but that the removal of the large sheds and their replacement with more appropriate new buildings would allow a more fitting setting and better reveal the significance of the heritage asset.

Sustainability in terms of highways and transportation

16. Having carefully considered the Inspector's discussion at IR9.187-9.231, the Secretary of State agrees with him at IR9.232-9.235 that there are two elements which call into question the ability of the appeal scheme to provide the substantial sustainability benefits which the appellants claim. The first of these is the limited width of the railway bridge over the A41 which results in a significant constraint to achieving a high quality route for pedestrians and cyclists in the direction of Aylesbury and the adverse impact which this is likely to have on sustainable travel patterns; and the second is the extent to which bus provision would be capable of being realised and operated viably in the manner envisaged by the appellants. The Secretary of State agrees with the Inspector (IR9.235) that these two factors, in combination, go to the heart of achieving travel by sustainable modes, outweigh the important benefits which would otherwise have been

realised by the project and undermine the expressed vision of creating a connected, sustainable urban extension.

Effect of the HS2 proposals

17. For the reasons given at IR9.236-9.242, the Secretary of State agrees with the Inspector's conclusion at IR9.243 that, as things currently stand, the proposals for HS2 neither add support to, nor undermine, the Appeal A proposals. He give them no weight.

Conditions and obligations

18. The Secretary of State has considered the proposed conditions and the Inspector's comments on them at IR9.244-9.303 and 9.347-9.348. He is satisfied that the conditions recommended by the Inspector at Annex D(ii) to the IR are reasonable and necessary and meet the tests of the Framework and the guidance. However, he does not consider that these overcome his reasons for refusing the appeal.

19. Furthermore, having carefully considered the Inspector's points at IR9.304-9.346, the Secretary of State agrees with his conclusion at IR9.349 that the undertaking would fail to mitigate the impacts of the development and make it acceptable in planning terms; and with his reservation at IR9.346 and IR9.350 about the extent to which the bus provision is capable of being realised and operated viably. The Secretary of State does not therefore consider that the provisions of the obligations are sufficient to overcome his concerns with the proposed scheme as identified in this decision letter.

Overall planning balance

20. For the reasons given at IR9.351-9.390, the Secretary of State agrees with the Inspector that, as the Council accept that they cannot demonstrate a five-year supply of deliverable housing sites, the terms of the Framework imply that permission should be granted for the Fleet Marston scheme unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits when assessed against the policies of the Framework taken as a whole. The Secretary of State also agrees with the Inspector at IR9.355 that the proposed development would be consistent with the economic and social roles of sustainable development by facilitating growth and providing homes.

21. However, for the reasons given at IR9.356-9.367 and IR9.383-9.384, the Secretary of State agrees with the Inspector at IR9.369 that the proposed urban extension would fail to contribute to the protection and enhancement of the natural and historic environment and so would not be consistent with the environmental dimension of sustainable development. He also agrees with the Inspector at IR9.375 and IR9.385-9.386 that the lack of clarity and certainty about bus service provision and the quality of the singular route to Aylesbury – particularly for pedestrians and cyclists - are inherent weaknesses which outweigh the transport related benefits which the development would deliver and count against the project as a whole.

APPEAL B: HAMPDEN FIELDS

Landscape and visual effects

22. The Secretary of State has carefully considered the Inspector's points on the Southern Vale Landscape Character Area (IR9.398-9.403, adjacent Landscape Character Areas (IR9.404-9.406), views from the Chilterns AONB (IR9.407-9.414), views towards the Chilterns AONB (IR9.415-9.418) and the impact on visual amenity for local residents (IR9.419-9.425); and he agrees with the Inspector's conclusions at IR9.426-9.429 that

the only significant adverse impact to be carried into the overall planning balance is the harmful effect on the character of the Southern Vale Landscape Character Area as an entity, with no material impact on adjacent character areas.

Coalescence and settlement identity

23. Having given careful consideration to the Inspector's discussion and reasoning at IR9.433-9.461, the Secretary of State agrees with his conclusions at IR9.462-9.472 and IR9.627-9.630. In particular, the Secretary of State agrees that, while the appeal site can properly be regarded as an intended garden suburb for Aylesbury, its impact would be greater on Stoke Mandeville and the focus of new recreation facilities between Stoke Mandeville and Weston Turville would draw the appeal site together with those two established settlements. This would result in a fundamental change to the eastern part of Stoke Mandeville through coalescence and some weakening of the northern edge of Weston Turville, with the wider loss of open countryside as part of its setting (IR9.462-468). He therefore also agrees (IR9.469) that the appeal scheme would conflict with Policy RA.2 of AVDLP and would be at odds with the Landscape Character Area guidelines (IR9.470). The Secretary of State further agrees with the Inspector (IR9.472) that local opposition to the scheme and the significant value of the appeal site to the local community are also matters to be considered in the overall planning balance.

Heritage assets

24. For the reasons given at IR9.473-9.486, the Secretary of State agrees with the Inspector at IR9.487-9.488 and IR9.631-9.632 that the appreciation of the intrinsic value of the field boundaries of Hampden Fields as an element of historic and social change would be seriously compromised and the fundamental nature of West End Ditch would be diminished; and that both of these weigh against the development in the overall balance. However, the Secretary of State also agrees with the Inspector (IR9.489 and IR9.633) that the limited loss of ridge and furrow would be neutralised by the benefit of securing protection and management for the greater part of the feature.

Best and most versatile agricultural land

25. The Secretary of State agrees with the Inspector (IR9.490-9.494 and IR9.636) that the scheme would involve loss of some of the best and most versatile agricultural land within the site and that much of the Appeal A site is of lower quality. He agrees with the Inspector that this is a negative matter to be applied in the overall planning balance for the Appeal B scheme.

Highways and Transportation

26. The Secretary of State has given very careful consideration to the Inspector's analysis of the impacts of the Appeal B scheme on highways and transportation issues at IR9.495-9.580, and agrees with his conclusions at IR9.581-9.586 and IR9.637-9.645. In particular, he agrees that financial contributions for improving road conditions and the attractiveness of public transport are material considerations. He also agrees that the appeal scheme would compound the difficulties and delays currently experienced on part of the network which is already subject to considerable stress, so that mitigation would be essential in order to make the development acceptable, especially with regard to the Walton Street gyratory.

27. Like the Inspector, the Secretary of State has taken account of the fact that a scheme of mitigation has evolved for the Walton Street gyratory, but that its final form leaves a number of matters uncertain and any such scheme could only be implemented, and any prior planning permission for the Appeal B scheme realised, consequent on the

confirmation of a Traffic Regulation Order which would be subject to its own consent regime. The Secretary of State agrees with the Inspector at IR9.586 that the benefits of such a scheme would be substantial. However, he also agrees (IR9.645) that it would not make sound planning sense to approve a major urban extension with known highway deficiencies, an incomplete solution and uncertainties about deliverability until it can be demonstrated that the full effects of the appeal scheme can be mitigated, managed and implemented.

Conditions and obligations

28. The Secretary of State has considered the proposed conditions and the Inspector's comments on them at IR9.587-9.596 and IR9.646. He is satisfied that the conditions recommended by the Inspector at Annex E(ii) to the IR are reasonable and necessary and meet the tests of the Framework and the guidance. However, he does not consider that these overcome his reasons for refusing the appeal.
29. With regard to the planning obligations, the Secretary of State agrees with the Inspector (IR9.617-9.622) that the provisions are compliant with the Community Infrastructure Levy Regulations 2010. However, and having particular regard to the uncertainties surrounding the timing of the Walton Street Gyratory, the Secretary of State does not consider that they are sufficient to overcome his concerns with the proposed scheme as identified in this decision letter.

Overall planning balance

30. For the reasons given at IR9.623-9.657, the Secretary of State agrees with the Inspector (IR9.652) that the benefits of the project would be very substantial and sufficient to outweigh the shortcomings of all but one of the main considerations, both individually and cumulatively. However, he also agrees (IR9.653) that the single issue of highways and transportation needs to be balanced against the advantages of a project which would deliver homes and jobs in a manner consistent with government policy. As the Inspector concludes, the key element of the Walton Street gyratory would be subject to a separate consenting regime, the successful outcome of which could not be guaranteed and, without which, any planning permission for the appeal scheme could not be fulfilled. The Secretary of State therefore agrees with him (IR9.657) that these drawbacks are considerable and provide a telling balance against what would otherwise be an acceptable scheme.

APPEALS C & D: WEEDON HILL

The landscape and visual effects

31. Having given careful consideration to the Inspector's analysis at IR9.658-9.684, the Secretary of State agrees with him at IR9.685 that Buckingham Park has a clearly defined and robust boundary with the open countryside and that, even with the proposed mitigation measure, the proposed developments (whether those included in Appeal scheme C or D) would have significant impacts on the character of the landscape and cause identifiable harm to its appearance. The Secretary of State therefore also agrees with the Inspector that, insofar as AVDLP Policy GP.35 is a landscape protection policy, the proposal would be in conflict with the development plan.

Conditions and obligations

32. The Secretary of State has considered the proposed conditions and the Inspector's comments on them in respect of Appeal C at IR9.686-9.692 and in respect of Appeal D at IR9.693-9.694. He is satisfied that the conditions recommended by the Inspector at

Annex F(ii) to the IR in respect of Appeal C and at Annex G(i) in respect of Appeal D are reasonable and necessary and meet the tests of the Framework and the guidance. However, he does not consider that these overcome his reasons for refusing these appeals.

33. With regard to the planning agreements with Aylesbury Vale District Council (IR9.695-9.703), the Secretary of State agrees with the Inspector that all the provisions except that relating to the policing contribution are compliant with the Community Infrastructure Levy Regulations 2010. The Secretary of State also agrees with the Inspector that the planning agreements with Buckinghamshire County Council (IR9.704-9.707) are similarly compliant. However, the Secretary of State does not consider that the provisions set out in these agreements are sufficient to overcome his concerns with the proposed Appeal C and D schemes as identified in this decision letter.

Overall planning balance

34. For the reasons given by the Inspector at IR9.708-9.713, the Secretary of State agrees with his conclusions therein. In particular, the Secretary of State agrees that, with either Appeal scheme C or D, the proposed development would spill out beyond the generally effective containment and natural outline of Buckingham Park and climb, prominently, to an undefined ridgeline boundary which would require deep, uncharacteristic buffer planting to form a delineating feature (IR9.708). It would be at odds with one of the key characteristics of the Northern Vale Landscape Character Area and manifestly intrusive (IR9.709). The Secretary of State also agrees that the proposed park and ride facility would sit in isolation without physical connection, or even close association with the built-up area, belittling the low lying vale landscape of the Hulcott Vale Landscape Character Area and having an insensitive impact on the appearance of the landscape (IR9.720).
35. However, like the Inspector, the Secretary of State has weighed these against the benefits of the scheme, particularly the delivery of much needed homes and jobs, as well as the other benefits referred to at IR9.711; and he agrees with the Inspector's conclusions (IR9.712-9.713) that the significant benefits of either scheme are far outweighed by the harm identified. Each scheme would be in conflict with AVDLP Policy GP.35 and would not be sustainable development in the terms of the policies of the Framework when read as a whole.

Overall conclusion

36. Overall, while recognising the important contribution which each of the appeal schemes would make to the social and economic wellbeing of the area, particularly through the provision of much-needed housing, the Secretary of State considers that, in each case, there are adverse factors which significantly and demonstrably outweigh the benefits of the particular scheme. In the case of Appeal A, the proposed development would not contribute to the environmental role of sustainable development and would fall short on the promotion of sustainable transport. In the case of Appeal B, the drawbacks of being dependent on a separate consenting regime to resolve the serious implications for the highway network outweigh the benefits that would be provided if the scheme were able to proceed on a timely basis. And in the case of Appeals C and D, the Secretary of State considers that the significant impacts on the character of the landscape and the harm to its appearance outweigh any benefits as well as bringing it into conflict with the development plan.

Formal Decision

37. Accordingly, for the reasons given above, the Secretary of State agrees with the Inspector's recommendations. He hereby dismisses your clients' appeals in respect of:

A – Application ref: 10/01504/AOP dated 19.07.2010 by Barwood Land and Estates Limited, and refused on 25.07.2012, for 2,745 dwellings, 30,000m² employment space, school, care home, railway station;

B – Application ref: 12/00605/AOP by the Hampden Fields Consortium, dated 12.03.12 and amended on 02.11.12. The appeal was against the failure of the Council to determine the application for up to 3,000 dwellings, care home, land for a Park & Ride facility and a waste recycling facility, employment land, 2 schools, mixed-use local centre, and multi-functional green infrastructure;

C – Application ref: 12/00739/AOP by Hallam Land Management Limited, dated 30.03.12. The appeal was against the failure of the Council to determine the application for up to 120 dwellings, employment development and Park & Ride facility;

D – Application ref: 12/02850/AOP by Hallam Land Management Limited, dated 19.12.12 and refused on 12.04.13 for up to 220 dwellings and a Park and Ride facility on the same site as (C).

Right to challenge the decision

38. A separate note is attached setting out the circumstances in which the validity of the Secretary of State's decision may be challenged by making an application to the High Court within six weeks from the date of this letter.

39. A copy of this letter has been sent to the Council. A notification e-mail / letter has been sent to all other parties who asked to be informed of the decision.

Yours faithfully

Jean Nowak

JEAN NOWAK

Authorised by Secretary of State to sign in that behalf



Report to the Secretary of State for Communities and Local Government

by David M H Rose BA (Hons) MRTPI

an Inspector appointed by the Secretary of State for Communities and Local Government

Date: 1 September 2014

Town and Country Planning Act 1990

Aylesbury Vale District Council

Appeal A: Barwood Land and Estates Limited

Fleet Marston Farm, Fleet Marston, Aylesbury, HP18 0PZ

Appeal B: The Hampden Fields Consortium

**Land at south east Aylesbury, located to the east of A413 Wendover Road
and south west of A41 Aston Clinton Road, Aylesbury, HP21 9DF**

Appeals C & D: Hallam Land Management Limited

**Land north of Weedon Hill Major Development Area,
Adjoining A413 Buckingham Road, Aylesbury, HP22 4DP**

Inquiry (Appeals A, B and C) opened on 25 June 2013 and closed on 9 December 2013
Inquiry (Appeal D) opened on 15 October 2013 and closed on 9 December 2013

File references:

APP/J0405/A/12/2181033; APP/J0405/A/12/2189277; APP/J0405/A/12/2189387; &
APP/J0405/A/12/2197073

Inspector's Report

APP/J0405/A/12/2181033; APP/J0405/A/12/2189277; APP/J0405/A/12/2189387; & APP/J0405/A/12/2197073

CONTENTS	Page
Section 1: Introduction	3
Section 2: The Case for Aylesbury Vale District Council	18
Section 3: The Case for Barwood Land and Estates Limited	89
Section 4: The Case for The Hampden Fields Consortium	142
Section 5: The Case for Hallam Land Management Limited	193
Section 6: The Case for The Hampden Fields Action Group	211
Section 7: The Case for Arnold White Estates Limited	218
Section 8: The Cases for Other Parties	221
Section 9: Inspector's Conclusions	235
Section 10: Inspector's Recommendations	334
Annex A: Appearances	335
Annex B: Core Documents	339
Annex C: Proofs of Evidence and Related Documents	363
Annex D(i): Draft Planning Conditions (Fleet Marston)	370
Annex D(ii): Recommended Planning Conditions (Fleet Marston)	386
Annex E(i): Agreed Draft Planning Conditions (Hampden Fields)	397
Annex E(ii): Recommended Planning Conditions (Hampden Fields)	408
Annex F(i): Agreed Draft Planning Conditions (Weedon Hill: Mixed-use)	417
Annex F(ii): Recommended Planning Conditions (Weedon Hill: Mixed-use)	422
Annex G(i): Agreed Draft Planning Conditions (Weedon Hill: Residential)	426
Annex G(ii): Recommended Planning Conditions (Weedon Hill: Residential)	431

APPEAL A

File Ref: APP/J0405/A/12/2181033

Fleet Marston Farm, Fleet Marston, Aylesbury, HP18 0PZ

The appeal is made under section 78 of the Town and Country Planning Act 1990 against a refusal to grant outline planning permission with all matters reserved for later approval.

The appeal is made by Barwood Land and Estates Limited against the decision of Aylesbury Vale District Council.

The application, reference 10/01504/AOP, dated 19 July 2010, as amended on 26 January 2012, was refused by notice dated 25 July 2012.

The development proposed is a mixed-use sustainable urban extension to Aylesbury, comprising:-

- o 2,745 dwellings;
- o 30,000 sq m of employment (Use Classes B1/B8) floorspace;
- o a primary school and a reserve second primary school;
- o up to 3,050 sq m of retail (Use Class A1 – A5) floorspace;
- o a 60-bed care home with 20 close-care apartments;
- o 1,300 sq m of multi-functional community space (Use Class D1);
- o a doctor's surgery;
- o a gym;
- o a community recycling facility;
- o multi-functional green infrastructure (106.8 ha) including parkland, sports pitches, children's play areas, informal open space, interpretation facilities and centres, allotments, community orchards, woodland, surface water attenuation and land remaining in small scale, low intensity, productive agricultural use;
- o vehicular access from up to five locations along the A41;
- o internal roads, streets, lanes, squares, footpaths and cycleways; and
- o a railway station.

Summary of Recommendation: The appeal be dismissed

APPEAL B

File Ref: APP/J0405/A/12/2189277

Land at south east Aylesbury, located to the east of A413 Wendover Road and south west of A41 Aston Clinton Road, Aylesbury, HP21 9DF

The appeal is made under section 78 of the Town and Country Planning Act 1990 against the failure of the Aylesbury Vale District Council to determine an outline planning application with all matters reserved.

The appeal is made by the Hampden Fields Consortium.

The application, reference 12/00605/AOP, was dated 12 March 2012, and was amended on 2 November 2012.

The development proposed is a mixed-use sustainable urban extension comprising:-

- o up to 3,000 dwellings and a 60 bed care home/extra care facility (Use Class C2/C3);
- o provision of land for a Park and Ride site and a Waste Recycling Facility adjoining the A41 Aston Clinton Road;
- o a total of 9.45 ha of employment land (comprising of up to 40,000 sq m B1/B2/B8 uses);

Inspector's Report

APP/J0405/A/12/2181033; APP/J0405/A/12/2189277; APP/J0405/A/12/2189387; & APP/J0405/A/12/2197073

- link road between A413 Wendover Road and A41 Aston Clinton Road;
- provision of two primary schools (both 3 form entry);
- a mixed-use local centre (4.09 ha) comprising of a 1,200 sq m (GFA) food store, further retail (including a pharmacy), restaurants and café units, a doctor's surgery, gym, public house with letting rooms, professional services, and a multi-functional community space and day nursery;
- multi-functional green infrastructure (totalling 103.13 ha) including parkland, sports pitches, sports pavilion, children's play areas, informal open space, allotments, community orchards, woodland, landscaping and surface water attenuation; strategic flood defences; vehicular access points from New Road, Marroway, A413 Wendover Road and A41 Aston Clinton Road; and
- internal roads, streets, lanes, squares, footpaths and cycleways.

Summary of Recommendation: The appeal be dismissed and planning permission be refused

APPEAL C

File Ref: APP/J0405/A/12/2189387

Land north of Weedon Hill Major Development Area, Adjoining A413 Buckingham Road, Aylesbury, HP22 4DP

The appeal is made under section 78 of the Town and Country Planning Act 1990 against the failure of the Aylesbury Vale District Council to determine an outline planning application with all matters, other than access, reserved for later approval.

The appeal is made by Hallam Land Management Limited.

The application, reference 12/00739/AOP, was dated 30 March 2012.

The development proposed is B1 employment development, residential development of up to 120 units and a park and ride facility.

Summary of Recommendation: The appeal be dismissed and planning permission be refused

APPEAL D

File Ref: APP/J0405/A/12/2197073

Land north of Weedon Hill Major Development Area, Adjoining A413 Buckingham Road, Aylesbury, HP22 4DP

The appeal is made under section 78 of the Town and Country Planning Act 1990 against a refusal to grant outline planning permission with all matters, other than access, reserved for later approval.

The appeal is made by Hallam Land Management Limited against the decision of Aylesbury Vale District Council.

The application, reference 12/02850/AOP, dated 19 December 2012, was refused by notice dated 10 April 2013.

The development proposed is up to 220 residential units and a park and ride facility.

Summary of Recommendation: The appeal be dismissed

1. Introduction

Procedural matters

- 1.1 The evidence for appeals A, B and C was presented on 25 - 28 June; 2 - 5 July; 9 - 12 July; 30 July - 2 August; 6 - 9 August; 13 - 16 August; 29 October - 1 November; and 5 - 8 November 2013.¹
- 1.2 The evidence for appeal D was given on 15 and 16 October 2013. Closing submissions for all four appeals were heard on 9 December 2013. Given the overlapping nature of the two Inquiries reference in the report to 'the Inquiry' covers both events.
- 1.3 Accompanied site visits for appeals A and B took place on 12 November 2013 and those for Appeals C and D were held on 17 October 2013. Extensive unaccompanied site visits were made before and during the course of the Inquiry.
- 1.4 Proofs of evidence as originally submitted are included as Inquiry documents; but their content may have been affected by oral evidence, concessions and corrections. Full written closing submissions are also available and these were supplemented by oral summaries and responses.
- 1.5 Each appeal site will be referred to in short form throughout this report:- appeal A ('Fleet Marston'); appeal B ('Hampden Fields'); appeal C ('Weedon Hill mixed-use'); and appeal D ('Weedon Hill residential'). 'Weedon Hill' will be used when referring to both proposals in common.
- 1.6 Similarly, each of the promoters will be referred to as 'Barwood'; 'the Consortium'; and 'Hallam' respectively.
- 1.7 During the course of the Inquiry a number of oral rulings (recorded in a subsequent written note) were made. Particular attention is drawn to:-
 - (a) submissions in relation to the progress of proposals for the High Speed 2 rail route (HS2) and potential impacts on the Fleet Marston scheme;²
 - (b) submissions concerning the Statement of Common Ground on Highway and Transport Matters (Hampden Fields);³
 - (c) submissions relating to Grampian conditions: Saint Mary's church, Fleet Marston;⁴
 - (d) the appearance at the Inquiry of Buckinghamshire County Council's Consultant Lead Development Management Officer, Highways and Transportation;⁵ and
 - (e) the arrangements for closing submissions.⁶

¹ The landscape evidence for Appeal C was heard with Appeal D

² Document X2

³ Documents X4; X8

⁴ Document X5

⁵ Document X10

⁶ Documents X11; X12

APPENDIX D: Consultation Responses (Consultees)

Councillor Comments

Local Member Cllr Mark Winn 23.03.2016

In light of fact I need to get some comments in on this planning application 16/00424/ AOP I would like to say that I am worried about the following:

Will the dual carriageway through the development be built; this should be made a condition of any planning? If not, it should be.

With all the developments planned including Woodlands, which is single carriageway, Aylesbury East again single carriageway there is very little evidence however welcome a dual carriageway might be that it will provide any relief or alternative for many to the already overcrowded roads in Aylesbury especially the gyratory and will it therefore really provide the traffic reductions claimed? I very much doubt it will.

Dr's surgery, why is there none planned, especially when there is none planned for Aylesbury east too. This will put overwhelming strain on our local hospital as people will not be able to get treatment at their GPs they will go straight to casualty, potentially breaking an already overstretched hospital.

Schools there should be a pre-condition that both schools are completed before the development got to a certain stage. Otherwise the strain on local primary schools and the effect on parking and traffic in our town would be catastrophic. And why is there no requirement for a secondary school, in either this development or Aylesbury east, how is Aylesbury supposed to cope with the influx of more pupils without extra school places. Schools in the area certainly do not have any or very few spare places.

I think the claims that small numbers will use the railway are pure fantasy, it will lead to already overcrowded trains to London becoming more crowded and it will cause severe issues of overcrowding in the small car park at Stoke Mandeville. The rationale for these figures needs to be explained.

Leisure facilities, I know that the already overcrowded leisure facilities cause in Bedgrove where parking is a major issue, I would like to see a phased completion of leisure facilities become a condition of planning.

Affordable housing there needs to be a planning condition that 900 homes 30% are affordable, otherwise claims that this development would help housing shortages are false. Any attempt to reduce the number to accommodate the dual carriageway should be resisted and rejected.

Based on my comments above I think that the planning department need to consider very carefully does this application meet the reasons why it was rejected both in committee and by the planning Inspector, does it not still have a negative effect on the road network when considered together with Woodlands, Aylesbury East and numerous other developments in the area. Will the dual carriageway help if others will merely add to our existing issue of overcrowded roads, I would argue it does not. Therefore, together with all of the other issues identified above it should be rejected or the number of houses and size of development reduced, because as it stands it simply would not be economically sustainable and it would have a detrimental effect on the infrastructure of Aylesbury and the

surrounding area. I would like to speak at Strategic Development control when it comes before them.

Parish/Town Council Comments

Weston Turville Parish Council – 21.12.20

The Parish Council has previously objected to this application and remains opposed to the principle of a development of this size in this area.

The development site lies solely within the parish of Weston Turville and would result in the coalescence of Aylesbury with the surrounding villages Weston Turville, Aston Clinton and Stoke Mandeville resulting in the loss of identity of these historic old villages.

The Parish Council believes that the road infrastructure cannot cope with the additional burden that a development of this size would put on the area, even with the proposed new roads. There

needs to be better connectivity with Aylesbury town centre, not just a series of link roads around it.

The Council has profound concerns about utilities supplies. Thames Waters response states that the current water network will not be able to accommodate the needs of Hampden Fields. Weston Turville regularly suffers power cuts and the Parish Council is concerned that the additional pressure of the new development will compound this issue.

The Parish Council recognises that the Aylesbury Garden Town plans relies heavily on this development being approved and should Bucks Council approve it, the Parish Council would like to see further mitigation to protect the current residents of Weston Turville.

Link road between A413 and A41 to be built first to take traffic, particularly construction traffic, away from the villages of Weston Turville and Aston Clinton

Construction plan to include routes for construction traffic that avoids Weston Turville village Weight restriction for Main Street, Weston Turville

New, fit for purpose cycle routes linking Aylesbury to Hampden Fields, Weston Turville and through to Wendover, and Weston Turville to Aston Clinton and A413 Wendover Road

Improved bus service to include both ends of the village currently only Worlds End Lane and Marroway are served by buses.

The Parish Council will send a representative to speak when the application is considered by Bucks Councils committee and would welcome an opportunity to be consulted when the s106 agreement is drawn up.

Weston Turville Parish Council – 08.05.2017

The Parish Council welcomed the traffic calming scheme proposed for Weston Turville village but maintains its objection to the application. The Council has serious concerns that the link roads proposed by this and the Woodlands development would not ease the traffic congestion in the area, particularly in view of the lack of commitment to extend the link road any further at this time. The addition of 3000 houses will only compound the congestion experienced by local residents and commuters.

Should the District Council approve the application the Parish Council would welcome a discussion with AVDC and the developer regarding the ongoing maintenance of communal/public areas within the development and may be willing to take on responsibility for these subject to the commuted sum for ongoing maintenance being made available to the Parish Council.

Weston Turville Parish Council - 28.03.16

OPPOSES this application for the following reasons:

1. Highways The traffic modelling for the Hampden Fields development is based on a model which includes the Woodlands development which has only just been submitted and has not been granted planning permission. It omits any reference to traffic flow which excludes this development. The proposed application provides a link road between A41 and A413, however the Parish Council believes that this does not address the issues with the gyratory system highlighted by the Inspector at the appeal for the previous application.

2. Coalescence The development site lies entirely within the parish of Weston Turville, however it is referred to as an urban extension of Aylesbury. The proposed development would cause coalescence between the village of Weston Turville, Aylesbury and Stoke Mandeville which was highlighted by the Enquiry at the last appeal as a specific concern. This latest application does not address this issue. It conflicts with the aim of safeguarding open land that contributes to the form and character of rural characteristics around Weston Turville and Stoke Mandeville. If this application is considered by Committee, the Parish Council will send a representative to speak.

Aston Clinton Parish Council 30.12.2021

Aston Clinton Parish Council's objections remain for this application on a number of grounds including:

Increased volume of traffic on an immediate local level without sufficient plans for mitigation

Housing density with 50 dwellings per hectare and the social impact of this for existing and future residents.

Flood risk and lack of infrastructure for water run off and foul drainage

Aston Clinton Parish Council – 09.04.2016

We object to this application on the following grounds:

1) The vast increase in traffic that this would involve will have profound impact on Aylesbury and the gyratory system. This point was fundamental in the Secretary of State's refusal of the original application. The new plan does not materially change this to any great degree. The traffic statement has many flaws and misrepresentations that will be exposed with an in depth appraisal. It also will have an enormous effect on the traffic through our village as people seek to avoid the congestion that this development will bring. There has been no mitigation of this and the proposal of the link road itself has profound flaws. The assumption that traffic is seeking to route around Aylesbury is incorrect as most traffic is coming into the town or people are commuting away. A ring road will not help this, and building three thousand homes will enormously exacerbate the problem.

2) The provision of school places is fundamental to this as the local area primary and secondary schools are nearing capacity. These must be built before the housing as there will be no local places available.

3) Doctor's surgery only has provision for and nor provision of and this needs to be addressed. We would assume this should be built by the developer and not left to the local health care provider to fund.

4) The intrusion into open countryside is massive and results in massive loss of agricultural land and biodiversity which is contrary to NPPF policy. This development sits unhappily

between Aylesbury and the villages to the south and will bring coalescence. We do not wish to become a urban extension of Aylesbury. ACPC planning

Wendover Parish Council 22.12.2020

Stance: Customer objects to the Planning Application

Comment Reasons:

- Noise
- Residential Amenity
- Traffic or Highways

Wendover Parish Council Response to the impact of the Hampden Fields development on our community:

Objections: The placing of the Hampden Fields development between the A41 and A413, at the current size which almost matches the size of Wendover itself, will have a serious impact on all the surrounding local villages and communities. During construction, heavy traffic will be adding to the congestion around Aylesbury which is already a nightmare. This will be in addition to that already being experienced from the Woodlands development and HS2. The air quality along the A41 Tring Road is already too high at peak periods, such that it is no longer monitored!! This will increase both during construction and once fully complete due to the increased numbers of cars etc .

Flood Risk

As the development is in zones 2 and 3 with an impact on three streams, one of which is the Wendover Brook, what measures are in place to prevent flooding in the new development, especially as the rainfall has increased significantly in recent years, since 2015? Will developers be liable if flooding occurs in surrounding areas as a result of the development?

Ecology

Wildlife corridors must connect to help maintain the habitat of local species and the no development buffer zone should include reduced lighting to aid this. The Bedgrove park area has significant numbers of hedgehogs for example will developers ensure good practice when working in these areas?

Will the planting of new species rich areas be monitored as the majority of new estates seem to have one or two types of trees or hedges, few with any wildlife benefit?

Has the effect of other new developments been considered?

Water demand

Aylesbury Vale is already a water stressed area in terms of both supply and waste removal. Is a new sewage works to be instigated to deal with the excess requirements? How is the extra supply to be obtained without more abstraction from local streams which are already suffering?

Highways and traffic

The Southern link road as a dual carriageway is welcomed but the access on to the A413 will be difficult as it is not joining at the current roundabout. This is bound to affect the A413 which already queues from the Marroway into the Gyrotory at peak times. Access to and from Wendover is slow and will not be aided until the link through Stoke Mandeville has been completed.

With the park and ride - is that intended for residents, or those coming down A41 to access Aylesbury and the station?

Wendover is already a rat run from the A41 (Tring etc) to the A413 towards Amersham or towards Princes Risborough, this is unlikely to be helped by the link road. Increasing the population this side of Bedgrove will cause more traffic in Wendover heading for the Station, where parking is already at a premium and causes issues in the local residential streets. Would a local bus service from the new development, to Wendover be part of the plan?

It is hoped that these points will be considered.

Aylesbury Town Council. 7.01.2021

Aylesbury Town Council maintain their objection to this application.

Healthcare

The provision of a dedicated healthcare facility must be locked down and conditions placed on the delivery of this service. This facility is essential for the community and relieving the huge burden from the already struggling Health care facilities in the area.

Education

The provision of two primary schools must be completed as early as possible and a planning condition secured that the developer(s) complete these within a suitable time frame to ensure future residents have access to local schooling.

Roads

Aylesbury Town Council have noted the complex transport and highways issues that have been raised with regards to this application. These must be resolved satisfactorily. Further it is imperative to complete the Link road between A413 and A41 before other elements of the site are built in order to mitigate the impact of increased traffic (including construction traffic) on the surrounding villages and current residents.

Aylesbury Town Council would like to see S106 money go towards road safety measures, especially in Oakfield and Bedgrove Wards, this would at least give some benefit to these residents that will have their amenities impacted.

Aylesbury Town Council support the comments made by Affordable Housing and have great concerns for the lack of response from the developers to the comments from Thames Water who have identified that the current sewerage treatment works and water supply infrastructure will not be able to accommodate the needs of Hampden Fields.

Aylesbury Town Council would welcome consultation for design of the development and landscaping to ensure a future proof, sustainable development which we would expect to adhere to Aylesbury Garden Town principles. This should include, but is not limited to, electric car charging points for all properties, active travel schemes, advanced internet connectivity/infrastructure to allow for increased homeworking

Aylesbury Town Council will send a representative to speak when this application is considered by Bucks Councils committees. Aylesbury Town Council would welcome the opportunity to be consulted when the S106 agreement is being discussed.

Aylesbury Town Council - 07.04.2016

OBJECT this application. The committee have a number of concerns over the facilities and infrastructure of the proposed development at Hampden Fields.

Education

There is provision for two new primary schools which is welcomed, but the issue over secondary school places must be addressed. The potential to provide new secondary on Kingsbrook is something that has to be taken forward if this application is to gain approval,

without the expansion of education Aylesbury's current secondary schools will struggle to provide the required extra spaces, even with significant investment, they simply do not have the land to expand and meet the potential need of the expanded population. The committee decided that the provision of a new secondary school is therefore a must have for the town of Aylesbury for this application to be sustainable.

Roads

The committee have great concern over the road network, particularly to the east of the town, the provision of the southern link road is a must, but this road must also be fit for the future, in short the Southern Link Road HAS to be a dual carriageway from day one, an option to upgrade this provision will simply not work and would make congestion worse. The committee accepts that the provision of new capacity and routes onto the town's road network should help to ease congestion, but there is scepticism as to whether this provision will be enough to offset the introduction of 3000 homes at Hampden Fields as well as the development at Kingsbrook and potentially at Woodside. The poor narrowing design of the Stocklake extension into the center of the Kingsbrook development is a cause for concern as that may reduce the attractiveness of the route to motorists who may wish to use that road to travel into Aylesbury. We note that the road network capacity increase is projected to reduce poor air quality in some of the town's air quality management areas, notably Tring Road and the Gyrotory, after so many years of inaction this improvement is welcome, but the committee remain sceptical that the required improvements in air quality materialise. The proposed Park & Ride scheme must be fully funded or the provision of that land is simply a waste, the Park & Ride at Buckingham Park has never had funding and is now a derelict eyesore gathering fly tipped waste, that cannot be allowed to happen again.

Healthcare

The provision of a dedicated healthcare facility is welcomed but again this facility needs to meet all the needs of the new development and the existing community, the facility must be fully committed under a 106 agreement, we cannot have the situation that exists on other developments where health facilities are stuck in portacabins many years after completion with seemingly no hope of a permanent facility.

Summary

It is the view of the Aylesbury Town Council Planning and Licensing committee that the Hampden Fields development will only be sustainable if the caveats above are met in full. The town and wider vale, if it is to be developed sustainably must have the increased capacity in Education, better Transport links and Healthcare to lessen the burden on our already stretched infrastructure, the Town Council Planning and Licensing committee reserve the right to reassess our position on this application if the proposed infrastructure does not materialise. If the application is considered by Committee, Parish Council will speak at the Management Committee Meeting.

Bierton Parish Council 16.12.20

No comments

Stoke Mandeville Parish Council 12.02.2021

Stoke Mandeville Parish Council wishes to object to this application on the following grounds:

- There is no healthcare provision included. Priority should be given to a facility to take the pressure off the facilities in the surrounding area.
- Primary school education facilities need to be in situ at the start of the development to enable residents' access to schooling on the estate.
- The parish council has great concerns over the comments made by Thames Water that the current sewerage treatment works, and water supply infrastructure will not accommodate demands from the estate. It is disappointed that this has not been addressed by the developers.
- This should be a sustainable development that incorporates sufficient electric car charging points and advanced connectivity for home working.

The comments of the Parish Council are based on the maps contained within the document TA ADDENDUM HF STAND ALONE ASSESSMENT PART ONE:

Station Road A4010/Wendover Road A413

- It is noted that more queuing space is to be at the junction of Wendover Road and Station Road.
- The verges are not being reduced and the roads are not being widened to accommodate the additional traffic.
- The refuges are shown to be in a slightly different position than at present.
- The PACE Centre caters for children who are vulnerable which should be considered and reflected in the changes to the road layout. A pedestrian crossing is viewed, as necessary.
- There are safety issues for 158 – 164A Wendover Road as their service road will open up directly at the point of the new junction and in addition, they will have to negotiate pedestrians at the refuge.
- The proposed road layout would not be safe unless there were controlled lights near the service road.
- With the resultant high volume of traffic, should this development go ahead consideration should be given to the use of footbridges or a subway.
- Residents of Hampden Fields should be encouraged to walk or cycle to SM Railway Station especially as a new cycle/pedestrian path is indicated on the plan for Station Road. However, there is some concern as to its limited width. It is assumed that these new proposals have been discussed with Chiltern Rail.
- The proposed light controlled crossing shown on the plan for Station /Dorchester Close is depicted to be approximately halfway along the bridge incline. There would need to be adequate signage on the other side of the bridge (if travelling from the village towards the Wendover Road) to give drivers warning time to anticipate the use of a red light. Some uncertainty exists as to why this bridleway access leading to Carters Ride is to be upgraded. Any additional traffic signals would need to be linked to a Traffic Management System. Stoke Mandeville

The Parish Council therefore proposes the following.

- Refuges on the Wendover Road are acceptable. However, consideration should be given to these being signalised lights under the control of a linked Traffic Management System to keep traffic flowing.
- There is a need for the distance of railings across the railway bridge to be lengthened. It is recognised that any changes to the railway bridge footpath etc. would require discussion with Network Rail.
- The shared footway along Station Road should be widened to enable safe passage past Dorchester Close towards Wendover Road and to accommodate the dual cycle/pedestrian way.
- The question has arisen as to why the existing roundabout at the junction of the A413 Wendover Road and Wendover Way. Aylesbury is proposed to be removed and whether this would be replaced by traffic lights?
- Signalised lights should be provided at the Hampden Fields access along the A413 Wendover Road as part of a Traffic Management System.
- Major concerns are expressed about the road junction of the A.4010 Station Road and the A.413 Wendover Road as no traffic control is shown on the plan. It is anticipated that there could be confusion with the number of accesses at this junction without any prioritisation to allow movement of cars from PACE and the residential service road.
- Concerns are expressed of the likely increase in the traffic tailback along Risborough Road and Lower Road towards Aylesbury because of new developments proposed for Lower Road. This also overflows to Station Road which is a residential area with narrow footpaths and is totally unsuitable for additional heavy traffic flows especially during the seven-year period for the construction of HS2. In addition, this route is currently used as the main roadway between High Wycombe and Milton Keynes taking considerable heavy vehicles. Therefore, controlled crossings as suggested should be provided to ensure safe passage especially for those using the village school. Furthermore, it should be noted that HS2 Ltd advises that it is intended that the realignment of the A.4010 around Stoke Mandeville village is to take place prior to the main construction works and should be completed in 2019 when Risborough Road will become a cul-de-sac road.

Conditions that should be applied if the development does take place.

- The land reserved for employment should be light industry / commercial use only.
- The development should be mixed use to incorporate home/work units.
- The development should include extra care housing for elderly and disabled people.
- Green buffers between the development and existing communities should be retained and/or strengthened.
- Any development proposed close to existing homes along Wendover Road should be single storey.

- Key infrastructure should be in place as early as possible to minimise impacts elsewhere.

Stoke Mandeville Parish Council 04.05.2017

The following are the comments from Stoke Mandeville Parish Council inasmuch as this application potentially affects the local highways in Stoke Mandeville Parish.

The Parish Council expressed its discontent with the standard of the accompanying documentation “Additional Highways Reporting” in particular that roads are not named on maps, there is no annotation or definition and some of the maps are without names.

The comments of the Parish Council are based on the maps contained within the document TA ADDENDUM HF STAND ALONE ASSESSMENT PART ONE:

Station Road A4010/Wendover Road A413

- *It is noted that more queuing space is to be at the junction of Wendover Road and Station Road.*
- *The verges are not being reduced and the roads are not being widened to accommodate the additional traffic.*
- *The refuges are shown to be in a slightly different position than at present.*
- *The PACE Centre caters for children who are vulnerable which should be considered and reflected in the changes to the road layout. A pedestrian crossing is viewed as necessary.*
- *There are safety issues for 158 – 164A Wendover Road as their service road will open up directly at the point of the new junction and in addition they will have to negotiate pedestrians at the refuge.*
- *The proposed road layout would not be safe unless there were controlled lights near the service road.*
- *With the resultant high volume of traffic, should this development go ahead consideration should be given to the use of footbridges or a subway.*
- *Residents of Hampden Fields should be encouraged to walk or cycle to SM Railway Station especially as a new cycle/pedestrian path is indicated on the plan for Station Road. However, there is some concern as to its limited width. It is assumed that these new proposals have been discussed with Chiltern Rail.*
- *The proposed light controlled crossing shown on the plan for Station /Dorchester Close is depicted to be approximately half way along the bridge incline. There would need to be adequate signage on the other side of the bridge (if travelling from the village towards the Wendover Road) to give drivers warning time to anticipate the use of a red light. Some uncertainty exists as to why this bridleway access leading to Carters Ride is to be upgraded. Any additional traffic signals would need to be linked to a Traffic Management System. .*

The Parish Council therefore proposes the following;

- *Refuges on the Wendover Road are acceptable. However, consideration should be given to these being signalised lights under the control of a linked Traffic Management System to keep traffic flowing.*
- *There is a need for the distance of railings across the railway bridge to be lengthened. It is recognised that any changes to the railway bridge footpath etc. would require discussion with Network Rail*

- *The shared footway along Station Road should be widened to enable safe passage past Dorchester Close towards Wendover Road and to accommodate the dual cycle/pedestrian way.*
- *The question has arisen as to why the existing roundabout at the junction of the A413 Wendover Road and Wendover Way. Aylesbury is proposed to be removed and whether this would be replaced by traffic lights?*
- *Signalised lights should be provided at the Hampden Fields access along the A413 Wendover Road as part of a Traffic Management System.*
- *Major concerns are expressed about the road junction of the A.4010 Station Road and the A.413 Wendover Road as no traffic control is shown on the plan. It is anticipated that there could be confusion with the number of accesses at this junction without any prioritisation to allow movement of cars from PACE and the residential service road.*
- *Concerns are expressed of the likely increase in the traffic tailback along Risborough Road and Lower Road towards Aylesbury because of new developments proposed for Lower Road. This also overflows to Station Road which is a residential area with narrow footpaths and is totally unsuitable for additional heavy traffic flows especially during the seven year period for the construction of HS2. In addition this route is currently used as the main roadway between High Wycombe and Milton Keynes taking considerable heavy vehicles. Therefore, controlled crossings as suggested should be provided to ensure safe passage especially for those using the village school. Furthermore, it should be noted that HS2 Ltd advises that it is intended that the realignment of the A.4010 around Stoke Mandeville village is to take place prior to the main construction works and should be completed in 2019 when Risborough Road will become a cul-de-sac road.*

Stoke Mandeville Parish Council 16.03.16

No objections to this application subject to the following : The land reserved for employment should be light industry / commercial use only. The development should be mixed use to incorporate home/work units. The development should include extra care housing for elderly and also disabled people Green buffers between the development and existing communities should be retained and/or strengthened. Any development proposed close to existing homes along Wendover Road should be single storey. Key infrastructure should be in place as early as possible to minimise impacts elsewhere.

Former MP David Lidington - Comments

"I am writing about the proposal now before Aylesbury Vale District Council (AVDC) to build 3,000 homes, a nursing home, a retail development, commercial premises and other services on land between the A41 Aston Clinton Road and the A413 Wendover Road. I have studied carefully the arguments put forward to me by my constituents about this particular planning application. I have also taken note of some of the comments which have been made direct to AVDC and published online by the Council. In recent weeks I have received comments by the Chairman of the Hampden Fields Action Group, local District Councillors, as well as various constituents.

I am writing now to ask you to take fully into account the opinions expressed by my constituents in objecting to this scheme in the officers' analysis of the proposal and in your presentation of advice to the Strategic Planning Panel. I would also ask that all members of the Panel consider very carefully and sympathetically the arguments that my constituents have put forward.

The chief concerns expressed by my constituents have been over the coalescence of Aylesbury and Weston Turville, the likely traffic impact of this proposed development, the impact on education and health services in the locality and the question of whether this proposal, if permitted, would seriously pre-empt the new Aylesbury Vale Local Plan which is being developed under the new procedures laid down in the Localism Act.

I have noted that the applicants make their case very much in terms of sustainable development. They argue in particular that the development is both justified and sustainable because Aylesbury needs more housing and argue too that this particular proposal is sustainable in transport terms because it would offer easy access to modes of transport other than roads and would provide a development that was in terms of transport links well integrated with the existing town of Aylesbury.

It seems to me that if the concept of sustainable development is to mean anything then it must require a development proposal to be analysed not only as a self-standing plan but also on the basis of its impact upon existing residents, community identities and local services. In addition, such an analysis needs to take account of future new developments that have already been planned for and approved. If this is not done then it seems to me that sustainability ceases to have much meaning. There is a clear implication in the application documents that the applicants themselves accept this principle because they emphasise how in their view the Hampden Fields development would be well integrated with the rest of Aylesbury and in particular with bus routes, existing rail services, pedestrian routes and cycleways.

My constituents have put forward to me both in writing and verbally a range of arguments which suggest that the case that this proposal can be described as sustainable is seriously flawed.

Constituents in Weston Turville feel particularly strongly that giving permission for the Hampden Fields development to go ahead would in practice mean accepting that Weston Turville would lose its distinctive village identity and become in effect a suburb of Aylesbury. The applicants of course argue that this is not the case and that there would be a green belt of land left between the new edge of Aylesbury and Weston Turville but, having looked at the plans which they submitted to AVDC, I find it hard to accept that a green belt of no more than one field's width would really be sufficient for that distinction to be maintained. As I note below in my comments on the traffic impact of the scheme, I also fear that there is a significant risk in these proposals that Main Street, Marroway and New Road in Weston Turville would be turned into a rat-run between the Aston Clinton Road and the Wendover Road.

Maintaining and strengthening community identity seems to me an intrinsic part of sustainable development. The very fact that the Government's entire new planning framework is built on the basis that a local planning authority must consult and build up its plan from parish and neighbourhood level up to district level reinforces this point.

Aylesbury has been a fast growing town for more than 20 years. Significant growth is going to continue under plans already approved by AVDC. One of the challenges for policy makers is how to manage growth in a way that does maintain and if possible strengthen rather than

lose the local sense of place and community identity. I believe that avoiding the coalescence of Aylesbury with Weston Turville, and for that matter with Aston Clinton and Stoke Mandeville, should be an important element in the District Council's planning policy and I am not persuaded that this principle is met by this application.

The impact of the Hampden Fields proposal on local traffic has been a consistent theme of representations from constituents to me.

I have looked at the documents and forecasts given by the applicants to AVDC. From those, it is clear that main roads and in particular key junctions around Aylesbury are already operating at or close to full capacity. We already have a designated air quality management zone along the A41 near the junction with Oakfield Road, a sign that in this part of Aylesbury, European as well as national standards on air quality are not being met.

The argument made by the applicant is that the impact of this proposal on local traffic patterns would be manageable. Although I make no claim to being a technical expert, I find this defence of the proposal flawed and deeply unconvincing.

The modelling makes great play of the prospective ease and attractiveness to new residents in Hampden Fields of walking routes to the town centre, cycle routes and rail links from Stoke Mandeville station. This argument appears to me both to have some technical flaws and to fail to take into account how people will actually behave. On the technical side, the traffic model appears to work on the basis that Stoke Mandeville railway station or any other destination such as Aylesbury town centre will be attractive to reach on foot or bicycle because it is only a relatively short distance from Hampden Fields. The argument seems to rest on judging the attractiveness of those modes of transport by the distance of the designated destination from the closest point of the Hampden Fields development. Yet this development, if it goes ahead, is going to be three kilometres wide and it is simply not likely to be the case that, for example, someone living close to the Aston Clinton Road will choose to walk or cycle to Stoke Mandeville station. Equally, the further out towards Weston Turville a resident lived, the more likely he or she would be to use a car in order to get into the centre, let alone the north, of Aylesbury.

It is a good thing that the application proposes some development for employment as well as for residential purposes but I think it would be a mistake to make assumptions about the proportion of new residents of Hampden Fields who work within walking distance of home. Even if many of the new residents started off in that position the nature of the jobs market these days mean that people often shift their place of employment but for family reasons, especially if their children are settled in a good school, want to avoid moving house. So I think that the pattern of travel to work is likely to be very diverse as indeed is the pattern of travel to work in and out of Aylesbury today.

It also seems to me that while people might walk from Hampden Fields to Aylesbury town centre to go to the theatre or the cinema, they are going to drive to visit the supermarket or any of the other large retail centres in the town. Similarly, I think we would find that while parents might well walk with primary school age children to the school gate, they would then need to drive to their place of work in order to get there on time.

I am not convinced that the 'link' road which passes through the development will act as an adequate 'relief route' as cars attempt to pass from the A413 to A41 and vice versa. I foresee implications arising as a result of heavy traffic combined with a high level of pedestrian activity, especially around the mixed use area. The likely impact on the existing roads running through Weston Turville also seriously needs to be considered. I think that it is almost inevitable that some of the excess traffic, whether emanating from one of the

major roads or from the new development itself, would try to cut through Weston Turville village in order to find a way to avoid congestion.

I thought too that the traffic modelling submitted by the applicants was too sanguine about the likely impact of the development upon the roads running through Weston Turville. As AVDC's members and officers will know, the use of Marroway, Main Street and New Road as a rat run has been an issue of some concern in Weston Turville for many years and indeed led to the successful campaign for the installation of traffic calming measures in the village. Anyone who uses either the A41 or the A413 during peak hours knows that the traffic on those roads at that time is very busy indeed. I think it is almost inevitable that drivers using either of those main roads who finding traffic congestion getting too great would, once the new link road was built, try to use it as a cut-through to get to the other main route. I think too that it is almost inevitable that some of this traffic, whether emanating from one of the major roads or from the new development itself, would try to cut through Weston Turville village in order to find a way to avoid congestion. For example, drivers might well be tempted to go through Weston Turville village to take the lane up alongside Halton airfield in order to avoid congestion. I do not see in the applicants' documents any detailed analysis of these traffic risks which would have a significant impact on the quality of life of residents in Weston Turville."

Consultation Responses (Summaries)

Adult and Family Well-Being – No response

Affordable Housing

At reserved matters stages the applicant will need to supply *details of the Affordable Housing Scheme for each Phase and Parcel of the development showing the location, tenures, sizes and mix of affordable units that will be supplied taking in to account the points above.*

Affordable Housing Provision: Schemes of 25 units or over (or 1ha or more) are currently expected to have 30% affordable housing, unless a Neighbourhood Plan indicates a greater percentage, or the level of affordable housing is deemed unviable.

Affordable Property Mix: Affordable units should be reflective of the overall housing mix whilst also taking in to account local affordable housing need. There is a greater need for 2 bed 4 person and 3 bed 5 and 6 person houses, slightly less for 1 bed 2 person and 4 bed 6/7/8 person houses Tenure mix of 75% rented and 25% shared ownership are required. 2 and 3 bed houses are currently preferred for shared ownership.

Housing would ask for a good mix of property types and sizes reflective of the overall housing mix whilst taking in to account the local needs of the district. There is currently a greater need for two bedroom properties, then three bedrooms, less for 1 beds and 4 beds. There is a need for more affordable units to be accessible and adaptable (as per emerging VALP policy H6c), recommending that they meet Category 2 (accessible and adaptable) of Approved document M of the Building Regulations 2010 with a proportion of those (15%) to meet category 3 (wheelchair user) of the same document.

Overall design details, build quality and materials the affordable units should be indistinguishable from market housing.

In order to facilitate the timely completion and transfer of affordable units to a registered provider a trigger will be included in the s106, linked to the occupation of the open market units. The Council works in partnership with registered providers in the district and can supply details of these to support the delivery of the affordable homes. In the event that the applicant advises that the above is unviable they must provide an open book financial appraisal of the development. This would be independently assessed by a consultant of the council's choosing, at the expense of the applicant. If deemed necessary negotiations would be undertaken to secure any affordable housing contribution, preferably on-site, unless exceptional circumstances prevail.

Archaeology

If planning permission is granted for this development then it is likely to harm a heritage asset's significance so a condition should be applied to require the developer to secure appropriate investigation, recording, publication and archiving of the results in conformity with NPPF paragraph 199.

Berkshire Buckinghamshire Oxfordshire Wildlife Trust

Net loss of Biodiversity – No further objections subject to further BNG calculations should be submitted along side the detailed LEMP & CEMP that will be needed to clarify the gains and establish a more accurate figure on the basis of the firm detailed plans that will be required in the natural evolution of any development of this scale

Farmland Birds - No further objections. Details of a Section 106 to be established to enable the applicant to compensate for the residual impact incurred on the farmland bird species identified as being impacted by the proposals.

Impacts to the AONB - Objects to the negative impacts that the development will have on the landscape of the AONB and the enjoyment of the natural environment experience from the Ridgeway

Buckinghamshire Badger Group

Recommendations provided on a confidential basis. Conditions recommended.

Buckinghamshire Healthcare NHS Trust

The Council has now asked that the Trust's mitigation should go towards 'capital' rather than towards revenue. Whilst the Trust considers that the previous mitigation towards services was acceptable (also approved in the most recent appeal decision APP/P1805/W/20/3245111) the Trust is sympathetic to the request and has put forward a new mitigation calculation towards its three-year facilities programme.

The Trust has six key facilities projects that are directly related to increases in acute and community healthcare demand and the need for increased capacity arising from new population of these applications. The projects are the expansion of the Trust's Accident & Emergency Department at Stoke Mandeville Hospital, a new Paediatric A&E at Stoke Mandeville Hospital, building a new endoscopy suite at Stoke Mandeville & Wycombe, a new therapies unit at Stoke Mandeville, creating a new diagnostic and healthcare hub at Amersham Hospital, and expanding the Intensive Care Unit at Stoke Mandeville.

These projects have a total cost of £41m and the Trust has a funding gap of £13.5m which developer contributions will be required to mitigate. The contributions will be pooled towards the funding gap. The financial contribution expected from Hampden Fields development is £2,754,821

Buckinghamshire Healthcare NHS Trust

The development will put extra pressure on the Trust's ability to achieve the agreed surplus because each additional patient not part of the agreed contract will consume the available funding. In addition the development will put extra pressure on the Trust's ability to reach the required 52 week wait. NB. The risk of the Trust not achieving its PSF due to the development. The Trust has identified the following:-

A development of 3,000 dwellings and a 60 –bed care home, equates to 7,590 new residents. Using existing 2017/18 demographic data as detailed in the calculations in Appendix 2 will generate 10,345 acute interventions (excluding diagnostics and other healthcare interventions) over the period of 12 months and 9,036 community interventions. This comprises additional interventions by point of delivery for:

- 1,842 A&E based on 24.28% of the population requiring an attendance
- 86 Elective inpatient admissions based on 1.13% of the population requiring an admission 715 Day-case admissions based on 9.42% of the population requiring an admission
- 895 Emergency admissions based on 11.79% of the population requiring an admission
- 6,807 Outpatient admissions based on an average of 0.8969 admissions per head of population
- 9,036 Community episodes based on an average of 1.191 Community episodes per head of population. Diagnostic Imaging (Radiology and Pathology services) and other healthcare services (Breast and Cervical Screening, Cancer MDTs, Palliative care, MSK, Patient Transport, 10 Home Care Drugs, Community Midwifery) are based on average cost per head of population of providing these services.

Total admissions:

For the total acute admissions, representing 1.36 average acute admissions per population of the residents

For the total community episodes representing 1.19 average acute admissions per population of the residents

Formula:

Development Population x % Development Activity Rate per head of Population x Cost per Activity = Developer Contribution

As a consequence of the above and due to the payment mechanisms and constitutional and regulatory requirements the Trust is subject to, it is necessary that the developer contributes towards the cost of providing capacity for the Trust to maintain service delivery during the first year of occupation of each unit of the accommodation on/in the development. The Trust will not receive the full funding required to meet the healthcare demand due to the way contracts are negotiated based on previous year's performance and there is no mechanism for the Trust to recover these costs retrospectively in subsequent years as explained. Without securing such contributions, the Trust would be unable to support the proposals and would object to the application because of the direct and adverse impact of it on the delivery of health care in the Trust's area. Therefore, the contribution required for this proposed development of Insert figure dwellings is £5,699,703.00. This

contribution will be used directly to provide additional health care services to meet patient demand.

The contribution requested is based on these formulae/calculations, and by that means ensures that the request for the relevant landowner or developer to contribute towards the cost of health care provision is directly related to the development proposals and is fairly and reasonably related in scale and kind. Without the contribution being paid the development would not be acceptable in planning terms because the consequence would be inadequate healthcare services available to support it, also it would adversely impact on the delivery of healthcare not only for the development but for others in the Trust's area. Having considered the cost projections, and phasing of capacity delivery we require for this development it is necessary that the Trust receive 100% of the above figure prior to implementation of the planning permission for the development. This will help us to ensure that the required level of service provision is delivered in a timely manner. Failure to access this additional funding will put significant additional pressure on the current service capacity leading to patient risk and dissatisfaction with NHS services resulting in both detrimental clinical outcomes and patient safety.

BHT Summary

As our evidence demonstrates, the Trust is currently operating at full capacity in the provision of acute and planned healthcare. It is further demonstrated that although the Trust has plans to cater for the known population growth, it cannot plan for unanticipated additional growth in the short to medium term. The contribution is being sought not to support a government body but rather to enable that body to provide services needed by the occupants of the new development, and the funding for which, as outlined above, cannot be sourced from elsewhere. The development directly affects the ability to provide the health service required to those who live in the development and the community at large.

Without contributions to maintain the delivery of health care services at the required quality, constitutional and regulatory standards and to secure adequate health care for the locality, the proposed development will put too much strain on the said services, putting people at significant risk. Such an outcome is not sustainable. One of the three overarching objectives to be pursued in order to achieve sustainable development is to include b) a social objective – to support strong, vibrant and healthy communities ... by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being:" NPPF paragraph 8. There will be a dramatic reduction in safety and quality as the Trust will be forced to operate over available capacity, as the Trust is unable to refuse care to emergency patients. There will also be increased waiting times for planned care and patients will be at increased risk of multiple cancellations. This will be an unacceptable scenario for both the existing and new population. The contribution is necessary to maintain sustainable development. Further the contribution is carefully calculated based on specific evidence and fairly and reasonably related in scale and kind to the developments. Without the contribution the Trust considers that the development is not a sustainable development.

Canal and Rivers Trust

The development of this site is likely to create additional pressure on the towpath of the Aylesbury Arm of the Grand Union Canal. However following discussions with the County Council regarding other related improvements in the vicinity of the site it is not deemed appropriate to make a request in this instance.

Chilterns Conservation Board

Objection. The Chilterns Conservation Board objects to this application for a proposed major south eastern expansion of Aylesbury because of the:

- likely adverse impact on the setting of the AONB - in terms of views from and of the AONB
- the high adverse impact of the development on views from popular viewpoints in the AONB
the loss of a previously undeveloped and unallocated greenfield site
the loss of a strategic green gap between Aylesbury and Weston Turville
- prematurity to the local plan process which will allow the site to be judged against other potential sites further from the AONB and the cumulative impacts to be evaluated

Crime Prevention Design Advisor (Thames Valley Police) CPDA

No further comments to 2016 response.

Crime Prevention Design Advisor (Thames Valley Police) CPDA

No objection but raise comments to be taken into account at reserved matters stage

Ecology

Biodiversity Net Gain Calculation, Ecological Mitigation & Management Strategy and a Farmland Bird compensation scheme considered acceptable. Condition the need for a full Construction Environment Management Plan & Landscape and Ecological Management Plan and planning obligation will be required to secure the Section 106 agreement to compensate the impact of Farmland Birds.

Economic Development

ED welcomes the creation of 6.90ha of employment land (comprising of up to 29,200sq.m. of floorspace for B1c/B1/B2/B8 uses) as part of this mixed use scheme bringing forward a key Local Plan allocation in Aylesbury Garden Town. The site is in a sustainable location and can help meet continued demand for employment space in this strategic corridor to the east of Aylesbury to serve the growing town and aid economic recovery. This application is predicted to create up to 1000 new jobs which is a significant benefit to the local economy. The delivery of this site will contribute to the supply of commercial space and is likely to gain from the synergy from other nearby sites to create a new strong area for employment use for the town.

Education

If this application is approved, the Council would require the developer to make financial contributions (based on the indicative mix of homes provided), in accordance with the

policies set out in its “Guidance on Planning Obligations for Education Provision” for provision of the 2 primary schools, a financial contribution for additional secondary school provision and a financial contribution for the expansion of existing special schools. Commensurate contribution towards the provision of an off-site secondary school site should the need be identified at a specified later date.

Environment Agency

No objections subject to conditions.

Environmental Health (Noise)

With regard to noise impacts the significant effects identified in the original Environmental Statement remain substantially unchanged other than some increase in significance relating to impacts of traffic noise. Since the production of the original ES there have been a number of updates to relevant standards and guidance. It is recommended that if approved the application is subject to conditions in terms of Construction noise/vibration; Road Traffic Noise; Noise from proposed employment/industrial units/plant areas/mixed use local centre; local school developments.

Environmental Health (Air Quality)

The amended Air Quality assessment report that was received in April 2017 shows that there should be no significant effects on air quality arising from the construction of the development or arising from the completed development providing that the appropriate mitigation and enhancement measures detailed in the report are implemented. On this basis there are no objections to this development.

Environmental Health (Ground Contamination) – No objections

Heritage

The proposed development would result in low level impact to the setting of the heritage assets.

The harm identified is at the lower end of the less than substantial spectrum and should be balanced against the public benefits of the scheme in line with local and national policy.

Highways

The full and detailed assessments of the application both individually and cumulatively, have demonstrated that any adverse effects of the proposals can be appropriately mitigated through planning conditions and S106 obligations.

The position reached in 2017 remains the same, and therefore there is no objection subject to Conditions and S106 Obligations to be advised.

No Objections. Comments referred to in Evaluation [Full comments provided in Appendix F] including response to Hampden Fields Action Group.

Lead Local Flood Authority

The LLFA has no objection to the proposed development subject to the planning conditions

Landscape

Comments remain the same as previously expressed. Namely that the proposed scheme will result in significant adverse landscape and visual impacts as set out in the ES and appropriate negative weight should be given to these impacts in the planning balance.

National Trust – No response

National Grid – No response

Natural England

Objection. As submitted it will have a significant impact on the purposes of designation of the Chilterns AONB.

Natural England considers that the landscape impact of this development will be detrimental to the AONBs special qualities. This includes:

- The panoramic views from the chalk escarpment (1)
- The main ridge of the escarpment provides fine long views across the lower lying vales (2)
- The Ridgeway is elevated along the entire length of the Chilterns (11)

The proposal would significantly extend the built environment of Aylesbury south eastwards, giving the appearance of urban sprawl much closer to the Chilterns AONB than it currently extends. The development would be clearly visible from Coombe Hill, an important viewpoint along the Ridgeway National Trail, from which there would be glimpsed views for an extended stretch. Natural England's advice is that the presence of continued development across the valley would serve to urbanise the whole area compounding the impacts upon views of the AONB and National Trail.

Air Quality

Natural England notes that the updated Air Quality assessment provided in the Environmental Statement Addendum Chapters 8 and 10 dated November 2020 and Appendix 8.6 Addendum Information for HRA dated December 2020 is in line with guidance

Best and Most Versatile Agricultural Land or Minerals and Waste reclamation

It is recognised that a proportion of the agricultural land affected by the development will remain undeveloped (for example as habitat creation, landscaping, allotments and public open space etc.). In order to retain the long term potential of this land and to safeguard soil resources as part of the overall sustainability of the whole development, it is important that the soil is able to retain as many of its many important functions and services (ecosystems services) as possible through careful soil management. Consequently, we advise that if the development proceeds, the developer uses an appropriately experienced soil specialist to advise on, and supervise, soil handling, including identifying when soils are dry enough to be handled and how to make the best use of the different soils on site.

Protected Species We have not assessed this application and associated documents for impacts on protected species

NHS Aylesbury Vale Clinical Care Commissioning Group

CCG notes the 2017 resolution to grant and whilst the current position does not strictly align with the requirement of the CCG in respect of multiple smaller sites across the Aylesbury

area. The CCG are committed to work with all parties to provide CIL compliant evidence and work with the two developers to achieve the ambition in the longer term.

- Can development provide temporary healthcare facilities to support the development, in an existing facility (rather than a temporary porta-cabin on site?)
- Provision of permanent facilities should be delivered in accordance with CCG's principles
- Consider the implications of additional healthcare requirement for the elderly.

Sports and Leisure

Off-site sport/leisure contribution required in accordance with the Aylesbury Vale Ready Reckoner. Would like to see the provision of 2 full size FA standard 3rd generation floodlit synthetic football pitches (STP) located on-site on the S/W Recreation and Sports Area, together with appropriate pavilion/clubhouse and car parking spaces with adjacent open space/grass pitch providing space for potential future expansion.

Specific projects to assign the sport/leisure contribution towards have yet to be agreed but potential projects could include

- *Improvements to (adjacent) Bedgrove Park including but not limited to Bedgrove Brook watercourse improvements/enhancements including its de-culvert.*
- *Improvements to or New Bedgrove Community Centre*
- *Provision of sport/leisure facilities on the Woodlands site*

Thames Water

Wastewater - Following initial investigations, Thames Water has identified an inability of the existing FOUL WATER network infrastructure to accommodate the needs of this development proposal and as such Thames Water requested conditions be added to any planning permission

Surface Water – The application indicates that SURFACE WATER will NOT be discharged to the public network and as such Thames Water has no objection, however approval should be sought from the Lead Local Flood Authority. Should the applicant subsequently seek a connection to discharge surface water into the public network in the future then this would be considered as a material change to the proposal, which would require an amendment to the application at which point Thames Water would review their position.

Strategic water mains

- The proposed development is located within 5m of a strategic water main. Thames Water do NOT permit the building over or construction within 5m, of strategic water mains. No objections subject to conditions
- The proposed development is located within 15m of a strategic water main.- No objections subject to conditions

Existing water network - Following initial investigations, Thames Water has identified an inability of the existing water network infrastructure to accommodate the needs of this development proposal. Thames Water has recommended conditions to be attached.

On other matters relating to construction of buildings with 3m of water mains and development located within 15m of underground water assets, Thames water has

recommended an informative to be attached. Furthermore, a consortia led approach is advocated for so that cumulative detriment to the existing sewerage infrastructure can be avoided.

Trees

No protected trees will be affected. The site is not within a Conservation Area

APPENDIX E: General Representations

Amenity Societies/Residents Associations

Hampden Fields Action Group (HFAG) – representation were received to the consultation in 2017. The recent submissions (2021) are appended in full to this report (see appendix G) as previous comments are deemed superseded.

The Aylesbury Society 23.08.2017

Although the development is outside our area, the traffic implications for Aylesbury, particularly at the Walton Triangle, are considerable. Agrees with the detailed traffic analysis by TPP for the action group.

Wendover Society 07.01.2021

The Wendover Society has a number of concerns relating to this development.

Preservation of a rural community

Impact on the surrounding village communities and on Wendover in particular.

Urban sprawl - the built environment is coming dangerously close to the Chilterns AONB and the green belt which separate Wendover from other communities and help it retain its individual identity. The Garden Town Plan highlights the need for green spaces and we need to preserve the natural environment separating Aylesbury, Weston Turville and Aston Clinton.

Highways and traffic

Increase in traffic and congestions - road network already exceptionally busy and are likely to be more so with the construction of HS2 and the development of businesses such as Enterprise skip hire near Marroway.

Increase in traffic noise and it is not clear that appropriate mitigating action is planned to protect people living and working in the area.

The Wendover Neighbourhood Plan

Not in accordance with the Wendover Neighbourhood Plan, which emphasises the need for a fair proportion of affordable housing for older and younger people on low incomes; it is important to discourage the younger generation from moving away from the area.

Wendover residents wish Wendover to remain a discrete community with a clear boundary round the built-up area of Wendover.

The Chiltern AONB

The most recent Chilterns AONB Management Plan 2019 should be carefully considered to ensure that any planning decision puts the conservation and enhancement of the AONB first. It is not clear that this is the case in the proposed plan.

The development will be a blot on the landscape as it will be seen in the panoramic views from local well-loved viewpoints such as Coombe Hill and the Ridgeway.

Flood risk

The development is on a flood plain and there appears to be insufficient provision for draining surface water flooding to the water course.

Water and power

There are also concerns about utility supply, especially water and power in an area which has already experienced problems in these services.

Other Representations

A total of 5457 responses (email, letter or named in petition) have been received. Of these 5455 raise objections, 5 are in support and 2 neutral comments. A summary of the main objections are listed below:

1. Coalescence of Aylesbury and surrounding villages.
2. Destruction of character and identity in villages surrounding Aylesbury.
3. Urban sprawl
4. Garden Town principles – lack of adherence to the garden town principles
5. Loss of open countryside
 - intrinsic value and value attributed by residents through their use and enjoyment. Space currently used regularly by hikers, dog walkers and more casual walks. The leisure and amenity it provides will be lost forever.
6. Loss of High Grade Agricultural Farmland
7. Impact on wildlife diversity
 - Irreversible unacceptable biodiversity offsetting will result.
 - impact on numerous protected species, causing serious harm to their wellbeing, habitat and capacity to breed.
8. Transport
 - Traffic Modelling
 - a. Traffic flow models are flawed and grossly understated
 - b. Timing of the traffic flow should be between 8am and 9am
 - The Southern Link Road – the four lane road will be the busiest and will cut off parts of the development
 - The infrastructure planned is inadequate as all traffic would merge either in direction of the A41/Tring Road or Wendover Road which is heavily congested.
 - Too much traffic
 - Roads are busy already
 - Roads can't cope with more cars, will result in gridlock Increased traffic will further worsen the air pollution
 - Rat running - Busier roads mean people will try to cut through quieter areas, disturbing residential amenity.
9. Highways safety concerns
 - Lighting, street surveillance, active frontages and defensible space.
10. Quality of Homes
 - Inadequate choice of quality homes.
11. No commitment to building affordable housing.
12. Impact on Existing Services / Infrastructure
 - Stoke Mandeville hospital, train network, GP surgeries and the existing schools
13. Lack of provision of services/ facilities
 - lack of secondary school, GP surgery, postmen, doctors
 - Thames water upgrade required t wastewater, sewage works and water works.
14. Environmental issues & Residential Amenity
 - noise pollution
 - air quality – traffic density worse in and around Aylesbury than it was in 2015 and.

Stagnant traffic during rush hours affects air quality.

- vibration.
- Lack of regard to residents wellbeing and lifestyle
- Loss of village community

15. Flooding

- Building on floodplain poses a significant risk of flooding
- Flooding will have impact on the site and surrounding landscape
- proposal will only make flooding worse, making many homes in the surrounding villages more vulnerable
- Building on green belts carries significant risks for both developers and house owners
- Drainage – Greenfield runoff rates must be recalculated
- Flood risk to Weston Turville from additional surface water generated. No planned approach with utility companies.

16. Sustainability

- Does not promote sustainable transport, results in the total destruction of the identity and character of surrounding villages, has minimal regard for natural conservation and makes no effort to ensure a wide choice of high quality homes.

17. Prematurity

- VALP has not been approved and is at examination stage. The findings of VALP should not be anticipated due to significant objections on traffic and transport matters.

18. Volume of community objections - level of objections to the proposal should be considered.

19. Insufficient time and poor timing considering amount of information and size and sensitivity of the site location.

20. Council has lost sense of objectivity in an attempt to get own road schemes (Woodlands and the South East Aylesbury Link Road) through.

APPENDIX F: Highways Comment



Directorate for Planning Growth & Sustainability
Buckinghamshire Council,
Walton Street Offices,
Walton Street,
Aylesbury
HP20 1UA

highwaysdm.av@buckinghamshire.gov.uk
01296 382416
www.buckinghamshire.gov.uk

Development Management
(Aylesbury Area)
Planning, Growth & Sustainability
Buckinghamshire Council

8th January 2021

F.A.O. Helen Fadipe

Dear Helen

Application Number: 16/00424/AOP
Proposal: Outline planning application (with all matters reserved) for a mixed-use sustainable urban extension comprising: up to 3,000 dwellings and a 60 bed care home/extra care facility (Use Class C2/C3); provision of land for a Park and Ride site; a total of 6.90ha of employment land (comprising of up to 29,200 sq.m. B1c/B1/B2/B8 uses); provision of two primary schools (one 2 form entry and one 3 form entry); a mixed use local centre (3.75ha) with provision for a foodstore of up to 1,200 square metres (GFA), further retail (including a pharmacy), restaurant and café units, a doctor's surgery, gym, public house with letting rooms, professional services, multi-functional community space and a day nursery, and live work units; multi-functional green infrastructure (totalling 108.43ha) including parkland, sports pitches, sports pavilions, children's play areas, mixed use games areas, including a skate park/BMX facility, informal open space, allotments, community orchards, landscaping; extensions to domestic gardens at Tamarisk Way (0.22ha); strategic flood defences and surface water attenuation; vehicular access points from New Road, Marroway, A413 Wendover Road and A41 Aston Clinton Road; a dualled Southern Link Road between A413 Wendover Road and A41 Aston Clinton Road and a strategic link road between the Southern Link Road and Marroway; internal roads, streets, lanes, squares, footpaths and cycleways and upgrades to Public Rights Of Ways (PRoWs); and car parking related to the above land uses, buildings and facilities.

Location: Land Between Wendover Road and Aston Clinton Road, Weston Turville

Thank you for your consultation dated 4th December 2020 with regard to the above planning application.

You will be aware that the Highway Authority has previously provided comments regarding this application, which were dated 31st May 2016, 24th May 2017, 7th June 2017 and 13th October 2017. The final comments on the proposal at that time concluded that the impact of the proposed development could be appropriately mitigated through planning Conditions and S106 Obligations.

The planning application was previously considered by the former Aylesbury Vale District Council Planning Committee on 25th October 2017 and a resolution to grant planning consent subject to the completion of a S106 agreement was passed.

Strategic Model Update

Since the resolution to grant planning consent, the Buckinghamshire Council; Aylesbury Transport Model (ATM) has been updated. The Aylesbury Transport Model is derived as a cordon model of the Countywide model for Buckinghamshire maintained by Jacobs on behalf of Buckinghamshire Council (BC). The Aylesbury Transport Model has been updated primarily to support a full business case that has been submitted to the DfT for the South East Aylesbury Link Road (SEALR), but with a secondary purpose of supporting other business cases in the area (if required in the future) and also for use in Development Management. DfT require a model developed in line with Transport Analysis Guidance (TAG) to a high degree of rigour in order to consider a full business case. As has been stated previously the level of rigour expected in a full business case exceeds that required for the assessment of planning applications. Whilst updating the model the opportunity has also been taken to extend the model coverage area further southeast to cover Wendover and Halton. This allows Local Plan allocation sites such as RAF Halton to be considered in detail using the updated model data if and when a planning application is developed in the future.

The model has been built to represent traffic conditions in the base year 2017 and utilises traffic counts and Automatic Number Plate Recognition (ANPR) surveys and journey time data collected using Traffic master for assignment calibration and validation. Two types of trip matrices were created: Observed, based on the Trip Information System (TIS) Mobile Phone Data procured through Telefonica; and Synthetic, using demographic data to synthesise likely movements through the study area. The two matrices were combined to provide the set of origin-destination movements to use in the model; the mobile phone data comprised the majority of the final matrices, but with synthetic matrices used to represent short-distance trips which tend to be under-represented in mobile data. Modelled flows and journey times were compared against independent data and data used as part of the model building process. In validating the model it was found that journey times exceeded the confidence criteria set out in guidance, and in the majority of time periods model derived traffic flows met or exceeded the confidence criteria set out in TAG.

The model therefore performs well against relevant standards and this provides confidence and reassurance that the model is representative of current conditions.

The updated Aylesbury Transport Model (ATM) is a VISUM based highway model that includes weekday AM Peak, inter-peak and PM Peak period data. The Future Forecast Year is 2036 and a variety of other forecast scenarios have been developed to account for committed developments and infrastructure coming forward in the Aylesbury area and to account for the growth outlined within the emerging Vale of Aylesbury Local Plan (VALP). Full details of the updated model preparation and validation can be found in the Local Model Validation Report (LMVR) and Forecasting Report both of which are available using the following link;

<https://www.buckscc.gov.uk/services/transport-and-roads/transport-modelling/checking-the-transport-model-is-fit-for-purpose/>

Buckinghamshire Council is now requiring all major applications which do not yet have planning consent to utilise this new model to assess their impacts. Whilst this application did receive a resolution to grant consent in October 2017, formal planning consent was not issued. As such it is necessary for the transport modelling and impact evidence base that supported the application to be updated.

As a result, the applicant has submitted a Transport Assessment Addendum (TAA) dated 30th November 2020. The TAA has utilised the new model data to update the previous traffic impact assessments. No other highway related changes to the application are understood to have been made since the resolution to grant was passed in October 2017 other than those discussed in the TAA, and therefore all other highway and transport aspects of the proposed development remain the same as previously agreed in 2017.

The comments hereon-in consider the additional information provided by the applicant and should be read in conjunction with the previous consultation responses issued in 2017.

Traffic Impact Assessment

Given the relationship of the Hampden Fields development with the Aylesbury Woodlands development (planning application no. 16/01040/AOP), as part of the updated submissions both the Hampden Fields and Woodlands developers have commissioned and undertaken a comprehensive assessment of the both the standalone and cumulative impacts of the development proposals on the operation of the highway network. The forecast year for the updated assessments is 2036 and includes background traffic growth and other committed developments in the town.

The following model scenarios have been considered in the updated assessments for Hampden Fields:

- 2017 Baseline;
- 2036 Do Minimum (Future Baseline + Eastern Link Road (ELR) North + Stoke Mandeville Relief Road (SMRR));
- 2036 Do Something 'stand-alone' (2036 Do Minimum + Proposed Hampden Fields Development, including Southern Link Road (SLR));
- 2036 Do Cumulative 1 (2036 Do Something + Aylesbury Woodlands including Eastern Link Road (ELR) South + South East Aylesbury Link Road (SEALR));
- 2036 Do Cumulative 2 (2036 Do Cumulative 1 + All live planning applications, including South West Link Road); and
- 2036 Do Cumulative 3 (2036 Do Cumulative 2 + Other VALP sites).

The assessments were undertaken on a sifting basis using the outputs from the strategic traffic model for Aylesbury to identify likely areas and traffic flow scenarios where the proposals would individually or cumulatively have a material impact. On the basis of this information more detailed assessments of the operation of a total of 56 junctions across the town needed have taken place.

The following section discusses each of the junctions assessed and the results of the relevant assessments concluding whether they are acceptable or not to the highway authority. Where mitigation measures are required, they are identified and it is explained how they assist in offsetting the material impacts of the individual and cumulative development proposals. All mitigation measures are expected to be fully funded by the developments and subject to a S106 requirement for a Joint Delivery Strategy which will set out which developer will implement the scheme and when it will be implemented.

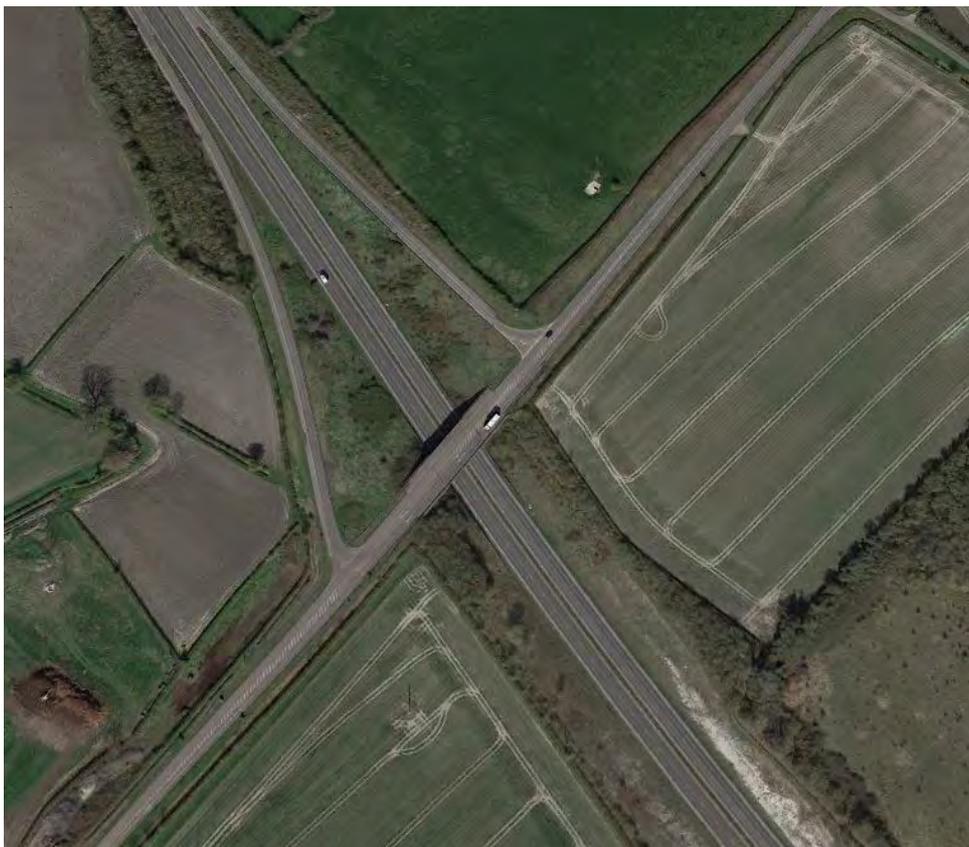
Junction 1 - A41 / Tring Hill / Aylesbury Road / B4009

This junction is a grade-separated dumbbell roundabout arrangement. Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The assessments show that both the eastern and western roundabout junction operation is acceptable with standalone and cumulative development.

Junction 2 - A41 / Lower Icknield Way



The A41/Lower Icknield Way junction takes the form of grade-separated priority junctions with Junction 1 the slip road off the A41 dual carriageway and Junction 2 the slip road onto the A41 dual carriageway.

The junctions have been modelled with the Picady junction modelling programme. The geometry and data entry have been checked and are correct.

Assessments of the impact at these junctions were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The output files attached in the TAA appendix do not match Table 4.3. However, output files previously provided and checked match with Table 4.3 in the TAA.

The output files attached in the TAA appendix show slightly different results compared to Table 4.3, as they are the result of a different model run. However, the discrepancies are minimal with differences in overall junction delay of less than 1 second. It should also be noted that output files previously provided and checked match exactly with Table 4.3 in the TAA.

Table 4.3 shows that the Hampden Fields development has little impact with no increase in queue length in the 2036 Do something and Do Cumulative 1 and 2 scenarios and junction delays of less than 4 seconds.

Table 4.3 – Junction 2 – A41 / Lower Icknield Way - Existing Configuration

Approach	AM		PM	
	Queue (Veh)	Delay (S)	Queue (Veh)	Delay (S)
2036 Do Minimum				
J2a - A (A41 Overbridge)	0	0	0	0
J2a - B (A41 Off-slip)	1	10	1	11
J2a - C (Lower Icknield Way East)	0	0	0	0
Junction Delay (s)	1.15		2.81	
J2b - A (Lower Icknield Way West)	0	0	0	0
J2b - B (A41 On-slip)	0	0	0	0
J2b - C (A41 Overbridge)	1	2	0	2
Junction Delay (s)	1.24		0.74	
2036 Do Something (HF)				
J2a - A (A41 Overbridge)	0	0	0	0
J2a - B (A41 Off-slip)	1	9	1	12
J2a - C (Lower Icknield Way East)	0	0	0	0
Junction Delay (s)	1.23		3.37	
J2b - A (Lower Icknield Way West)	0	0	0	0
J2b - B (A41 On-slip)	0	0	0	0
J2b - C (A41 Overbridge)	1	3	0	2
Junction Delay (s)	1.66		1.02	
2036 Do Cumulative 1 (HF + AW)				
J2a - A (A41 Overbridge)	0	0	0	0
J2a - B (A41 Off-slip)	1	9	1	12
J2a - C (Lower Icknield Way East)	0	0	0	0
Junction Delay (s)	1.71		3.99	
J2b - A (Lower Icknield Way West)	0	0	0	0
J2b - B (A41 On-slip)	0	0	0	0
J2b - C (A41 Overbridge)	1	3	0	3
Junction Delay (s)	1.77		1.21	
2036 Do Cumulative 2 (Reg 22)				
J2a - A (A41 Overbridge)	0	0	0	0
J2a - B (A41 Off-slip)	1	10	1	13
J2a - C (Lower Icknield Way East)	0	0	0	0
Junction Delay (s)	1.87		3.90	
J2b - A (Lower Icknield Way West)	0	0	0	0
J2b - B (A41 On-slip)	0	0	0	0
J2b - C (A41 Overbridge)	1	3	1	3
Junction Delay (s)	1.95		1.23	

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development. The results are acceptable to the Highway Authority.

Junction 8 - London Road/Weston Road/Aylesbury Road Roundabout

This junction takes the form of a mini roundabout. The junction has been modelled with the Arcady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The junction operates with a significant amount of spare capacity. No works are therefore proposed as the operation is acceptable with cumulative development.

Junction 9 - A41 Woodlands Roundabout

The existing Woodlands roundabout is a 3 arm roundabout connecting the A41 Aston Clinton Bypass with the A41 Aston Clinton Road which connect to the centre of Aylesbury and a more minor Aylesbury Road leading to Aston Clinton.



The roundabout currently experiences issues with capacity and delay and the 2036 Do Minimum assessments of the junction continue to show congestion as shown in the following table.

Table 4.5 – Junction 9 – Woodlands Roundabout – Existing Configuration

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum						
A – Aston Clinton Road	76	127	1.07	2	6	0.70
B – A41	264	1008	1.41	1444	5073	2.44
C – Aylesbury Road	1	9	0.52	0	6	0.30
Junction Delay (s)		427.86			2974.62	

Two options are proposed for this junction as part of the Hampden Fields development. The first option is a four arm signal controlled roundabout with a fourth arm serving the Hampden Fields development to the south, shown on drawing WSP|PB 1769/SK/027 Rev C, an extract of which is below. This junction utilises the land available within the Hampden Fields site and the public highway without needing to rely on land within the Woodlands site, in the event that site doesn't gain planning consent.

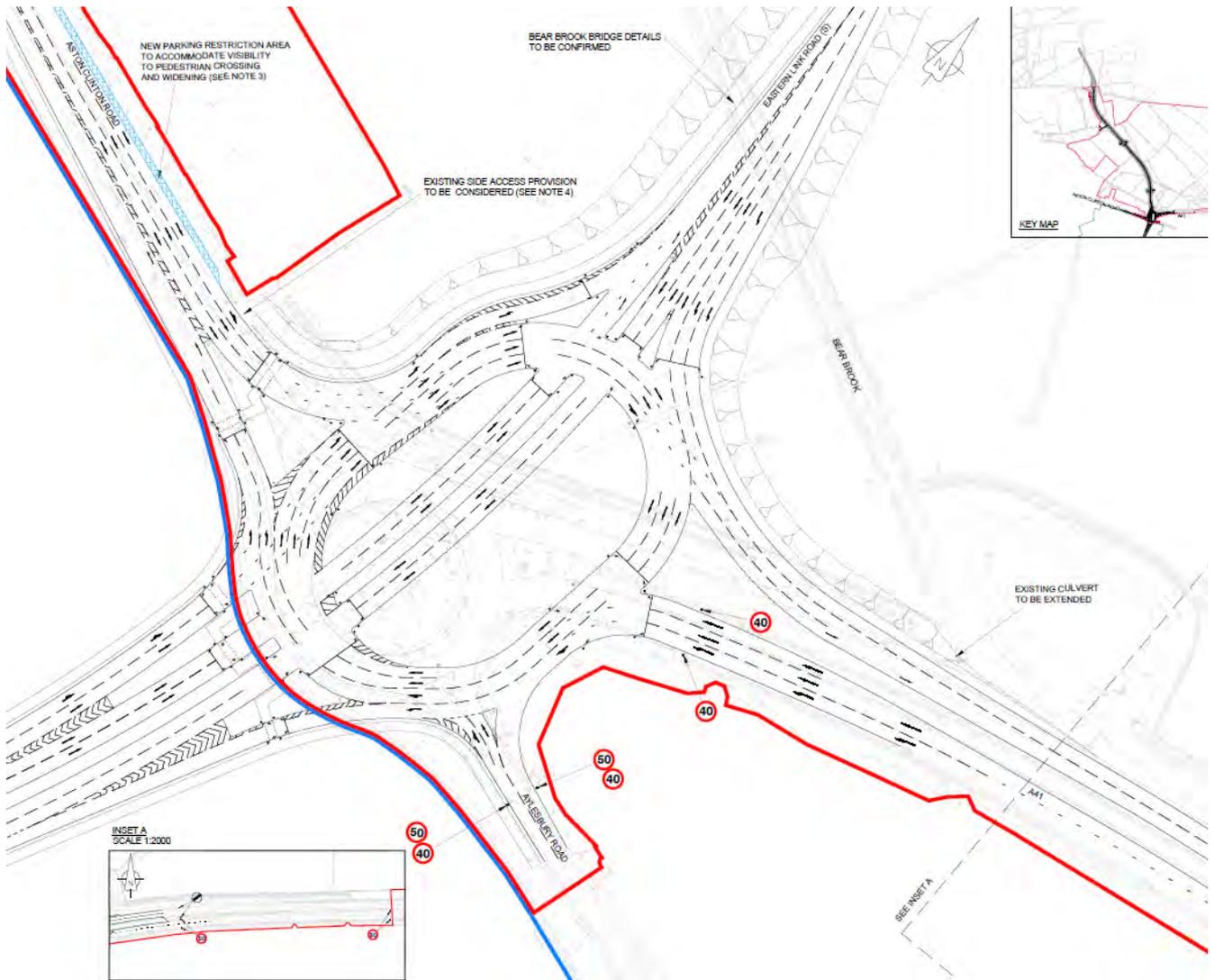


The results of the first option (HF only) are summarised in the table below, and show that whilst the junction continues to operate over capacity, the level of maximum DoS and queuing will be improved when compared to Do Minimum.

Table 4.6 – Junction 9 – Woodlands Roundabout – Proposed Configuration (HF Only)

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 Do Something (HF)					
1/2 + 1/1	A41 Aston Clinton Road West Entry Ahead	58.0: 58.1	4	108.6	62
1/3	A41 Aston Clinton Road West Entry Ahead	70.5	8	196.6	285
2/1	A41 West Int. Right	5.6	0	3.5	0
2/2	A41 West Int. Right	20.9	1	24.3	2
4/1	A41 Aston Clinton Bypass Entry Ahead Left	78.8	9	39.9	3
4/2	A41 Aston Clinton Bypass Entry Ahead	78.8	9	39.8	3
5/1	A41 Bypass Int. Ahead	2.1	0	4.6	0
5/2	A41 Bypass Int. Right	132.1	70	175.0	127
8/1	Aylesbury Road Entry Ahead Left	52.2	2	26.0	0
8/1	SLR NB Ahead Left	93.3	11	74.2	4
8/2	SLR NB Ahead	9.4	0	17.7	0
PRC		-46.8%		-118.5 %	
Cycle Time		40 s		50 s	

The second option to deal with cumulative impacts is a 4 arm signalised roundabout as shown on Jacobs Drawing B12798C7-0000-D-0048 rev1, an extract of which is below. It should be noted that this junction arrangement relies on land within the Woodlands site.



It is the intention of the applicant to seek cooperation with the Woodlands development to ensure, if possible, that a junction arrangement on the footprint of the final cumulative scheme can be implemented even in the event that Woodlands doesn't achieve consent. However, as a fall back and to ensure that the Hampden Fields development operates without reliance on Woodlands then the junction design, as shown on Drawing 027 Rev C has to remain an option.

Jacobs have updated the junction capacity tests using the forecast traffic flows from the 2020 Aylesbury Traffic Model. The results of the assessment have been provided in Appendix H of the TAA, and show that the junction would operate better in all 2036 Do Cumulative scenarios when compared to the existing roundabout configuration in the 2036 Do Minimum scenario. In cumulative 3 with all of the VALP sites and infrastructure the proposed roundabout's degree of saturation and mean maximum lengths are predicted to operate as follows;

2036 Do Cumulative 3				
ELR North	56%	10	100%	30
A41 East	77%	12	101%	54
Aylesbury Road Southeast	18%	0	15%	0
SLR South	75%	9	88%	12
A41 West	84%	9	34%	5
Northbound cut-through	52%	7	81%	11
Southbound cut-through	51%	1	80%	8
Circulatory at ELR North	59%	5	40%	8
Circulatory at A41 West	60%	6	50%	5
Circulatory at SLR South	43%	3	44%	4
Circulatory at A41 East	42%	7	62%	6
Exit Crossing A41 West	32%	1	37%	2
Exit Crossing SLR South	75%	4	84%	3
Total Delay (PCU/hr)		57.3		103.9
Cycle Time (s)		60		88

Both options will need to be secured as part of a S106 Agreement in the event that planning permission is granted. It remains the Council's position that it will seek cooperation of both applicants to implement a scheme that is consistent with a junction footprint that can be easily amended to accommodate both developments, whilst minimising disruption to the travelling public.

Junction 10 - College Road North / Woodlands/ Arla Access Roundabout

This new junction is a proposed 4-arm roundabout which will form an access to the Aylesbury Woodlands development. The junction has been modelled with the Arcady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

The junction is forecast to operate within capacity in all three Do Cumulative scenarios. No works to this junction are proposed as the operation is acceptable with cumulative development.

Junction 13 - Eastern Link Road (ELR) / Stocklake Link East

This junction takes the form of a 4 arm roundabout. The junction has been modelled with the Arcady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 14 – Eastern Link Road (N) / Village 4 Roundabout

The ELR N/Site Road Village 4 junction is a consented 4-arm roundabout junction which forms part of the new Eastern Link Road (North), which the Kingsbrook development is facilitating. The junction has been modelled with Arcady and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

The junction is forecast to operate within capacity in all three Do Cumulative scenarios. No works to this junction are proposed as the operation is acceptable with cumulative development.

Junction 15 - ELR (North) / A418

This junction takes the form of a 3 arm signalised junction. The junction has been modelled with the LinSig modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 16 – A418 / Burcott Lane / Brick Kiln Lane

This junction is a priority crossroad junction with Brick Kiln Lane a small cul de sac. The junction has been modelled with the Picady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The junction is forecast to operate within capacity in the Do Cumulative 1 and 2 scenarios. No works to this junction are proposed as the operation is acceptable with cumulative development.

Junction 19 – Bellingham Way / Burcott Lane

This junction takes the form of a priority junction. The junction has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 20a – Bellingham Way / Southern Site Access

The Bellingham Way / Southern Site access junction is a 3-arm priority junction providing access into the Kingsbrook development. The junction has been modelled with the Picady junction programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The results show that this junction operates within capacity. No works to this junction are therefore proposed as the operation is acceptable with cumulative development.

Junction 20b – Bellingham Way / Northern Site Access

The Bellingham Way / Northern Site access junction is a 3-arm priority junction providing access into the Kingsbrook development. The junction has been modelled with Picady and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

This junction operates with spare capacity in both Do Cumulative scenarios. No works to this junction are therefore proposed as the operation is acceptable with cumulative development.

Junction 21 - Bellingham Way / Broughton Lane / Stocklake

This junction takes the form of a priority junction. The junction has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with cumulative development.

Junction 22 – A41 / Broughton Lane/Bedgrove



The A41 / Broughton Lane / Bedgrove junction includes 2 linked signalised junctions, forming a staggered road arrangement. It is a problematic junction on the network, and this is in part due to the number of side roads competing for green time at the existing signals.

The junction has been modelled as a linked junction in the Linsig modelling programme. Geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.16 summarises how the existing junction will operate under 2036 Do Minimum, 2036 Do Something (Hampden Fields only), 2036 Do Cumulative 1 and 2036 Do Cumulative 2 traffic conditions. It shows that in the 2036 Do Minimum Scenario, the junction is expected to operate significantly over theoretical capacity in the AM peak period, with mean maximum queues of 146 vehicles on the A41 westbound and 100 vehicles on the A41 Eastbound. In the PM peak period, the junction will also exceed capacity with mean maximum queues of 39 vehicles on the A41 westbound.

The 2036 Do Something scenario will worsen the situation slightly in the AM peak hour with the longest mean maximum queue now 154 vehicles but shows an improvement in the PM period as the junction will now operate just above theoretical capacity.

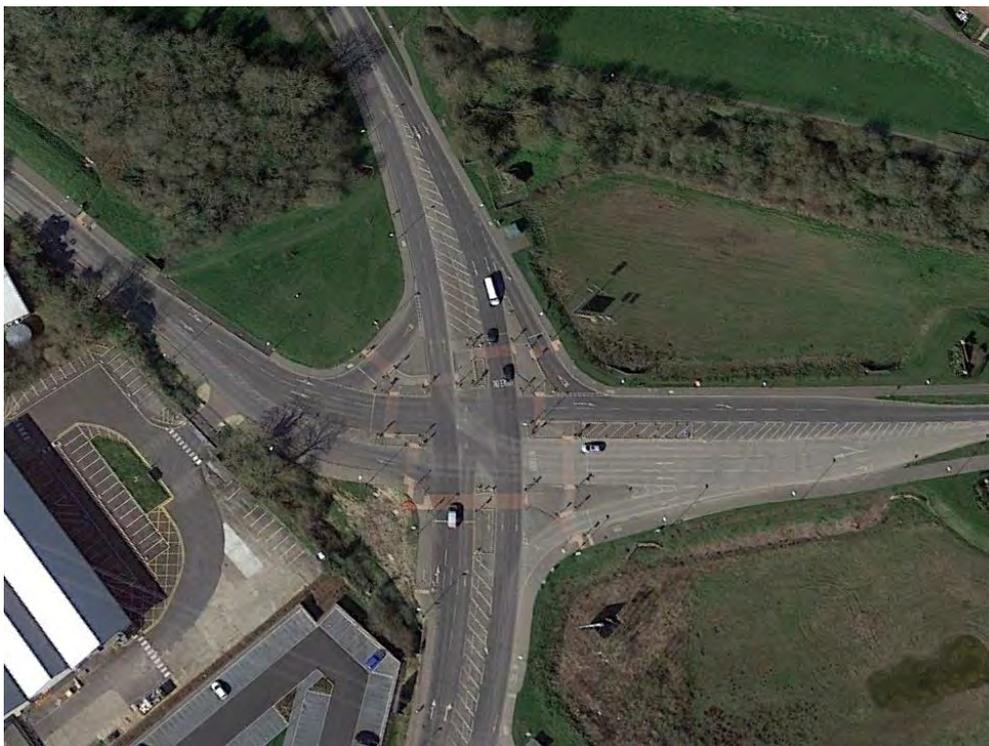
Table 4.16 shows that under the two 2036 Do Cumulative scenarios, there is slight improvement in the AM peak period, with the longest mean maximum queue now 92 vehicles. However, there is a deterioration of performance in the PM peak period when compared with the 2036 Do Minimum results, with the A41 westbound showing a mean maximum queue increase of 21 vehicles from 39 to 60 vehicles. The junction is expected to operate significantly above theoretical capacity in both 2036 Do Cumulative scenarios.

Table 4.17 – Junction 22 – A41 / Broughton Lane / Bedgrove - Proposed Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 Do Something (HF)					
1/1	A41 WB (Internal) Left Ahead	61.5	14	78.6	15
1/2	A41 WB (Internal) Ahead	64.1	17	72.2	13
2/2+2/1	Bedgrove Entry Right Left	84.8:84.8	13	63.9:73.6	5
3/1	A41 EB Entry Ahead	69.0	18	37.2	7
3/2+3/3A41	EB Entry Right Ahead	69.9:0.0	20	38.2:38.2	7
6/1	A41 WB Entry Ahead	35.7	7	60.7	15
6/2+6/3A41	WB Entry Ahead Right	51.5:51.5	9	75.2:75.2	21
7/1	A41 EB (Internal) Left Ahead	88.3	32	58.3	17
7/2	A41 EB (Internal) Ahead	89.0	35	59.5	19
8/2+8/1	Broughton Lane Entry Right Left	88.9:88.9	16	77.9:77.9	13
PRC (%)		1.1		14.4	
Cycle Time (s)		118		120	
2036 Do Cumulative 1 (HF+AW)					
1/1	A41 WB (Internal) Left Ahead	71.7	18	60.2	11
1/2	A41 WB (Internal) Ahead	59.5	15	52.2	8
2/2+2/1	Bedgrove Entry Right Left	72.2:72.2	9	55.5:55.5	6
3/1	A41 EB Entry Ahead	49.8	11	42.4	9
3/2+3/3A41	EB Entry Right Ahead	50.9:50.9	12	38.2:38.2	8
6/1	A41 WB Entry Ahead	33.5	6	32.3	6
6/2+6/3A41	WB Entry Ahead Right	50.0:50.0	8	58.4:58.4	9
7/1	A41 EB (Internal) Left Ahead	60.0	16	63.0	17
7/2	A41 EB (Internal) Ahead	69.6	24	63.5	16
8/2+8/1	Broughton Lane Entry Right Left	70.1:70.1	10	62.8:62.8	10
PRC (%)		24.7		41.7	
Cycle Time (s)		120		120	
2036 Do Cumulative 2 (Reg 22)					
1/1	A41 WB (Internal) Left Ahead	69.0	16	55.6	10
1/2	A41 WB (Internal) Ahead	71.7	18	47.8	9
2/2+2/1	Bedgrove Entry Right Left	71.3:71.3	10	62.7:62.7	7
3/1	A41 EB Entry Ahead	57.8	14	37.6	8
3/2+3/3A41	EB Entry Right Ahead	47.3:47.3	11	34.9:34.9	7
6/1	A41 WB Entry Ahead	28.2	5	31.8	6
6/2+6/3A41	WB Entry Ahead Right	53.9:53.9	9	58.5:58.5	9
7/1	A41 EB (Internal) Left Ahead	64.6	20	61.3	16
7/2	A41 EB (Internal) Ahead	63.2	23	62.2	15
8/2+8/1	Broughton Lane Entry Right Left	67.7:67.7	9	63.2:63.2	10
PRC (%)		25.5		42.3	
Cycle Time (s)		120		120	

It can therefore be concluded that the junction is acceptable with the standalone and cumulative development and the proposed mitigated junction arrangement.

Junction 23 - Bellingham Way / A4157 / Stocklake



This is a 4 arm traffic signalised crossroads. The configuration of the right turn lane facility from the A4157 Douglas Road northern arm into Stocklake urban is currently being considered following completion of a Stage 3 Road Safety Audit (RSA3) prepared in connection with the Kingsbrook development. At present this lane is hatched out with white paint and with bollards, pending satisfactory resolution of the matters raised by the RSA3. It has therefore been agreed that for the purposes of undertaking further assessments of the junction using LinSig, this right turn lane is removed from the model, to reflect the current arrangement.

It is noted that the LinSig model does not include the pedestrian crossing on the Stocklake left turn movement. However, having reviewed the staging diagram it would be possible for this crossing to run during Phase 4. This would have minimal impact on the operation of the junction, as it would not require any additional time to run.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The results, extracted below, show that the junction would operate over capacity in the PM peak in the 2036 Do Minimum scenario. The operation of the junction worsens in the 2036 Do Cumulative 1 scenario in the PM peak, however the 2036 Do Cumulative 2 scenario is similar to Do Minimum. In the AM peak hour the operation of the junction improves in both the 2036 Do Cumulative scenarios.

Table 4.18 – Junction 23 – Bellingham Way / A4157 / Stocklake – Existing Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 Do Minimum					
1/2+1/1	SLR Left Ahead	60.3%	5	48.4%	4
1/3+1/4	SLR Ahead Right	52.9%	6	38.4%	4
2/2+2/1	A4157 Oakfield Road (S) Left Ahead	54.3%	9	93.8%	36
2/3	A4157 Oakfield Road (S) Right	84.1%	15	77.2%	15
3/2+3/1	Stocklake Ahead Left	56.4%	4	94.2%	16
3/3	Stocklake Right	34.3%	2	71.9%	8
7/2+7/1	A4157 Douglas Road (N) Left Ahead	82.8%	14	46.0%	4
7/3+7/4	A4157 Douglas Road (N) Ahead Right	80.8%	15	28.0%	6
PRC (%)		7.0%		-4.7%	
Cycle Time (s)		104		120	
2036 Do Something (HF)					
1/2+1/1	SLR Left Ahead	65.4%	6	46.4%	4
1/3+1/4	SLR Ahead Right	58.5%	7	38.8%	4
2/2+2/1	A4157 Oakfield Road (S) Left Ahead	55.4%	9	89.8%	31
2/3	A4157 Oakfield Road (S) Right	83.3%	15	70.9%	12
3/2+3/1	Stocklake Ahead Left	62.3%	5	90.7%	14
3/3	Stocklake Right	34.7%	2	71.9%	9
7/2+7/1	A4157 Douglas Road (N) Left Ahead	81.9%	14	46.6%	5
7/3+7/4	A4157 Douglas Road (N) Ahead Right	79.4%	15	29.9%	6
PRC (%)		8.0%		-0.8%	
Cycle Time (s)		104		120	
2036 Do Cumulative 1 (HF+AW)					
1/2+1/1	SLR Left Ahead	70.7%	9	81.4%	11
1/3+1/4	SLR Ahead Right	72.8%	10	85.1%	12
2/2+2/1	A4157 Oakfield Road (S) Left Ahead	69.6%	14	103.5%	61
2/3	A4157 Oakfield Road (S) Right	73.5%	10	48.9%	7
3/2+3/1	Stocklake Ahead Left	72.4%	7	104.7%	40
3/3	Stocklake Right	21.9%	2	60.3%	8
7/2+7/1	A4157 Douglas Road (N) Left Ahead	72.6%	8	58.6%	4
7/3+7/4	A4157 Douglas Road (N) Ahead Right	49.3%	9	31.2%	6
PRC (%)		22.4%		-16.3%	
Cycle Time (s)		104		120	
2036 Do Cumulative 2 (Reg 22)					
1/2+1/1	SLR Left Ahead	71.7%	9	83.1%	12
1/3+1/4	SLR Ahead Right	73.3%	10	86.3%	12
2/2+2/1	A4157 Oakfield Road (S) Left Ahead	66.8%	13	94.4%	35
2/3	A4157 Oakfield Road (S) Right	72.5%	11	50.3%	7
3/2+3/1	Stocklake Ahead Left	69.2%	7	94.0%	18
3/3	Stocklake Right	16.3%	1	58.6%	7
7/2+7/1	A4157 Douglas Road (N) Left Ahead	73.1%	7	56.9%	4
7/3+7/4	A4157 Douglas Road (N) Ahead Right	49.0%	8	29.7%	6
PRC (%)		22.7%		-4.9%	
Cycle Time (s)		104		120	

Whilst the operation of the junction worsens in the 2036 Do Cumulative 1 scenario, it is recognised that this scenario is primarily to allow a direct comparison against the 2016 TA cumulative assessments but would be unlikely to exist in reality. Effectively that scenario has been replaced by the 2036 Do Cumulative 2 scenario which takes into account all live planning applications. This shows that Cumulative 2, when compared to the Do Minimum, does not show a significant impact and as such the Highway Authority can be satisfied that the operation of the junction is acceptable with standalone and cumulative development without the need for any mitigation scheme.

Junction 24 – A4157 Elmhurst Road / A418 Bierton Road



This junction is a 4 arm roundabout and has been modelled in Arcady in the 2036 Do Cumulative 1 and 2036 Do Cumulative 2 Scenarios. The flows have been checked and are correct. The geometry is also largely correct although, as we have pointed out previously, the inscribed circle diameter (ICD) is 63m at the entry points rather than 51-54m which is the narrowest part of the junction. This will not affect the results as a lower ICD will provide less capacity and therefore creates a robust result.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.19 shows that this junction will operate within capacity with minor queues. The operation of the junction will improve with the cumulative scenarios due to the introduction of the orbital route.

Table 4.19 – Junction 24 – A4157 / A418 – Existing Configuration

Approach	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2036 Do Minimum						
A418 (NE)	2	5	0.61	0	2	0.30
A4157 Douglas Road (S)	2	13	0.69	4	15	0.82
A418 (SW)	1	7	0.48	8	25	0.92
A4157 Elmhurst Road (W)	2	7	0.64	4	14	0.78
Junction Delay (s)	7.13			15.20		
2036 Do Cumulative 1 (HF+AW)						
A418 (NE)	2	5	0.61	1	3	0.35
A4157 Douglas Road (S)	4	16	0.79	5	18	0.86
A418 (SW)	1	7	0.42	3	15	0.76
A4157 Elmhurst Road (W)	2	7	0.65	3	10	0.74
Junction Delay (s)	8.28			11.86		
2036 Do Cumulative 2 (Reg 22)						
A418 (NE)	2	5	0.60	1	3	0.36
A4157 Douglas Road (S)	4	16	0.78	5	17	0.84
A418 (SW)	1	6	0.40	3	15	0.75
A4157 Elmhurst Road (W)	2	7	0.65	3	9	0.72
Junction Delay (s)	8.10			11.16		

No works to this junction are proposed as the operation is acceptable with cumulative development.

Junction 26 – Park Street / A41 Tring Road / Walton Road / A41 High Street



This is a 5 arm roundabout with the 5th arm providing access to the Tesco superstore. The junction has been modelled with Arcady and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.20 shows that the roundabout is approaching practical capacity with a maximum RFC of 0.81 in the 2036 Do Minimum scenario although queues are still relatively low. With the development in the 2036 Do Something scenario, the maximum RFC has reduced to 0.68 and queuing is low. With the 2036 Do Cumulative scenarios the RFC and queue lengths reduce further..

No works to this junction are therefore proposed as the operation is acceptable with standalone and cumulative development.

Table 4.20 – Junction 26 – A41 / A41 / Park Street - Existing Configuration

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum						
A41 Tring Road	1	4	0.52	1	4	0.52
Walton Road	4	19	0.81	1	7	0.49
A41 High Street	1	6	0.58	1	4	0.45
Park Street	0	4	0.30	1	4	0.32
Tesco Access	0	5	0.04	0	5	0.17
Junction Delay (s)	7.96			4.34		
2036 Do Something (HF)						
A41 Tring Road	1	3	0.46	1	3	0.47
Walton Road	2	11	0.68	1	6	0.41
A41 High Street	2	6	0.61	1	4	0.45
Park Street	0	5	0.30	1	4	0.33
Tesco Access	0	5	0.03	0	5	0.17
Junction Delay (s)	5.84			3.90		
2036 Do Cumulative 1 (HF + AW)						
A41 Tring Road	1	4	0.55	1	3	0.32
Walton Road	1	8	0.55	1	5	0.39
A41 High Street	1	4	0.50	1	3	0.46
Park Street	1	4	0.34	1	4	0.32
Tesco Access	0	4	0.04	0	5	0.17
Junction Delay (s)	4.77			3.58		
2036 Do Cumulative 2 (Reg 22)						
A41 Tring Road	1	3	0.47	1	3	0.33
Walton Road	1	8	0.55	1	5	0.35
A41 High Street	1	4	0.45	1	3	0.41
Park Street	0	4	0.30	0	4	0.29
Tesco Access	0	4	0.04	0	5	0.16
Junction Delay (s)	4.36			3.33		

Junction 28 – A418 / Stocklake / A418 Park Street / A418 Sapphire Way



This junction is a 4 arm roundabout and has been modelled with Arcady. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

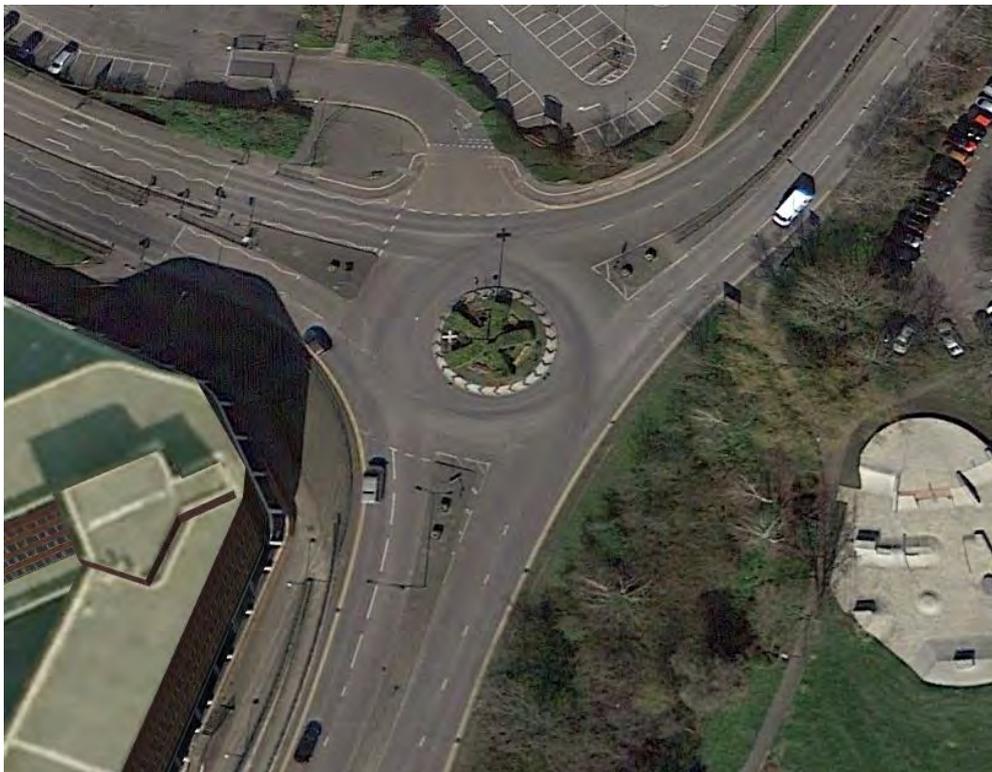
Table 4.21 demonstrates that the development has a slight impact on the junction. The junction will operate with spare capacity in the 2036 Do Cumulative scenarios.

No works to this junction are therefore proposed as the operation is acceptable with the standalone and cumulative development.

Table 4.21 – Junction 28 – Stocklake/Sapphire Way - Existing Configuration

Approach	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2036 Do Minimum						
Sapphire Way	2	7	0.81	1	5	0.48
Stocklake	2	11	0.89	4	14	0.78
Park Street	1	8	0.56	1	7	0.55
Vale Park Drive	1	4	0.47	2	7	0.69
Junction Delay (s)	7.34			8.60		
2036 Do Something (HF)						
Sapphire Way	2	8	0.83	1	6	0.48
Stocklake	3	14	0.74	4	14	0.78
Park Street	1	7	0.52	1	6	0.50
Vale Park Drive	1	4	0.48	2	6	0.68
Junction Delay (s)	8.21			8.44		
2036 Do Cumulative 1 (HF + AW)						
Sapphire Way	1 6	0.55	1	5	0.40	
Stocklake	3 14	0.76	3	13	0.77	
Park Street	1 5	0.39	1	4	0.31	
Vale Park Drive	1 4	0.41	1	4	0.51	
Junction Delay (s)	7.70			7.19		
2036 Do Cumulative 2 (Reg 22)						
Sapphire Way	1 6	0.57	1	5	0.39	
Stocklake	3 15	0.77	4	15	0.80	
Park Street	1 5	0.37	0	5	0.31	
Vale Park Drive	1 4	0.42	1	4	0.53	
Junction Delay (s)	8.00			8.03		

Junction 29 - A418 Sapphire Way / A418 Upper Hundreds Way / A418 Vale Park Drive



This junction is a 3 arm roundabout junction in the strategic model. The model inputs are correct, with the exception of pedestrian flows not being taken into account at the signalised crossing point on A418 Upper Hundreds Way. To assess the impact of including pedestrian flows on the capacity of the junction, we have run the model with pedestrian flows of 30 and 60 in each of the network peak hours. The inclusion of the pedestrian flows did not impact the overall functionality of the junction.

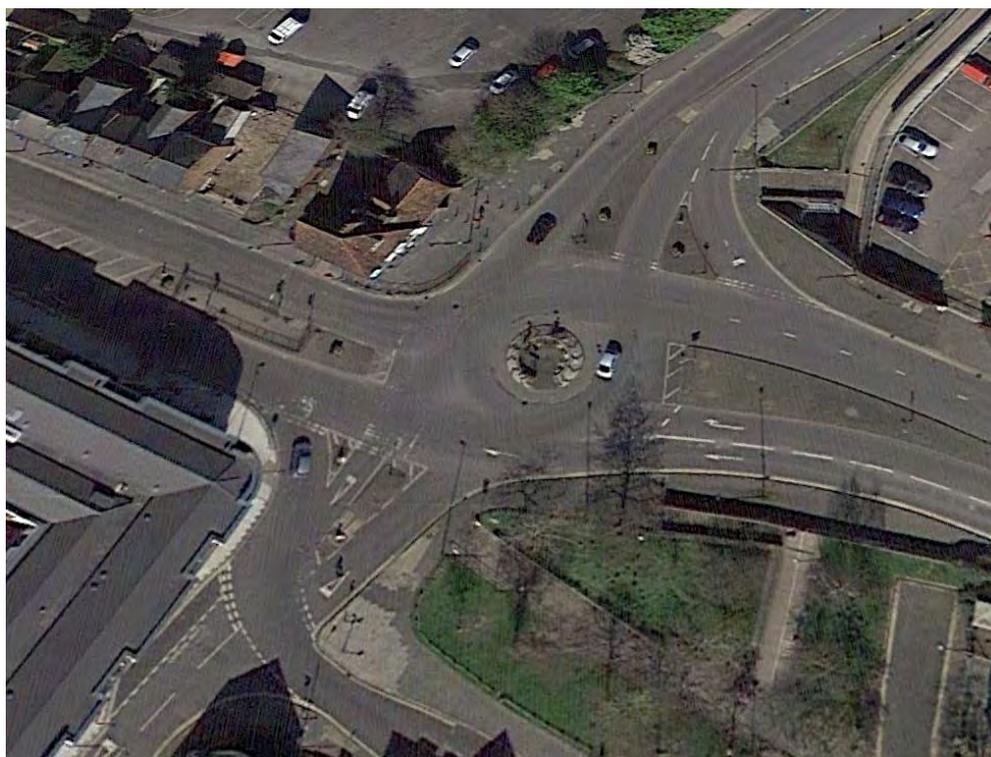
As shown in the table extracted below, the results show that the junction would operate over capacity in the AM peak hour in 2036 Do Minimum, with an RFC of 1.01 and queue length of 30 PCU's on the A418 (NE) Upper Hundreds Way arm. However, the capacity of the junction improves in both 2036 Do Cumulative 1 and 2036 Do Cumulative 2 scenarios, with the RFC falling below capacity, and queue length and delay reducing.

Table 4.22 – Junction 29 – Sapphire Way / Vale Park Drive – Existing Configuration

Approach	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2036 Do Minimum						
A418 (NE)	30	76	1.01	2	8	0.71
A418 (SW)	2	6	0.66	4	10	0.80
A418 (W)	3	6	0.71	2	6	0.68
Junction Delay (s)	29.45			7.89		
2036 Do Cumulative 1 (HF + AW)						
A418 (NE)	8	27	0.91	2	7	0.65
A418 (SW)	2	6	0.65	2	5	0.63
A418 (W)	3	6	0.74	2	5	0.66
Junction Delay (s)	12.47			5.44		
2036 Do Cumulative 2 (Reg 22)						
A418 (NE)	6	17	0.86	2	6	0.65
A418 (SW)	2	6	0.61	2	5	0.62
A418 (W)	2	5	0.66	2	4	0.61
Junction Delay (s)	9.07			5.16		

No works to this junction have therefore been proposed as the operation of the junction is shown to be acceptable with cumulative development. A standalone assessment of this junction was not required as the traffic flow changes were not material and it was therefore sifted out of assessment.

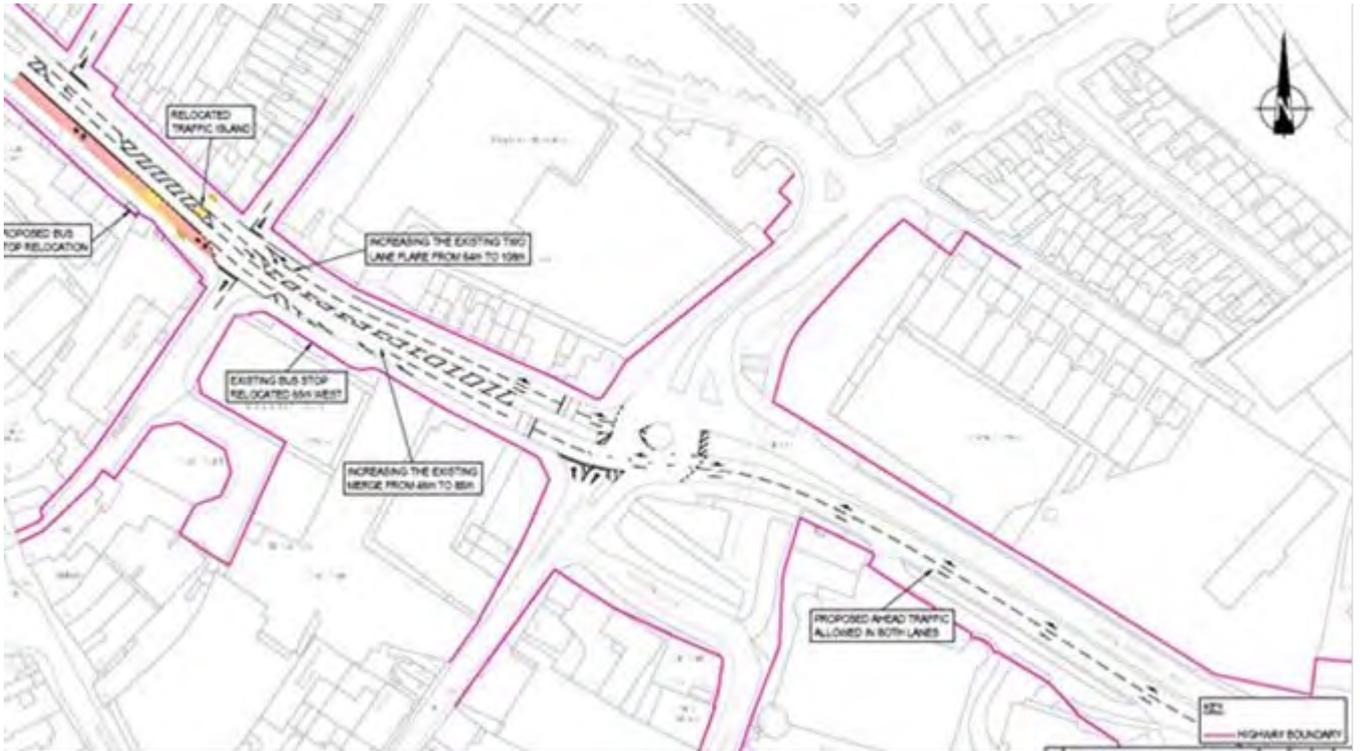
Junction 31 - A418 Upper Hundreds Way / Cambridge Street



This junction is a 4 arm roundabout and has been modelled using standard ARCADY methods and using the lane simulation option, to assess the impact of uneven lane usage. Given the high traffic flows at this junction and how it operates, lane simulation is considered to provide the most accurate reflection of how the junction would operate on the ground.

With the existing junction layout, the results show that the junction would operate over capacity in the 2036 Do Minimum scenario in both the AM and PM peak hours, and would deteriorate further with the addition of the development traffic in the AM peak in the 2036 Do Cumulative 2 scenario. Whilst it is noted that the junction operation deteriorates significantly in the 2036 Do Cumulative 1 scenario when compared to the Do Minimum, it is recognised that Do Cumulative 2 is the more likely cumulative scenario as it takes into account all current live planning applications for strategic development.

In 2017 mitigation works were proposed to this junction as a result of the cumulative impact. The mitigation proposals were shown on PBA Drawing 32113/5501/022 Revision E and involve changing the lane allocation on Upper Hundreds Way to allow ahead movements in both lanes, increasing the merge length on the A418 north exit, increasing the flare length on the A418 north approach and relocating bus stops on the A418 north. An extract of the drawing is given below.



The effects of this previously proposed mitigation scheme have been assessed using the updated model flows. The results of the ARCADY lane simulation model for the existing junction layout (table 4.24) versus the proposed mitigation scheme (table 4.26) are extracted below.

Table 4.24 – Junction 31 – A418 / Cambridge Street – Existing Configuration (Lane Simulation)

Approach	AM		PM	
	Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
2036 Do Minimum				
Cambridge Street (N)	2	20	1	10
Upper Hundreds Way	471	1173	406	971
Cambridge Street (S)	1	10	2	14
New Street	369	744	333	748
Junction Delay (s)	806.85		714.34	
2036 Do Cumulative 1 (HF + AW)				
Cambridge Street (N)	2	22	1	11
Upper Hundreds Way	684	1520	395	959
Cambridge Street (S)	0	9	2	15
New Street	574	998	470	916
Junction Delay (s)	1081.98		784.26	
2036 Do Cumulative 2 (Reg 22)				
Cambridge Street (N)	2	20	1	11
Upper Hundreds Way	552	1318	287	714
Cambridge Street (S)	0	9	2	15
New Street	384	769	270	630
Junction Delay (s)	892.06		550.66	

Table 4.26 – Junction 31 – A418 / Cambridge Street – Proposed Arrangement (Lane Simulation)

Approach	AM		PM	
	Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
2036 Do Cumulative 1 (HF + AW)				
Cambridge Street (N)	4	41	1	14
Upper Hundreds Way	122	245	8	21
Cambridge Street (S)	1	24	5	41
New Street	603	1047	447	847
Junction Delay (s)	608.37		409.05	
2036 Do Cumulative 2 (Reg 22)				
Cambridge Street (N)	3	34	1	13
Upper Hundreds Way	40	94	5	15
Cambridge Street (S)	1	20	3	28
New Street	418	822	251	585
Junction Delay (s)	431.44		269.18	

When comparing the 2036 Do Minimum (existing layout) to the Do Cumulative 2 scenario with the proposed mitigation scheme, it can be seen that queues on New Street increase from 369 to 418 PCU's in the AM peak hour. However, queues on Upper Hundreds Way reduce significantly as a result of the proposed scheme in both the AM and PM peak hours. There is also an overall betterment to the junction performance, with total junction delay approximately halving. Therefore, on balance, the impact of the cumulative development on this junction is considered to be acceptable subject to the implementation of the improvement scheme.

Junction 35 - A41 Tring Road / Limes Avenue

This junction takes the form of a priority junction with a ghost island right turn lane. The junction has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The results show that the impact of the development on this junction is not material and as such no mitigation works are required or proposed to this junction.

Junction 36 – A41 Tring Road / King Edward Avenue / A4157 Oakfield Road



This junction takes the form of a 4 arm left right staggered signalised junction. The junction has been modelled with the Linsig junction modelling programme for signalised junctions. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.28 shows that the junction will operate significantly over theoretical capacity in the 2036 Do Minimum scenario, with mean maximum queues estimated to be c89 vehicles in the AM peak period and c201 vehicles in the PM peak period. Practical Reserve Capacity (PRC) is -21.8 in the AM and -104.8 in the PM.

In the 2036 Do Something scenario with Hampden Fields only, the junction will continue to operate significantly over theoretical capacity although the operation of the junction improves slightly in the AM peak period with an estimated mean maximum queue of c62 vehicles. In the PM there is a slight worsening in queue length from 201 to 204 vehicles. The PRC is -18.2 in the AM and -102.1 in the PM so a slight improvement over the 2036 Do Minimum scenario.

The 2036 Do Cumulative 1 scenario shows a slight improvement in the AM compared to the 2036 Do minimum with estimated mean maximum queues of c77 vehicles. In the PM there is a significant improvement with the estimated mean maximum queue reducing from c201 to c113 vehicles. Overall, there is a slight improvement in the operation of the junction in the AM peak period as the PRC increases to -17.7. In the PM period there is a significant improvement in PRC as it increases to -31.6.

Table 4.28 – Junction 36 – A41 / King Edward Avenue – Existing Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ	Deg Sat (%)	MMQ
2036 Do Minimum					
1/1	A41 Tring Road (EB) Ahead Left	107.8	65	184.4	201
1/2	A41 Tring Road (EB) Ahead	38.2	8	56.2	4
2/2+2/1	Oakfield Road Left Right	106.2:106.2	48	61.3:61.3	3
3/1	A41 Tring Road Internal (WB) Ahead	70.4	31	29.3	0
3/2	A41 Tring Road Internal (WB) Right	89.0	12	87.1	10
4/1	A41 Tring Road Internal (EB) Ped Ahead	51.0	1	32.0	4
4/2	A41 Tring Road Internal (EB) Ped Ahead	40.7	3	35.2	5
5/1	A41 Tring Road Internal (EB) Ahead	50.6	0	31.7	0
5/2	A41 Tring Road Internal (EB) Ahead Right	89.9	16	39.2	0
6/1	A41 Tring Road (WB) Ahead Left	109.6	89	166.4	140
6/2	A41 Tring Road (WB) Ahead	21.9	4	173.7	166
7/1+7/2	King Edwards Avenue Left Right	50.5:50.5	8	45.6:45.6	4
PRC (%)			-21.8		-104.8
Cycle Time (s)			115		56
2036 Do Something (HF)					
1/1	A41 Tring Road (EB) Ahead Left	106.4	62	142.2	137
1/2	A41 Tring Road (EB) Ahead	35.6	7	44.1	4
2/2+2/1	Oakfield Road Left Right	102.5:102.5	33	59.1:34.4	3
3/1	A41 Tring Road Internal (WB) Ahead	69.3	0	31.3	0
3/2	A41 Tring Road Internal (WB) Right	89.9	11	87.5	10
4/1	A41 Tring Road Internal (EB) Ped Ahead	55.1	1	41.1	0
4/2	A41 Tring Road Internal (EB) Ped Ahead	40.9	2	32.6	4
5/1	A41 Tring Road Internal (EB) Ahead	54.7	0	40.8	0
5/2	A41 Tring Road Internal (EB) Ahead Right	89.0	0	34.3	0
6/1	A41 Tring Road (WB) Ahead Left	93.1	34	135.4	87
6/2	A41 Tring Road (WB) Ahead	20.0	4	181.9	204
7/1+7/2	King Edwards Avenue Left Right	57.3:57.3	8	29.8:29.8	3
PRC (%)			-18.2		-102.1
Cycle Time (s)			114		60
2036 Do Cumulative 1 (HF+AW)					
1/1	A41 Tring Road (EB) Ahead Left	84.1	24	118.4	113
1/2	A41 Tring Road (EB) Ahead	24.5	5	25.0	5
2/2+2/1	Oakfield Road Left Right	96.1:74.6	14	68.8:68.8	14
3/1	A41 Tring Road Internal (WB) Ahead	70.5	34	39.8	2
3/2	A41 Tring Road Internal (WB) Right	78.5	8	89.2	23
4/1	A41 Tring Road Internal (EB) Ped Ahead	43.9	1	40.8	10
4/2	A41 Tring Road Internal (EB) Ped Ahead	34.8	2	33.2	2
5/1	A41 Tring Road Internal (EB) Ahead	43.6	0	40.5	1
5/2	A41 Tring Road Internal (EB) Ahead Right	89.2	5	44.9	0
6/1	A41 Tring Road (WB) Ahead Left	106.0	77	57.1	14
6/2	A41 Tring Road (WB) Ahead	17.0	3	33.0	7
7/1+7/2	King Edwards Avenue Left Right	75.2:75.2	13	72.1:72.1	12
PRC (%)			-17.7		-31.6
Cycle Time (s)			118		120
2036 Do Cumulative 2 (Reg 22)					
1/1	A41 Tring Road (EB) Ahead Left	75.0	20	113.0	92
1/2	A41 Tring Road (EB) Ahead	20.3	4	23.5	5
2/2+2/1	Oakfield Road Left Right	94.5:84.3	17	72.7:72.7	16
3/1	A41 Tring Road Internal (WB) Ahead	71.8	34	37.3	2
3/2	A41 Tring Road Internal (WB) Right	89.5	17	89.7	22
4/1	A41 Tring Road Internal (EB) Ped Ahead	40.8	3	41.2	11
4/2	A41 Tring Road Internal (EB) Ped Ahead	34.7	11	33.7	1
5/1	A41 Tring Road Internal (EB) Ahead	40.5	0	40.9	1
5/2	A41 Tring Road Internal (EB) Ahead Right	93.8	17	44.3	0
6/1	A41 Tring Road (WB) Ahead Left	97.4	44	52.6	12
6/2	A41 Tring Road (WB) Ahead	17.4	3	31.3	7
7/1+7/2	King Edwards Avenue Left Right	83.9:83.9	15	69.9:69.9	12
PRC (%)			-8.2		-25.5
Cycle Time (s)			116		120

The 2036 Do Cumulative 2 scenario shows further improvements with the mean maximum queue estimated to reduce to c44 vehicles in the AM peak period and c92 vehicles in the PM peak period. The PRC is -8.2 in the AM and -25.5 in the PM and therefore a significant improvement in PRC over the 2036 Do Minimum scenario.

It can be concluded that the junction performs better in all 2036 Do Something scenarios compared to the 2036 Do Minimum scenario, with cumulative scenarios performing significantly better. The development does not worsen the operation of the junction and there is therefore no basis for a requirement of the previously secured improvements to this junction.

No works to this junction are therefore proposed as the operation is acceptable with standalone and cumulative development.

Junction 37 - Wendover Way / Turnfurlong Lane / King Edward Avenue

This junction takes the form of a mini roundabout. The junction has been modelled with the Arcady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 38 – Marroway / Worlds End Lane



The Marroway/Worlds End Lane junction is a 3-arm mini-roundabout and has been modelled with Arcady. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.30 demonstrates that the junction will operate significantly over theoretical capacity in the AM peak hour of the 2036 Do Minimum scenario with an RFC of 1.07 on Main Street and estimated queues of c55 vehicles. In the PM, the RFC exceeds practical capacity on Main Street, but queues are still low.

The 2036 Do Something scenario shows that the development will slightly improve the operation of the junction with a reduction in RFC of 1% in the AM peak hour and 27% in the PM peak hour.

Table 4.30 – Junction 38 – Marroway / Worlds End Lane – Existing Configuration

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum						
1 – Main Street	55	287	1.07	7	42	0.88
2 – Worlds End Lane	0	9	0.20	1	14	0.43
3 – Marroway	5	25	0.83	4	21	0.81
Junction Delay (s)	145.45			28.40		
2036 Do Something (HF)						
1 – Main Street	54	270	1.06	2	13	0.61
2 – Worlds End Lane	1	10	0.32	1	14	0.59
3 – Marroway	1	10	0.56	1	9	0.47
Junction Delay (s)	149.66			11.87		
2036 Do Cumulative 1 (HF + AW)						
1 – Main Street	2	18	0.71	1	9	0.47
2 – Worlds End Lane	1	10	0.43	3	22	0.78
3 – Marroway	1	8	0.42	1	7	0.32
Junction Delay (s)	13.19			14.86		
2036 Do Cumulative 2 (Reg 22)						
1 – Main Street	4	25	0.80	1	11	0.59
2 – Worlds End Lane	1	9	0.38	2	16	0.66
3 – Marroway	1	9	0.49	1	9	0.48
Junction Delay (s)	16.97			12.18		

In the 2036 Cumulative Scenarios the operation of the junction will improve significantly due to the introduction of the radial route with the queue on Main Street estimated to reduce from c55 vehicles to c4 vehicles in the AM peak period.

No works to this junction are therefore proposed as the operation is acceptable with standalone and cumulative development.

Junction 41 - Turnfurlong Lane / Westmorland Avenue

This junction takes the form of a priority junction. The junction has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 43 - Turnfurlong Lane / Camborne Avenue

This junction takes the form of a priority junction. The junction has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct.

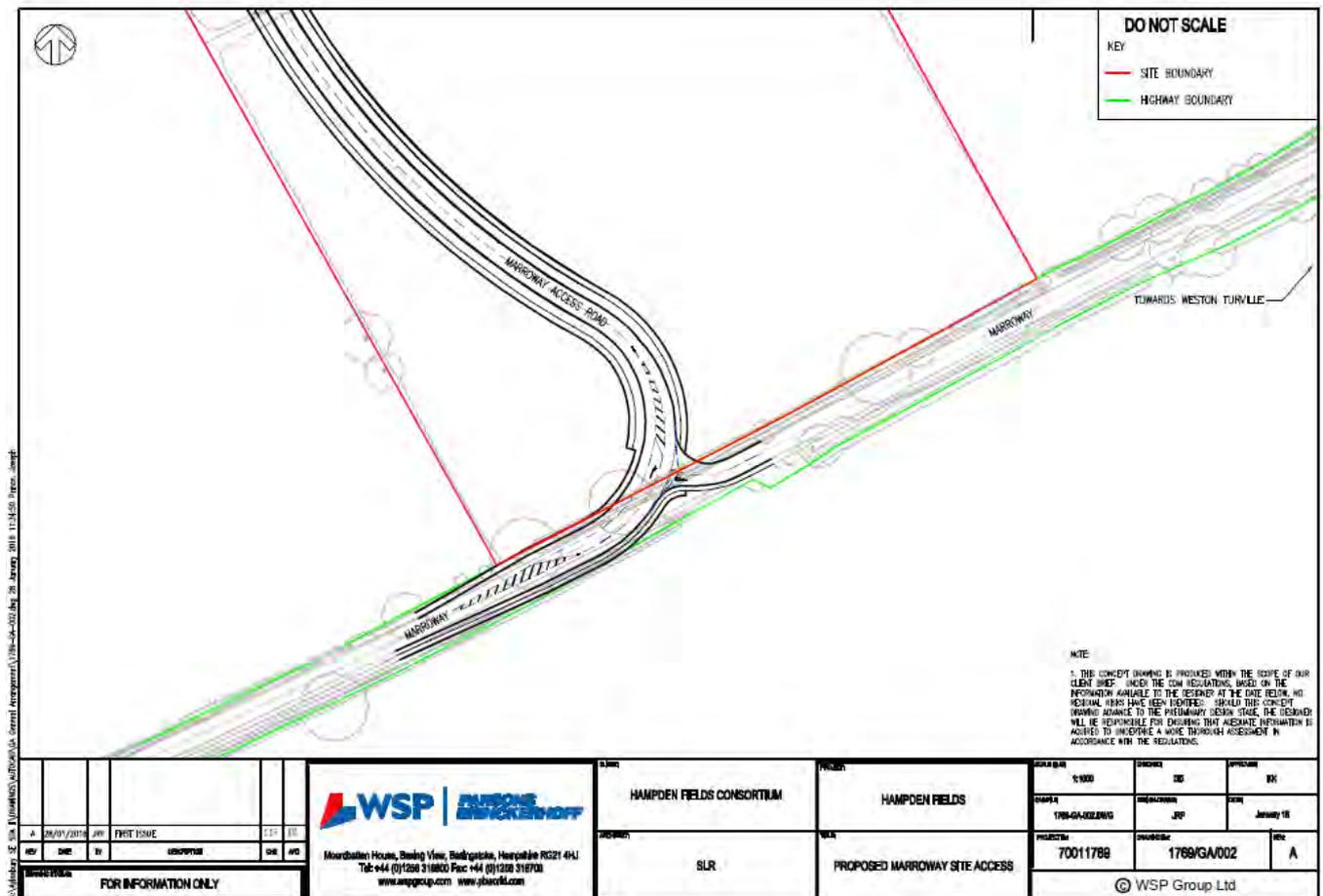
Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 44 – Marroway / Marroway Link Road

The Marroway / Marroway Link Road junction is proposed as a 3-arm ‘reverse’ priority junction with the primary route Marroway west– Marroway Link Road and the Marroway east arm the minor arm of a new ghost island priority junction. The proposed junction arrangement is indicated on WSP Drawing 1769-GA-002A reproduced below and is that same as that considered in 2017.



Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

Table 4.33 shows that the junction has been modelled for 2036 Do Something as well as all three Do Cumulative scenarios. The junction is predicted to operate with a significant amount of spare capacity in all 2036 scenarios, with a maximum RFC of 0.69 in the 2036 Do Cumulative 2 scenario and a maximum queue estimated to be c2 vehicles.

The operation of the proposed junction is acceptable with standalone and cumulative development.

Table 4.33 – Junction 44 – Marroway / Marrow Link Road – Existing Configuration

Stream	Movement	AM			PM		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Something (HF)							
Stream B-C	Marroway (E) – Marroway (W)	2	14	0.62	1	10	0.44
Stream B-A	Marroway (E) – MLR	0	11	0.10	0	11	0.29
Stream C-AB	Marroway (W) – MLR/Marroway (E)	2	17	0.66	1	13	0.57
Junction Delay (s)		11.28			9.36		
2036 Do Cumulative 1 (HF + AW)							
Stream B-C	Marroway (E) – Marroway (W)	0	6	0.12	0	9	0.06
Stream B-A	Marroway (E) – MLR	0	9	0.19	2	20	0.67
Stream C-AB	Marroway (W) – MLR/Marroway (E)	0	9	0.18	0	9	0.22
Junction Delay (s)		3.15			10.17		
2036 Do Cumulative 2 (Reg 22)							
Stream B-C	Marroway (E) – Marroway (W)	0	8	0.24	0	10	0.09
Stream B-A	Marroway (E) – MLR	0	7	0.09	2	23	0.69
Stream C-AB	Marroway (W) – MLR/Marroway (E)	0	9	0.20	1	10	0.36
Junction Delay (s)		2.83			10.82		
2036 Do Cumulative 3 (VALP)							
Stream B-C	Marroway (E) – Marroway (W)	1	9	0.33	0	10	0.07
Stream B-A	Marroway (E) – MLR	0	8	0.10	2	23	0.68
Stream C-AB	Marroway (W) – MLR/Marroway (E)	0	9	0.24	1	9	0.32
Junction Delay (s)		3.51			9.43		

Junction 45 - Marroway Link Road (MLR) / Southern Link Road (SLR)

In 2017 this new junction within the Hampden Fields development was proposed to be a roundabout. Having considered the suitability of this configuration based on the updated flows from the 2020 Aylesbury Transport Model outputs, the junction form has been revised to be configured as a 3 arm traffic signalised junction. The SLR itself continues to be specified as a dual carriageway link, the alignment of which has been revised locally to the junction to reflect its change from a roundabout to signals. The proposed junction arrangement is included on RPS Drawing JNY10535-DR-009. An extract of the drawing is given below.



The junction has been modelled with the LinSig modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

Table 4.34 – Junction 45 – Marrow Link Road / SLR – Proposed Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 Do Something (HF)					
1/1	SLR (WB) Left	17.7	3	9.4	1
1/2	SLR (WB) Ahead	30.3	8	33.4	7
1/3	SLR (WB) Ahead	30.3	8	33.5	7
2/1	MLR Left	21.5	4	18.5	3
2/2	MLR Right	30.8	6	33.7	5
3/1	SLR (EB) Ahead	23.2	4	17.4	3
3/2+3/3SLR (EB) Ahead Right		28.4:28.4	5	24.9:29.6	3
PRC (%)		192.7		167.0	
Cycle Time (s)		120		120	
2036 Do Cumulative 1 (HF+AW)					
1/1	SLR (WB) Left	7.4	1	13.9	2
1/2	SLR (WB) Ahead	68.9	20	87.6	33
1/3	SLR (WB) Ahead	69.0	20	87.7	33
2/1	MLR Left	43.1	8	56.3	10
2/2	MLR Right	84.1	13	87.8	13
3/1	SLR (EB) Ahead	84.5	31	79.6	26
3/2+3/3SLR (EB) Ahead Right		75.4:75.4	8	0.0:88.0	10
PRC (%)		6.5		2.3	
Cycle Time (s)		118		120	
2036 Do Cumulative 2 (Reg 22)					
1/1	SLR (WB) Left	8.4	1	16.5	3
1/2	SLR (WB) Ahead	80.3	24	91.8	36
1/3	SLR (WB) Ahead	80.4	24	91.8	36
2/1	MLR Left	26.4	5	51.2	9
2/2	MLR Right	79.1	14	91.0	14
3/1	SLR (EB) Ahead	80.1	26	79.9	26
3/2+3/3SLR (EB) Ahead Right		80.3:80.3	12	0.0:90.5	12
PRC (%)		11.9		-1.8	
Cycle Time (s)		118		118	
2036 DC3 (VALP)					
1/1	SLR (WB) Left	8.7	1	29.3	5
1/2	SLR (WB) Ahead	81.2	24	87.0	31
1/3	SLR (WB) Ahead	81.2	24	87.0	31
2/1	MLR Left	25.2	4	45.7	8
2/2	MLR Right	81.3	15	87.4	14
3/1	SLR (EB) Ahead	79.2	26	85.5	32
3/2+3/3SLR (EB) Ahead Right		80.8:80.8	12	0.0:86.3	9
PRC (%)		10.6		3.0	
Cycle Time (s)		117		117	

The results show that the operation of the proposed junction is acceptable with standalone and cumulative development

Junction 46 – SLR / New Road

The SLR / New Road junction is a proposed 4-arm signalised junction at the point where the new SLR dual carriageway crosses the existing New Road which is subject to re-alignment. The proposed layout is shown on RPS Drawing JNY10535-DR-007 and reproduced below.

The geometry and flows have been checked and are correct.



Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

The output files match Table 4.35 apart from 2036 Do Cumulative 1 AM where the PRC on the output file is 29.2 rather than 23.3 and the cycle time is 240.

Paragraph 4.153 states that “Junction performance under the 2036 Do Cumulative 2 (Reg 22) scenario at this location also shows slight betterment over the 2036 Do Cumulative 1 (HF+AW) during the AM peak, and a slight worsening during the PM peak with overall PRC levels of 11.9% and -1.8% respectively with corresponding maximum queue figures of 26 and 36 PCUs.” This is incorrect, PRC reduces from 29.2% in Do Cumulative 1 AM to 23.3% in Do Cumulative 2 AM. In the PM the PRC reduces from 8.2% in Do Cumulative 1 to 2.7% in Do Cumulative 2, not -1.8%.

The junction operates within capacity in all scenarios. The model assumes pedestrian crossings run every other stage, but it is likely to run less often and therefore the junction would have more capacity than shown in Table 4.35.

The operation of the proposed junction is acceptable with standalone and cumulative development.

Table 4.35 – Junction 46 – SLR / New Road – Proposed Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 Do Something (HF)					
1/1	SLR (WB) Left Ahead	38.0	7	54.3	15
1/2+1/3	SLR (WB) Ahead Right	41.2	9	56.5	17
2/2+2/1	New Road South Right Left Ahead	31.2	5	56.3	8
3/1	SLR (EB) Ahead Left	41.2	8	30.6	7
3/2+3/3	SLR (EB) Ahead Right	44.8	10	32.7	8
4/2+4/1	New Road North Left Ahead Right	44.6	8	40.9	5
PRC (%)		100.7		59.2	
Cycle Time (s)		240		240	
2036 Do Cumulative 1 (HF+AW)					
1/1	SLR (WB) Left Ahead	59.7	17	81.7	30
1/2+1/3	SLR (WB) Ahead Right	61.2	19	83.2	34
2/2+2/1	New Road South Right Left Ahead	64.9	9	83.2	11
3/1	SLR (EB) Ahead Left	67.6	21	59.6	16
3/2+3/3	SLR (EB) Ahead Right	69.6	24	61.4	18
4/2+4/1	New Road North Left Ahead Right	69.4	10	76.0	8
PRC (%)		23.3		8.2	
Cycle Time (s)		239		239	
2036 Do Cumulative 2 (Reg 22)					
1/1	SLR (WB) Left Ahead	62.9	18	86.5	33
1/2+1/3	SLR (WB) Ahead Right	64.8	21	87.6	37
2/2+2/1	New Road South Right Left Ahead	72.9	10	86.6	14
3/1	SLR (EB) Ahead Left	71.1	23	60.1	15
3/2+3/3	SLR (EB) Ahead Right	73.0	26	62.1	18
4/2+4/1	New Road North Left Ahead Right	61.4	8	85.0	8
PRC (%)		23.3		2.7	
Cycle Time (s)		239		240	
2036 DC3 (VALP)					
1/1	SLR (WB) Left Ahead	63.2	19	86.0	33
1/2+1/3	SLR (WB) Ahead Right	65.1	22	88.3	37
2/2+2/1	New Road South Right Left Ahead	74.3	11	87.4	14
3/1	SLR (EB) Ahead Left	72.9	25	63.2	17
3/2+3/3	SLR (EB) Ahead Right	74.6	29	64.8	19
4/2+4/1	New Road North Left Ahead Right	60.1	8	68.1	7
PRC (%)		20.6		1.9	
Cycle Time (s)		240		240	

Junction 48 - Halton Village Road / Chestnut Avenue

This is a ghost island priority junction with Halton Village Road North to Chestnut Avenue the main carriageway. The junction has been modelled with the Picady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The junction will operate with a significant amount of spare capacity in the Do Cumulative Scenarios with a maximum queue estimated to be c2 vehicles in the PM peak period.

No works to this junction are therefore proposed as the operation is acceptable with cumulative development.

Junction 50 –Aylesbury Road / Halton Lane



This junction takes the form of a mini roundabout and has been modelled with the Arcady modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.37 shows that in the 2036 Do Minimum scenario, the junction operates above theoretical capacity, with a maximum RFC of 2.0 on the Halton Lane arm during the AM peak hour and a corresponding estimated queue of c347 vehicles. In the PM peak hour, the junction also exceeds theoretical capacity with an RFC is 1.06 and estimated queues of c38 vehicles.

In the 2036 Do Something scenario the maximum RFC in the AM peak hour increases to 2.10 with a corresponding estimated queue of c364 vehicles, an increase of 17 vehicles. There is an improvement in the PM peak hour, with the maximum RFC reducing from 1.06 to 0.88 on Halton Lane and the maximum queue in this peak estimated to reduce from 38 to 17 vehicles.

The operation of the junction improves slightly with the Do Cumulative scenarios compared to the 2036 Do Minimum, with the RFC on Halton Lane in the AM peak hour reducing to 1.87 in Do Cumulative 1 AM and 1.89 in Do Cumulative 2 AM. There is also a slight improvement on Halton Lane in the PM with the RFC reducing to 0.98 in Do Cumulative 1 and 0.95 in Do Cumulative 2.

Halton Lane is the subject to a degree of short-cutting at present, by drivers choosing to access the A413 corridor at this location. The council would not wish to encourage these movements by seeking to improve the performance of the junction that would serve to encourage this driver behaviour.

The two Do Cumulative scenarios show a slight improvement in the operation of the junction compared to the 2036 Do Minimum scenario. No additional mitigation is therefore being identified for this junction. This is considered acceptable as a mitigation measures to improve capacity at the junction would further encourage short-cutting, which would undermine traffic calming efforts locally.

Table 4.37 – Junction 50 – Aylesbury Road / Halton Lane – Existing Configuration

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum						
1 - Aylesbury Road South	1	7	0.48	2	11	0.63
2 - Aylesbury Road North	4	21	0.81	5	23	0.83
3 - Halton Lane	347	3146	2.00	38	283	1.08
Junction Delay (s)	1135.05			88.45		
2036 Do Something (HF)						
1 - Aylesbury Road South	1	8	0.55	3	14	0.73
2 - Aylesbury Road North	4	22	0.82	2	13	0.70
3 - Halton Lane	364	3470	2.10	7	60	0.88
Junction Delay (s)	1208.34			24.39		
2036 Do Cumulative 1 (HF + AW)						
1 - Aylesbury Road South	1	7	0.54	3	13	0.71
2 - Aylesbury Road North	3	15	0.74	2	14	0.69
3 - Halton Lane	324	2748	1.87	17	141	0.98
Junction Delay (s)	987.29			45.83		
2036 Do Cumulative 2 (Reg 22)						
1 - Aylesbury Road South	1	6	0.47	2	12	0.71
2 - Aylesbury Road North	4	20	0.79	3	16	0.75
3 - Halton Lane	304	2602	1.89	12	112	0.95
Junction Delay (s)	974.09			36.26		

Junction 51 - Aylesbury Road / Grenville Avenue

This junction takes the form of a priority junction with a ghost island right turn lane. The junction has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 52 - A413 / Wendover Road



This junction is a 3 arm roundabout and has been modelled with the Arcady modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

Table 4.39 shows that in the 2036 Do Minimum scenario the junction is expected to operate slightly above practical capacity in the AM peak with an RFC of 0.9 on the Wendover Road East arm. In the 2036 Do Something scenario with Hampden Fields only, the RFC will increase by 1% to 0.91 in the AM peak hour and an indicated queue length increase from 8 to 9 vehicles.

In the two Do Cumulative scenarios the junction performance improves and the junction operates within capacity with a maximum RFC of 0.75 on the Wendover Road East arm and a indicated queue of 3 vehicles.

As the operation of the junction improves in the Do Cumulative scenarios compared to the 2036 Do Minimum scenario, no works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Table 4.39 – Junction 52 – A413 / Wendover Road – Existing Configuration

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum						
1 - Wendover Road East	8	28	0.90	1	6	0.59
2 - A413	1	3	0.47	2	5	0.69
3 - Wendover Road West	2	6	0.68	1	4	0.42
Junction Delay (s)	12.10			4.90		
2036 Do Something (HF)						
1 - Wendover Road East	9	27	0.91	1	5	0.56
2 - A413	1	3	0.47	2	5	0.71
3 - Wendover Road West	1	4	0.55	1	3	0.36
Junction Delay (s)	12.33			4.78		
2036 Do Cumulative 1 (HF + AW)						
1 - Wendover Road East	2	9	0.70	1	4	0.42
2 - A413	1	3	0.46	2	4	0.60
3 - Wendover Road West	1	4	0.52	1	3	0.36
Junction Delay (s)	5.09			3.52		
2036 Do Cumulative 2 (Reg 22)						
1 - Wendover Road East	3	10	0.75	1	4	0.47
2 - A413	1	3	0.50	1	4	0.58
3 - Wendover Road West	1	5	0.58	1	3	0.42
Junction Delay (s)	5.86			3.67		

Junction 55 - South East Aylesbury Link Road (SEALR) / Lower Road

This junction is a proposed new 4 arm large diameter roundabout, and is currently the subject of a live planning application for SEALR. The proposed junction design is indicated on AECOM Drawing 60535364-ACM-00-XX-SKE-CE-0100, an extract of which is shown below.

Table 4.40 – Junction 55 – SEALR / Lower Road – Proposed Configuration

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Cumulative 1 (HF + AW)						
1 – SEALR	2	5	0.63	2	6	0.70
2 – Lower Road South	1	9	0.55	2	16	0.71
3 – SMRR	5	19	0.83	2	14	0.70
4 – Lower Road North	4	10	0.78	3	9	0.75
Junction Delay (s)	10.35			9.18		
2036 Do Cumulative 2 (Reg 22)						
1 – SEALR	4	9	0.80	3	8	0.77
2 – Lower Road South	7	41	0.89	5	29	0.85
3 – SMRR	5	21	0.84	6	23	0.85
4 – Lower Road North	5	15	0.84	3	11	0.77
Junction Delay (s)	17.95			14.91		
2036 Do Cumulative 3 (VALP)						
1 – SEALR	2	5	0.63	4	8	0.80
2 – Lower Road South	3	15	0.75	7	39	0.89
3 – SMRR	3	11	0.73	5	21	0.84
4 – Lower Road North	6	16	0.85	3	11	0.77
Junction Delay (s)	11.35			16.23		

Junction 56 - SLR / Wendover Road

Two proposed layouts are being considered for this junction as the final configuration is dependent on the outcome of the SEALR planning application. For the purposes of the Hampden Fields development, the proposal includes a new 3-arm traffic signal junction. This arrangement is indicated on WSP Drawing 2826-GA-002A contained in Appendix D and reproduced below.

The proposed junction layout which is proposed as part of the SEALR planning application is a 4-arm roundabout which lies at the eastern end of the SEALR and provides a connection point to the A413 Wendover Road and the SLR. In this event, the roundabout junction would completely replace the signalised junction arrangement. The proposed roundabout is indicated on AECOM Drawing 60535364-ACM-00-XX-SKE-CE-0104 contained in Appendix D and reproduced below.

The signalised junction has been modelled with the Linsig modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2;
- 2036 Do Cumulative 3.

Table 4.41 shows that the junction will operate with spare capacity in the AM peak hour with a maximum degree of saturation of 85.5% and a mean maximum queue of c17 vehicles on the A413 southbound arm. In the PM peak hour, the junction will operate slightly above practical capacity with a maximum degree of saturation of 92% although still within theoretical capacity. A mean maximum queue of c21 vehicles is estimated on the A413 northbound arm.

Table 4.41 – Junction 56 – SLR / Wendover Road – Proposed Signal Junction Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 Do Something (HF)					
1/1	A413 (SB) Left Ahead	84.5	17	91.6	19
½	A413 (SB) Ahead	75.9	16	79.1	15
2/2+2/1	SLR Right Left	68.6:68.6	5	92.0:92.0	11
2/3	SLR Right	63.7	5	85.6	9
3/1	A413 (NB) Ahead	58.6	11	68.5	13
3/2+3/3A	A413 (NB) Ahead Right	85.5:85.5	16	91.0:91.0	21
PRC (%)		5.2		-2.3	
Cycle Time (s)		90		84	

The operation of the proposed signalised junction is acceptable with standalone development.

The roundabout junction has been modelled with the Arcady modelling programme. The geometry and flows have been checked and are correct and the results are shown in Table 4.42 below;

Table 4.42 – Junction 56 – SLR / Wendover Road – Proposed Roundabout Configuration

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Cumulative 1 (HF + AW)						
2 – Wendover Road South	5	17	0.84	5	20	0.83
3 – SEALR	2	6	0.65	2	6	0.67
4 – Wendover Road North	6	14	0.86	3	7	0.74
1 – SLR	3	6	0.73	8	13	0.90
Junction Delay (s)	10.25			11.25		
2036 Do Cumulative 2 (Reg 22)						
2 – Wendover Road South	5	15	0.84	6	26	0.87
3 – SEALR	2	7	0.71	2	6	0.67
4 – Wendover Road North	5	13	0.83	3	8	0.76
1 – SLR	2	5	0.68	12	18	0.92
Junction Delay (s)	9.50			14.38		
2036 Do Cumulative 3 (VALP)						
2 – Wendover Road South	5	16	0.84	4	17	0.82
3 – SEALR	2	7	0.71	2	6	0.66
4 – Wendover Road North	4	12	0.82	4	10	0.79
1 – SLR	2	5	0.68	7	11	0.87
Junction Delay (s)	9.42			10.40		

Table 4.42 shows that in the 2036 Do Cumulative 1 scenario there is a maximum RFC of 0.9 in the PM peak hour with an estimated maximum queue of 8 vehicles on the SLR arm. The results for the 2036 Do Cumulative 2 scenario show that the junction slightly exceeds practical capacity with an RFC of 0.92 on the SLR arm in the PM peak and an estimated maximum queue of 12 vehicles.

In the 2036 Do Cumulative 3 (VALP) scenario the operation of the junction improves and remains below practical capacity with an RFC of 0.87 in the PM Peak with a corresponding maximum queue of 7 vehicles.

The operation of the proposed roundabout junction is acceptable with cumulative development.

Junction 57 - Lower Road / Southern Hospital Access

This junction is configured as a 3 arm priority junction arrangement. The junction has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 58 - Lower Road / Kyneston Avenue

This is a ghost island priority junction and has been modelled with the Picady junction modelling programme. The geometry and flows have been checked and are correct.

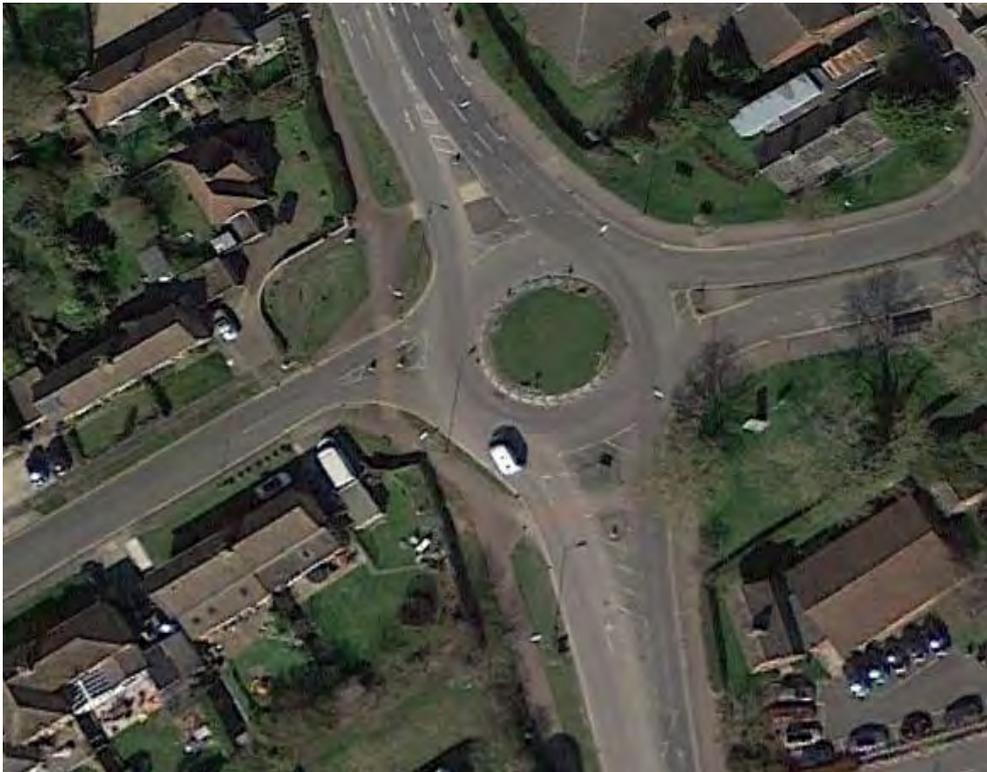
Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

This junction operates with a significant amount of spare capacity with a maximum RFC of 0.15.

No works to this junction are therefore proposed as the operation is acceptable with standalone and cumulative development.

Junctions 60 & 61 - Lower Road / Churchill Avenue & Lower Road / Hospital Access





The Lower Road/Churchill Avenue and Lower Road/Hospital Access junctions are both 4 arm roundabouts. As the two junctions exhibit an interaction with one another they have been modelled as linked junctions so that their interaction with one another can be fully understood and assessed. This approach is consistent with that adopted and agreed in the 2017 assessment.

The junctions have been modelled using standard ARCADY methods and using the lane simulation option, to assess the impact of unequal lane usage. Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The results of the both the standard Arcady and lane simulation assessments are copied below in tables 4.45 and 4.46 respectively.

Table 4.45 – Junction 60 & 61 – Lower Road/Churchill Avenue & Lower Road/Hospital Access – Existing Configuration – Standard

Approach	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2036 Do Minimum						
Lower Road / Churchill Avenue Roundabout						
Mandeville Road	15	68	0.96	1	6	0.51
Stadium Approach	98	5999999	9999999	0	16	0.27
Lower Road (S)	2	5	0.60	23	53	0.97
Churchill Avenue (W)	6	17	0.86	2	7	0.60
Junction Delay (s)	1759069.27			30.74		
Lower Road / Hospital Roundabout						
Winterton Drive	1	24	0.38	3	200	0.78
Lower Road (N)	194	363	1.12	1	4	0.53
Hospital Access (E)	0	8	0.24	1	7	0.52
Lower Road (S)	7	19	0.87	167	446	1.13
Junction Delay (s)	210.47			210.65		
2036 Do Something (HF)						
Lower Road / Churchill Avenue Roundabout						
Mandeville Road	209	881	1.29	2	9	0.67
Stadium Approach	96	599999	9999999	1	34	0.42
Lower Road (S)	2	6	0.66	14	33	0.94
Churchill Avenue (W)	37	87	1.00	2	8	0.68
Junction Delay (S)	1526207.07			20.45		
Lower Road / Hospital Roundabout						
Winterton Drive	1	37	0.48	1	95	0.60
Lower Road (N)	350	649	1.21	2	6	0.68
Hospital Access(E)	0	8	0.25	1	8	0.49
Lower Road (S)	14	39	0.94	151	383	1.11
Junction Delay (s)	379.88			174.64		
2036 Do Cumulative 1 (HF+AW)						
Lower Road / Churchill Avenue Roundabout						
Mandeville Road	2	13	0.69	1	6	0.45
Stadium Approach	47	6596	3.14	0	21	0.25
Lower Road (S)	2	6	0.64	6	16	0.87
Churchill Avenue (W)	4	12	0.81	3	8	0.70
Junction Delay (s)	164.04			11.68		
Lower Road / Hospital Roundabout						
Winterton Drive	0	32	0.26	1	56	0.43
Lower Road (N)	58	121	1.02	2	6	0.66
Hospital Access (E)	0	7	0.17	1	7	0.46
Lower Road (S)	135	297	1.08	447	1044	1.33
Junction Delay (s)	198.76			537.58		
2036 Do Cumulative 2 (Reg 22)						
Lower Road / Churchill Avenue Roundabout						
Mandeville Road	3	13	0.71	1	6	0.49
Stadium Approach	40	2862	1.91	0	16	0.21
Lower Road (S)	1	4	0.52	5	13	0.84
Churchill Avenue (W)	4	10	0.78	1	6	0.59
Junction Delay (S)	95.72			9.57		
Lower Road / Hospital Roundabout						
Winterton Drive	0	18	0.19	1	57	0.46
Lower Road (N)	38	84	1.00	1	5	0.58
Hospital Access (E)	0	8	0.22	0	5	0.31
Lower Road (S)	6	18	0.87	54	139	1.02
Junction Delay (s)	53.08			71.60		

Table 4.46 – Junction 60 & 61 – Lower Road/Churchill Avenue & Lower Road/Hospital Access – Existing Configuration – Lane Simulation

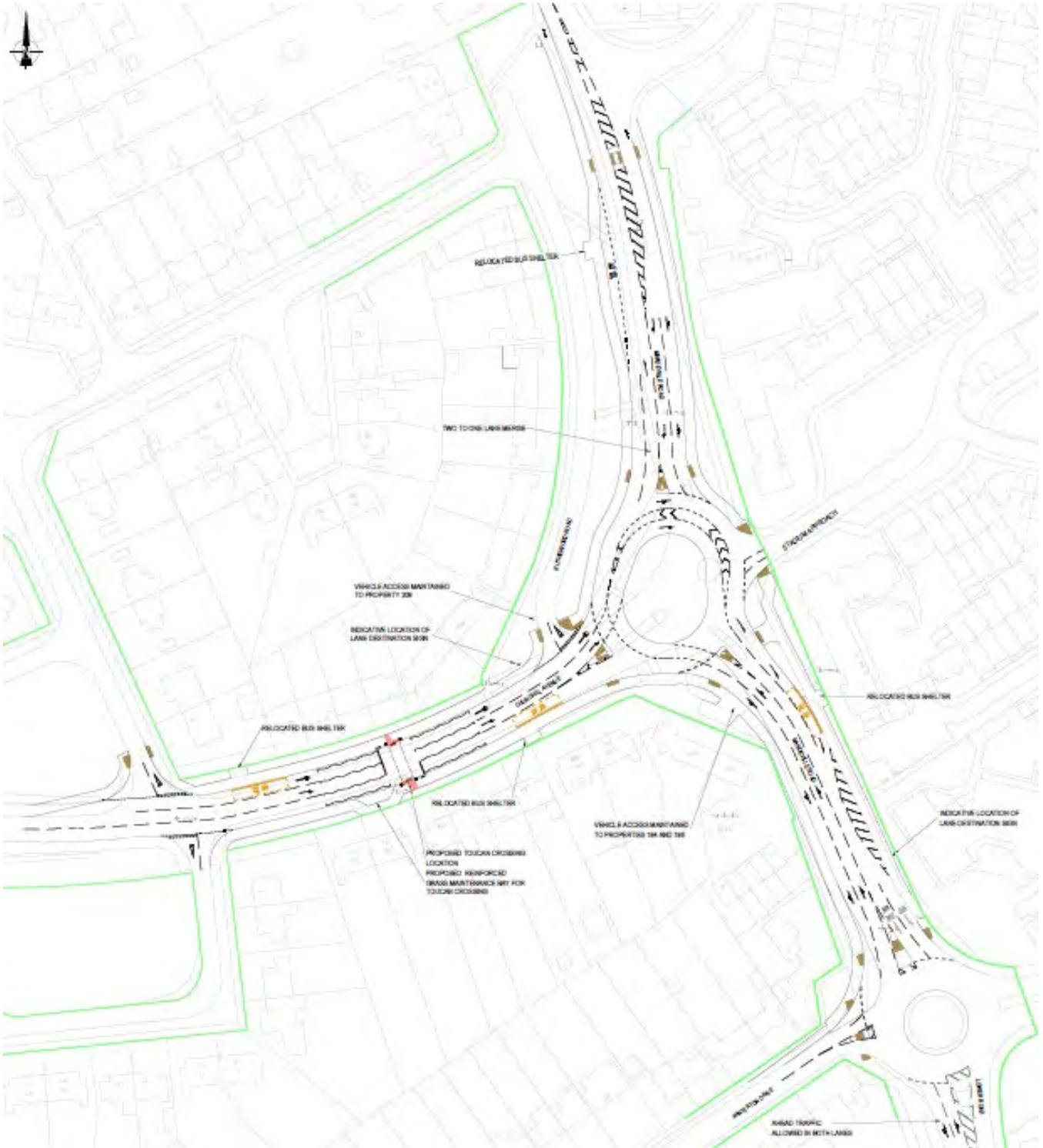
	AM		PM	
Approach	Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
2036 Do Minimum				
Lower Road / Churchill Avenue Roundabout				
Mandeville Road	313	1186	33	148
Stadium Approach	1	18	0	13
Lower Road (S)	3	19	8	19
Churchill Avenue (W)	724	1754	33	124
Junction Delay (S)	1065.33		81.27	
Lower Road / Hospital Roundabout				
Winterton Drive	1	15	0	15
Lower Road (N)	11	40	10	39
Hospital Access (E)	1	8	18	98
Lower Road (S)	256	638	689	1709
Junction Delay (s)	340.50		825.48	
2036 Do Something (HF)				
Lower Road / Churchill Avenue Roundabout				
Mandeville Road	449	1551	204	796
Stadium Approach	0	18	0	14
Lower Road (S)	2	9	4	14
Churchill Avenue (W)	852	1879	162	546
Junction Delay (S)	348.67		399.53	
Lower Road / Hospital Roundabout				
Winterton Drive	0	14	0	12
Lower Road (N)	11	40	11	39
Hospital Access (E)	0	9	3	25
Lower Road (S)	381	857	709	1689
Junction Delay (s)	468.77		838.26	
2036 Do Cumulative 1 (HF+AW)				
Lower Road / Churchill Avenue Roundabout				
Mandeville Road	123	605	7	41
Stadium Approach	0	13	0	13
Lower Road (S)	3	10	4	15
Churchill Avenue (W)	621	1651	212	620
Junction Delay (S)	885.17		264.14	
Lower Road / Hospital Roundabout				
Winterton Drive	0	13	0	12
Hospital Access (E)	0	8	2	12
Lower Road (S)	556	1110	1033	1769
Junction Delay (s)	659.65		967.19	
2036 Do Cumulative 2 (Reg 22)				
Lower Road / Churchill Avenue Roundabout				
Mandeville Road	192	830	29	140
Stadium Approach	0	13	0	12
Lower Road (S)	2	8	3	11
Churchill Avenue (W)	583	1657	34	125
Junction Delay (S)	911.91		80.10	
Lower Road / Hospital Roundabout				
Winterton Drive	0	15	0	12
Lower Road (N)	11	43	10	37
Hospital Access (E)	0	8	1	12
Lower Road (S)	141	355	581	1395
Junction Delay (s)	206.96		713.10	

The assessments both concluded that the junctions would operate better in the 2036 Do Cumulative 2 scenario when compared to the 2036 Do Minimum scenario. This is because the level of traffic through the junctions is forecast to reduce in the 2036 Do Cumulative scenario due to the addition of the South West Link Road (SWLR) as part of the South West Aylesbury planning application. Therefore, no mitigation is considered necessary for 2036 Do Cumulative 2 scenario.

The standard ARCADY assessment indicates that the Lower Road / Churchill Avenue roundabout junction would experience increased congestion in the AM peak hour on the Mandeville Road and Lower Road arms in the 2036 Do Something scenario when compared to Do Minimum. Overall junction delay is also shown to increase on the Lower Road / Hospital roundabout junction in the AM peak. The lane simulation results show significant increases in queues and delay in both the AM and PM peaks on the Lower Road / Churchill Avenue roundabout on both Mandeville Road and Churchill Avenue. This is also the case at the Lower Road / Hospital roundabout in the AM peak hour, when a significant increase in queues and delay are seen on Lower Road.

The standard ARCADY assessment forecasts the 2036 Do Cumulative 1 to operate with significant betterment in the AM peak, although there would be a deterioration in conditions in the PM peak when compared to the 2036 Do Minimum scenario (Lower Road / Hospital roundabout). The lane simulation results also forecast the Hospital Roundabout to operate worse than the 2036 Do Minimum scenario in the AM peak hour, with both roundabouts operating worse in the PM peak hour.

As part of the previous technical work in 2017, mitigation through a financial contribution was agreed for this junction for the joint cumulative scenario (2036 Do Cumulative 1). The mitigation was shown on PBA drawing 32113/5511/004, an extract of which is shown below.



For the northern roundabout, the design includes two right turn lanes on Churchill Avenue and two ahead lanes on Lower Road (south). The B4443 Lower Road (south) entry arm arrangement currently has a separate ahead and right turn lane, and the proposed changes are to introduce two ahead lanes with only minor physical alterations to the junction.

The proposed mitigation scheme has also been assessed using the standard ARCADY methods and lane simulation. The results are copied below in tables 4.47 and 4.48 respectively.

Table 4.47 – Junction 60 & 61 – Lower Road/Churchill Avenue & Lower Road/Hospital Access – Proposed Configuration – Standard

Approach	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2036 Do Minimum – Existing layout						
Lower Road / Churchill Avenue Roundabout						
Mandeville Road	15	68	0.96	1	6	0.51
Stadium Approach	98	5999999	9999999	0	16	0.27
Lower Road (S)	2	5	0.60	23	53	0.97
Churchill Avenue (W)	6	17	0.66	2	7	0.60
Junction Delay (s)	1759069.27			30.74		
Lower Road / Hospital Roundabout						
Winterton Drive	1	24	0.38	3	200	0.78
Lower Road (N)	194	363	1.12	1	4	0.53
Hospital Access (E)	0	8	0.24	1	7	0.52
Lower Road (S)	7	19	0.87	167	446	1.13
Junction Delay (s)	210.47			210.65		
2036 Do Something (HF) – Mitigated Layout						
Lower Road / Churchill Avenue Roundabout						
Mandeville Road	108	406	1.13	2	7	0.60
Stadium Approach	96	599999	99999	0	11	0.19
Lower Road (S)	1	4	0.57	4	9	0.80
Churchill Avenue (W)	36	86	1.00	2	8	0.68
Junction Delay (S)	1526087.34			8.38		
Lower Road / Hospital Roundabout						
Winterton Drive	0	10	0.20	0	13	0.16
Lower Road (N)	232	384	1.13	2	4	0.61
Hospital Access (E)	1	12	0.32	1	8	0.49
Lower Road (S)	15	41	0.95	151	383	1.11
Junction Delay (s)	234.73			172.58		
2036 Do Cumulative 1 (HF+AW) – Mitigated Layout						
Lower Road / Churchill Avenue Roundabout						
Mandeville Road	2	9	0.61	1	5	0.41
Stadium Approach	1	24	0.33	0	9	0.12
Lower Road (S)	1	4	0.56	3	7	0.74
Churchill Avenue (W)	4	12	0.81	2	8	0.70
Junction Delay (s)	9.01			6.95		
Lower Road / Hospital Roundabout						
Winterton Drive	0	10	0.10	0	12	0.13
Lower Road (N)	9	21	0.91	1	4	0.59
Hospital Access (E)	0	7	0.18	1	7	0.46
Lower Road (S)	136	299	1.08	447	1044	1.33
Junction Delay (s)	149.67			536.46		

Table 4.48 – Junction 60 & 61 – Lower Road/Churchill Avenue & Lower Road/Hospital Access – Proposed Configuration – Lane Simulation

	AM		PM	
Approach	Queue (PCU)	Delay (s)	Queue (PCU)	Delay (s)
2036 Do Minimum – Existing Layout				
Lower Road / Churchill Avenue Roundabout				
Mandeville Road	319	1221	37	168
Stadium Approach	1	16	0	13
Lower Road (S)	2	9	6	19
Churchill Avenue (W)	717	1749	33	121
Junction Delay (S)	1072.49		85.27	
Lower Road / Hospital Roundabout				
Winterton Drive	1	15	0	15
Lower Road (N)	11	40	11	40
Hospital Access (E)	0	9	17	98
Lower Road (S)	256	652	690	1708
Junction Delay (s)	348.67		828.47	
2036 Do Something (HF) – Mitigated Layout				
Lower Road / Churchill Avenue Roundabout				
Mandeville Road	576	1818	248	961
Stadium Approach	0	16	0	13
Lower Road (S)	3	8	10	23
Churchill Avenue (W)	756	1854	30	102
Junction Delay (S)	1145.79		265.40	
Lower Road / Hospital Roundabout				
Winterton Drive	1	22	1	28
Lower Road (N)	5	17	5	16
Hospital Access (E)	0	9	6	44
Lower Road (S)	26	64	207	469
Junction Delay (s)	40.90		233.32	
2036 Do Cumulative 1 (HF+AW) – Mitigated Layout				
Lower Road / Churchill Avenue Roundabout				
Mandeville Road	255	1341	38	225
Stadium Approach	0	14	0	15
Lower Road (S)	3	10	11	28
Churchill Avenue (W)	446	1122	86	249
Junction Delay (S)	743.73		136.12	
Lower Road / Hospital Roundabout				
Winterton Drive	0	19	0	22
Lower Road (N)	5	17	5	15
Hospital Access (E)	0	9	3	17
Lower Road (S)	197	398	549	952
Junction Delay (s)	234.03		509.13	

The results of both assessments for the 2036 Do Something scenario show that queues and delay would be redistributed across the junctions when compared to the 2036 Do Minimum, but overall there would be marginal change to the operation of both junctions combined.

In the 2036 Do Cumulative 1 scenario the results of the standard assessment show that the operation of the junctions improve in the AM peak hour with the proposed mitigation scheme, although the Lower Road / Hospital roundabout junction would worsen in the PM peak.

The results of the lane simulation assessment show that the junctions overall would improve in the 2036 Do Cumulative 1 scenario in both the AM and PM peak hours when compared to the 2036 Do Minimum scenario.

In summary, the proposed improvements continue to offset the impacts of the 2036 Do Something and Do Cumulative 1 scenarios. However, should the SWRR come forward (cumulative 2) then it is accepted that the mitigation scheme is not required and it is agreed that the funds will be diverted to the advancement of the link roads.

Junction 62 - Churchill Avenue / Ellen Road

This is a 3 arm roundabout junction and has been modelled with the Arcady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

This junction is predicted to operate within capacity in all scenarios. The 2036 Do Cumulative 2 scenario shows an improvement compared to the 2036 Do Minimum scenario which is the result of the proposed South West Aylesbury Link Road.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 64 – Ellen Road / Anton Way

This is a 3 arm roundabout junction and has been modelled with the Arcady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

This junction operates within capacity in all scenarios. The 2036 Do Cumulative 2 scenario shows an improvement compared to the 2036 Do Minimum scenario which is the result of the proposed South West Aylesbury Link Road.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 66 – Ellen Road / A418 / Thame Road

This is a 4 arm roundabout junction and has been modelled with the Arcady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

This junction operates within capacity in all scenarios with a maximum RFC of 0.81 in the 2036 Do Minimum and Do Something scenarios in the PM peak. The 2036 Do Cumulative 2 scenario shows a slight improvement compared to the 2036 Do Minimum scenario which is the result of the proposed South West Aylesbury Link Road.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 67 - A418 / Churchill Avenue



This junction is a signalised crossroad junction. It has been modelled with the LinSig modelling programme and the geometry and flows have been checked and are correct. Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The results show that the junction performance would improve in the 2036 Do Cumulative 2 scenario when compared to 2036 Do Minimum. However in the 2036 Do Cumulative 1 scenario, capacity and queue lengths worsen slightly in the PM peak hour on some arms.

Table 4.52 – Junction 67 – A418 / Churchill Avenue – Existing Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 Minimum					
1/2+1/1	Oxford Road (N) Left Ahead	109.5%	38	100.4%	30
1/3+1/4	Oxford Road (N) Ahead Right	106.3%	36	100.7%	33
2/1+2/2	Churchill Avenue (E) Left Ahead	110.2%	63	98.5%	22
3/2+3/1	Oxford Road (S) Ahead Left	100.9%	30	80.9%	15
4/2+4/1	Fowler Road (W) Left Ahead Right	106.8%	39	97.3%	20
PRC (%)		-22.4%		-11.8%	
Cycle Time (s)		120		120	
2036 Do Cumulative 1 (HF+AW)					
1/2+1/1	Oxford Road (N) Left Ahead	76.7%	10	103.3%	41
1/3+1/4	Oxford Road (N) Ahead Right	87.5%	12	86.5%	14
2/1+2/2	Churchill Avenue (E) Left Ahead	101.8%	35	102.1%	26
3/2+3/1	Oxford Road (S) Ahead Left	101.6%	32	64.6%	10
4/2+4/1	Fowler Road (W) Left Ahead Right	102.8%	31	104.2%	29
PRC (%)		-14.2%		-15.8%	
Cycle Time (s)		120		120	
2036 Do Cumulative 2 (Reg 22)					
1/2+1/1	Oxford Road (N) Left Ahead	89.1%	15	100.5%	37
1/3+1/4	Oxford Road (N) Ahead Right	85.4%	14	78.5%	15
2/1+2/2	Churchill Avenue (E) Left Ahead	101.3%	31	99.8%	20
3/2+3/1	Oxford Road (S) Ahead Left	100.6%	32	72.6%	12
4/2+4/1	Fowler Road (W) Left Ahead Right	102.2%	29	98.4%	20
PRC (%)		-13.6%		-11.7%	
Cycle Time (s)		120		120	

It is acknowledged that Do Cumulative 2 is the more likely cumulative scenario as it takes into account all current live planning applications for strategic development. The main purpose of the 2036 Do Cumulative 1 scenario is to allow a direct comparison against the 2016 TA junction cumulative assessments. The scenario is unlikely to exist in reality, and would only be an interim scenario in any event. The operation of the junction is therefore deemed to be acceptable with standalone and cumulative development, without the need for any mitigation scheme.

Junction 72 – A418 / Coldharbour Way



The A418/Coldharbour Way junction is currently a 3 arm roundabout, but it will become a 4 arm roundabout with the proposed South West Link Road (SWLR) which is being proposed as part of the South West Aylesbury Development that is currently subject to a live planning application. The proposed design including the SWLR is indicated on PFA Consulting Drawing G250-55-Rev A contained in Appendix D and reproduced below.



However, the applicants for that site are in the process of updating their strategic modelling and as such the layout of this junction will need to be retested and the design changed to reflect the updated traffic demands. As that has not yet happened the applicants for Hampden Fields can only test the previous design that was available in the public domain

The flows in the Hampden Fields models have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.53 – Junction 72 – A418 / Coldharbour Way – Existing & Proposed Configurations

Approach	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2036 Do Minimum						
A418 (NW)	171	511	1.26	122	390	1.19
A418 (NE)	121	286	1.15	22	55	0.98
SWLR (S)	NOT OPEN IN THIS SCENARIO					
A418 (SW)	72	139	1.08	235	554	1.29
Junction Delay (s)	303.33			349.40		
2036 Do Cumulative 1 (HF+AW)						
A418 (NW)	154	482	1.26	110	344	1.17
A418 (NE)	126	303	1.16	41	90	1.03
SWLR (S)	NOT OPEN IN THIS SCENARIO					
A418 (SW)	45	94	1.03	187	439	1.23
Junction Delay (s)	283.38			287.47		
2036 Do Cumulative 2 (Reg 22)						
A418 (NW)	263	762	1.38	573	2170	1.95
A418 (NE)	59	133	1.07	2	9	0.70
SWLR (S)	264	897	1.43	311	831	1.42
A418 (SW)	1	4	0.51	5	12	0.84
Junction Delay (s)	472.03			810.14		

The results show that the existing roundabout in 2036 Do Minimum is forecast to be substantially over-capacity in both peak hours. The existing roundabout in 2036 Do Cumulative 1 is forecast to improve in both peaks, with overall junction delay reduced, except for the A418 (NE) entry arm in the PM peak which marginally worsens.

The proposed 4 arm roundabout with the SWRR in 2036 Do Cumulative 2 is forecast to operate significantly over capacity in both peaks. The operation of the roundabout has worsened compared to the 2036 Do Minimum scenario.

This junction has been assessed for completeness. The junction design will need to be updated by the SW Aylesbury development to accommodate all traffic demands arising from the VALP cumulative test, given that it forms the main point of access to their development site. Mitigation by the applicant for this application is therefore not required.

Junction 77 - Wendover Road / Eascote Road



This junction is a 3 arm priority junction with a ghost island right turn lane off the main A413 Wendover Road arm. It has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct. Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

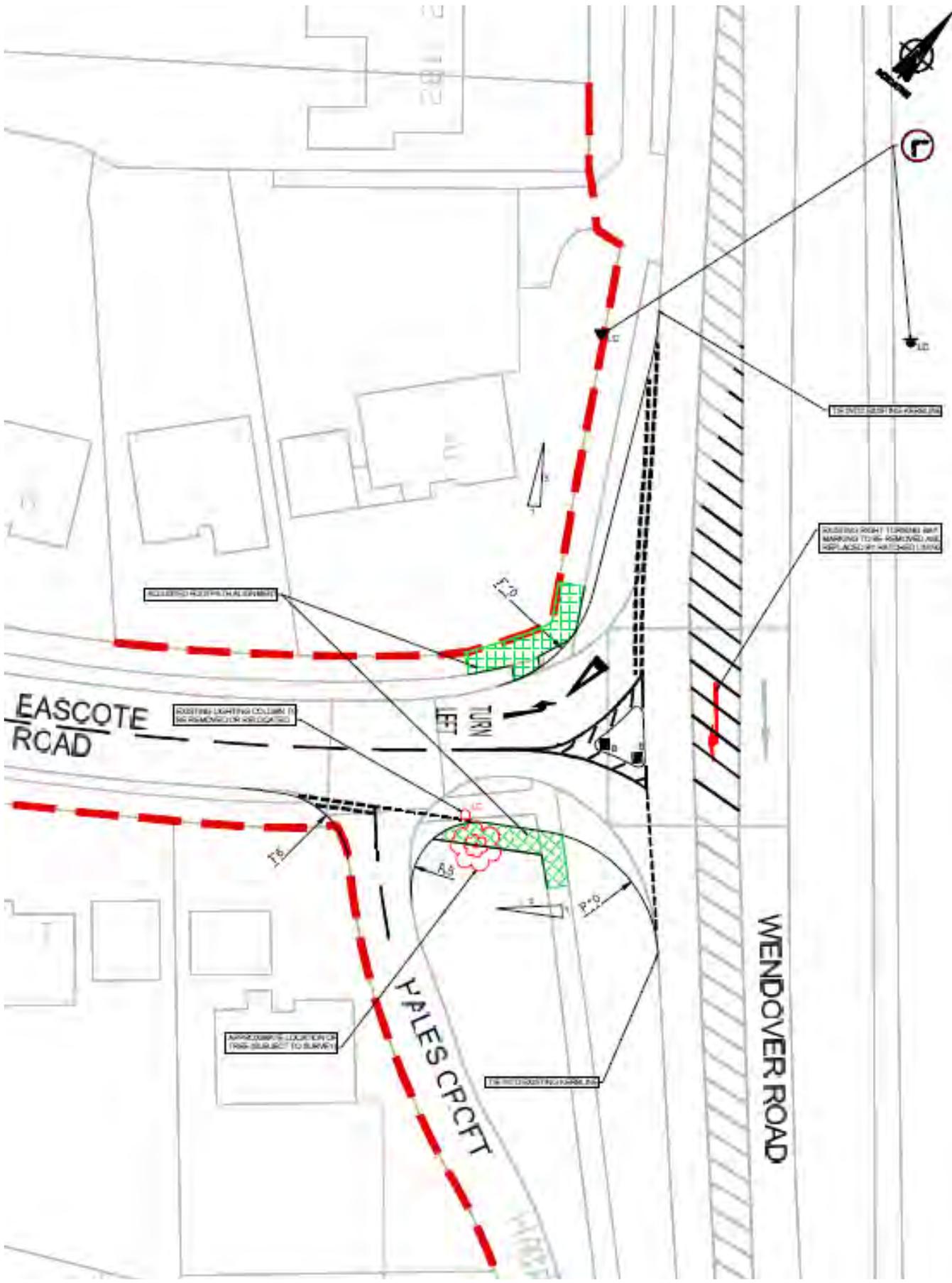
- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The results, extracted below, for the 2036 Do Minimum scenario indicate that the junction is expected to exceed capacity during both the AM and PM peak hours, with significant queuing predicted to form along Eascote Road, the minor arm. The results for the 2036 Do Something, 2036 Do Cumulative 1 and 2036 Do Cumulative 2 scenarios predict a further deterioration of junction performance, with increased queuing on Eascote Road.

Table 4.54 – Junction 77 – Wendover Road / Eascote Road – Existing Configuration

Stream	Movement	AM			PM		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum							
Stream B-C	Eascote Rd – Wendover Rd (N)	176	59999	99999	59	996	1.29
Stream B-A	Eascote Rd – Wendover Rd (S)	200	59999	99999	0	0	0.00
Stream C-AB	Wendover Rd (S)/Eascote Rd	0	11	0.10	1	18	0.33
Junction Delay (s)		6774817.45			76.20		
2036 Do Something (HF)							
Stream B-C	Eascote Rd – Wendover Rd (N)	16	35492	11.47	32	59999	99999
Stream B-A	Eascote Rd – Wendover Rd (S)	235	33181	11.48	261	59999	99999
Stream C-AB	Wendover Rd (S)/Eascote Rd	0	11	0.01	0	20	0.28
Junction Delay (s)		3136.64			5265817.34		
2036 Do Cumulative 1 (HF + AW)							
Stream B-C	Eascote Rd – Wendover Rd (N)	28	59999	99999	11	59999	99999
Stream B-A	Eascote Rd – Wendover Rd (S)	496	59999	99999	340	59999	99999
Stream C-AB	Wendover Rd (S)/Eascote Rd	0	14	0.01	0	20	0.04
Junction Delay (s)		9210550.46			6051892.04		
2036 Do Cumulative 2 (Reg 22)							
Stream B-C	Eascote Rd – Wendover Rd (N)	19	59999	99999	12	59999	99999
Stream B-A	Eascote Rd – Wendover Rd (S)	374	59999	99999	339	59999	99999
Stream C-AB	Wendover Rd (S)/Eascote Rd	0	13	0.01	0	17	0.04
Junction Delay (s)		7504128.08			6292985.40		

The Transport Assessment submitted as part of the SEALR planning application (currently awaiting determination) has proposed an alternative junction arrangement to provide a left-in and left-out only configuration which prevents right turn movements. This arrangement is illustrated on AECOM Drawing 60535364-SKE-C-0019-A, an extract of which is shown below.



Whilst the proposed junction arrangement reduces queuing at the junction compared to the existing junction arrangement, there remains significant queuing on the side road in all scenarios, as shown in the results extracted below.

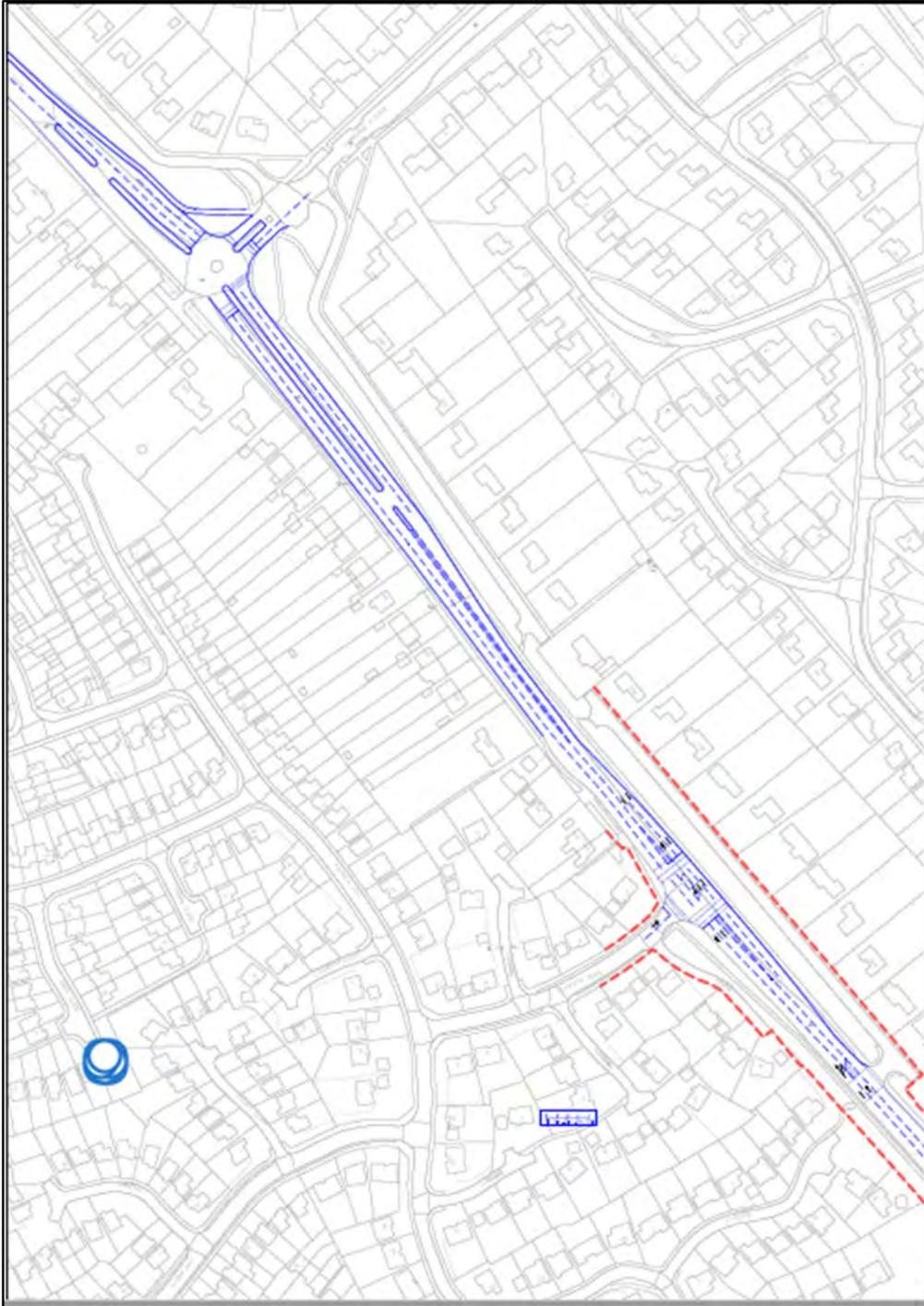
Table 4.55 – Junction 77 – Wendover Road / Eascote Road – Proposed Configuration (SEALR TA)

Stream	Movement	AM			PM		
		Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Something (HF)							
Stream B-C	Eascote Rd – Wendover Rd (N)	3	40	0.75	102	1693	1.52
Stream B-A	Eascote Rd – Wendover Rd (S)	0	0	0.00	0	0	0.00
Stream C-B	Wendover Rd (N) –/Eascote Rd	0	0	0.00	0	0	0.00
Junction Delay (s)		3.76			148.55		
2036 Do Cumulative 1 (HF + AW)							
Stream B-C	Eascote Rd – Wendover Rd (N)	308	4764	2.50	184	3460	2.08
Stream B-A	Eascote Rd – Wendover Rd (S)	0	0	0.00	0	0	0.00
Stream C-B	Wendover Rd (N) –/Eascote Rd	0	0	0.00	0	0	0.00
Junction Delay (s)		731.64			349.02		
2036 Do Cumulative 2 (Reg 22)							
Stream B-C	Eascote Rd – Wendover Rd (N)	168	2350	1.73	157	2556	1.80
Stream B-A	Eascote Rd – Wendover Rd (S)	0	0	0.00	0	0	0.00
Stream C-B	Wendover Rd (N) –/Eascote Rd	0	0	0.00	0	0	0.00
Junction Delay (s)		293.87			268.09		

The applicant suggests that this situation is unlikely to occur because such delays are likely to encourage drivers to seek existing alternative routes that are available to exit the housing area which Eascote Road serves. On balance, there is an overall improvement in queue lengths across both the peak hours. It is also noted that the restriction of the right turn movement would present a significant road safety improvement at this junction.

Buckinghamshire Council are also considering the potential for a signalised junction arrangement to be delivered at this junction as part of the SEALR proposals, in tandem with the signalisation of the Camborne Avenue / A413 Wendover Road junction.

The SEALR Transport Assessment has presented an indicative preliminary design for the linked signalised junctions. An extract of the potential junction drawing is shown below.



The applicants for SEALR have assessed the junction using the 2036 Do Something flows (which are the same as the Hampden Fields Do Cumulative 3 assessment), as shown below.

Table 32 – Junction 7 & 24: A413 Wendover Road / Camborne Avenue signalised three-arm junction and A413 / Eascote Road three-arm junction

Scenario	Junction 7				Junction 24			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Max DoS	Max Q	Max DoS	Max Q	Max DoS	Max Q	Max DoS	Max Q
2036 Do Nothing	77.5%	16.2	83.9%	21.6	73.0%	16.7	71.3%	15.0
2036 Do Something	85.8%	24.4	83.6%	20.8	87.5%	23.0	88.7%	24.4

The results illustrate that the indicative preliminary signalised junction design would be sufficient to cater for the level of traffic identified for the 2036 Do Cumulative 3 scenario and would therefore be an adequate mitigation should traffic flows reach the levels identified for 2036.

The delivery of any such scheme will be linked to a manage and monitor regime which is to be secured through an appropriate S106 Obligation, given that the justification for the scheme is a prediction arising from the revised model, rather than something that may be required.

As a result, it is considered that the proposed left-in/left-out arrangement is suitable to ensure the continued safe operation of the junction, but that a commitment to monitor and manage the performance of the junction is required. The junction will be monitored by BC, so a contingent financial contribution would need to be secured to fund the more comprehensive works at the junction in the event that they are required to mitigate the developments impact.

Junction 80 - A413 Wendover Road / Wendover Way mini roundabout



This junction takes the form of a mini roundabout. The junction has been modelled with the Arcady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.56 shows that the junction operates above theoretical capacity in the 2036 Do Minimum scenario with an RFC of 1.21 in the AM and an estimated queue of c271 vehicles. In the PM the RFC is 1.28 with an estimated queue length of c382 vehicles.

In the 2036 Do Something scenario with just Hampden Fields, the operation of the junction improves slightly with the RFC reducing to 1.15 and an estimated queue length of c188 vehicles. In the PM this reduces to an RFC of 1.19 with an estimated queue length of c213 vehicles.

The 2036 Do Cumulative 2 scenario shows further improvements with the RFC reducing to 1.09 and an estimated queue length of c108 vehicles, which is a reduction of c163 vehicles. In the PM the RFC reduces to 1.12 with an estimated queue length of c136 vehicles, a reduction of c246 vehicles.

It can be concluded that the junction performs better in all 2036 Do Something scenarios compared to the 2036 Do Minimum scenario, with cumulative scenarios performing significantly better. The development does not worsen the operation of the junction and there is therefore no basis for a requirement for mitigation to this junction.

No works to this junction are therefore proposed as the operation is acceptable with cumulative development.

Table 4.56 – Junction 80 – Wendover Road / Wendover Way – Existing Configuration

	AM			PM		
Approach	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum						
1 - Wendover Road South	271	675	1.21	382	894	1.28
2 - Wendover Road North	80	258	1.07	258	785	1.24
3 - Wendover Way	72	624	1.19	26	242	1.03
Junction Delay (s)	516.39			777.74		
2036 Do Something (HF)						
1 - Wendover Road South	188	488	1.15	195	481	1.14
2 - Wendover Road North	46	158	1.02	213	612	1.19
3 - Wendover Way	5	59	0.86	10	110	0.93
Junction Delay (s)	312.57			487.19		
2036 Do Cumulative 1 (HF + AW)						
1 - Wendover Road South	108	283	1.08	4.3	14	0.82
2 - Wendover Road North	30	112	1.00	100	296	1.08
3 - Wendover Way	7	68	0.89	2	31	0.64
Junction Delay (s)	190.79			148.60		
2036 Do Cumulative 2 (Reg 22)						
1 - Wendover Road South	100	267	1.07	4.3	14	0.82
2 - Wendover Road North	13	53	0.94	136	414	1.12
3 - Wendover Way	26	200	1.02	5	62	0.85
Junction Delay (s)	183.50			203.89		

Junction 82 - Walton Road / Turnfurlong / Highbridge Road



This junction is a simple priority crossroads junction and has been modelled with the Picady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.57 shows that the junction operates above theoretical capacity in the 2036 Do Minimum scenario with an RFC of 1.96 in the AM and an estimated queue of c168 vehicles. In the PM the junction operates just below theoretical capacity with an RFC is 0.97 and an estimated queue length of c10 vehicles.

In the 2036 Do Cumulative 1 scenario, the operation of the junction improves significantly in the AM Peak with the RFC reducing to 1.05 and an estimated queue length of c15 vehicles. However, in the PM the RFC increases to 1.34 with an estimated queue length of c58 vehicles.

In the 2036 Do Cumulative 2 scenario, the operation of the junction is improved compared to the 2036 Do Minimum scenario with the RFC reducing to 1.26 and an estimated queue length of c41 vehicles, which is a reduction of c127 vehicles. In the PM the highest RFC remains at 0.97 with an estimated queue length of c10 vehicles.

It can be concluded that there is generally an improvement in the operation of the junction in the cumulative scenarios when compared to the 2036 Do Minimum scenario, with the exception of the Do Cumulative 1 scenario PM.

As stated elsewhere in this response, the Cumulative 1 scenario is a tool to allow the applicants a direct comparison against the 2016 TA junction assessments and formed the cumulative assessment at that time. A number of other strategic applications have since been submitted that remain in the planning system and as such the updated cumulative position is that shown in Cumulative 2. Junction capacity does not worsen in the cumulative 2 scenario and no assessment was required to deal with standalone impacts. As such the impacts of Hampden Fields at this junction is considered acceptable.

Table 4.57 – Junction 82 – Walton Road / Turnfurlong – Existing Configuration

Stream	Movement	AM			PM		
		Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2036 Do Minimum							
B-ACD	Turnfurlong (E)	168	1686	1.96	10	129	0.97
A-BC	Walton Road (E) – Turnfurlong (S) and Walton Road (W)	1	7	0.29	1	7	0.36
A-D	Walton Road (E) – Highbridge Road (N)	0	7	0.30	0	7	0.36
D-ABC	Highbridge Road (N)	1	41	0.59	1	17	0.33
C-ABD	Walton Road (W)	2	11	0.59	1	6	0.22
Junction Delay (s)		498.26			30.44		
2036 Do Cumulative 1 (HF+AW)							
B-ACD	Turnfurlong (E)	15	201	1.05	58	611	1.34
A-BC	Walton Road (E) – Turnfurlong (S) and Walton Road (W)	1	7	0.34	1	3	0.33
A-D	Walton Road (E) – Highbridge Road (N)	0	7	0.34	0	0	0.00
D-ABC	Highbridge Road (N)	1	23	0.47	0	15	0.30
C-ABD	Walton Road (W)	1	10	0.48	1	8	0.33
Junction Delay (s)		43.24			169.98		
2036 Do Cumulative 2 (Reg 22)							
B-ACD	Turnfurlong (E)	41	434	1.26	10	123	0.97
A-BC	Walton Road (E) – Turnfurlong (S) and Walton Road (W)	1	7	0.30	1	3	0.29
A-D	Walton Road (E) – Highbridge Road (N)	0	7	0.31	0	0	0.00
D-ABC	Highbridge Road (N)	1	24	0.46	0	13	0.23
C-ABD	Walton Road (W)	1	10	0.49	1	8	0.35
Junction Delay (s)		103.79			31.98		

Junction 83 - A41 Friarage Road / Walton Street / Exchange Street

This junction takes the form of a 3 arm roundabout. The junction has been modelled with the Arcady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 85 - Gatehouse Road / Gatehouse Way

This junction takes the form of a priority junction with a ghost island right turn lane. The junction has been modelled with the Picady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 86 - A418 Oxford Road / A41 Gatehouse Road



This is a 4 arm roundabout junction and has been modelled with the Arcady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.60 shows that in the 2036 Do Minimum, the existing roundabout is forecast to be over capacity in both peaks, with an RFC of 1.17 an estimated queue of c80 vehicles in the AM and an RFC of 1.34 an estimated queue of c180 vehicles in the PM.

In the 2036 Do Cumulative 1 scenario the junction continues to operate above theoretical capacity with an increase in the largest queue length of c18 vehicles in the AM peak and c21 vehicles in the PM peak. Overall junction delay has increases in the AM but reduces in the PM.

In the 2036 Do Cumulative 2 scenario the operation of the junction improves in the AM peak compared to 2036 Do Minimum. In the PM peak hour, there is an estimated increase in the queue on the A41 north arm of c35 vehicles, but the overall junction delay reduces by 36.1 seconds.

It can be concluded that the cumulative 2 scenario suggests that queues on some arms of the junctions improve and others worsen. However overall there is an improvement to junction delay. On balance the results of the cumulative 2 assessment are considered acceptable.

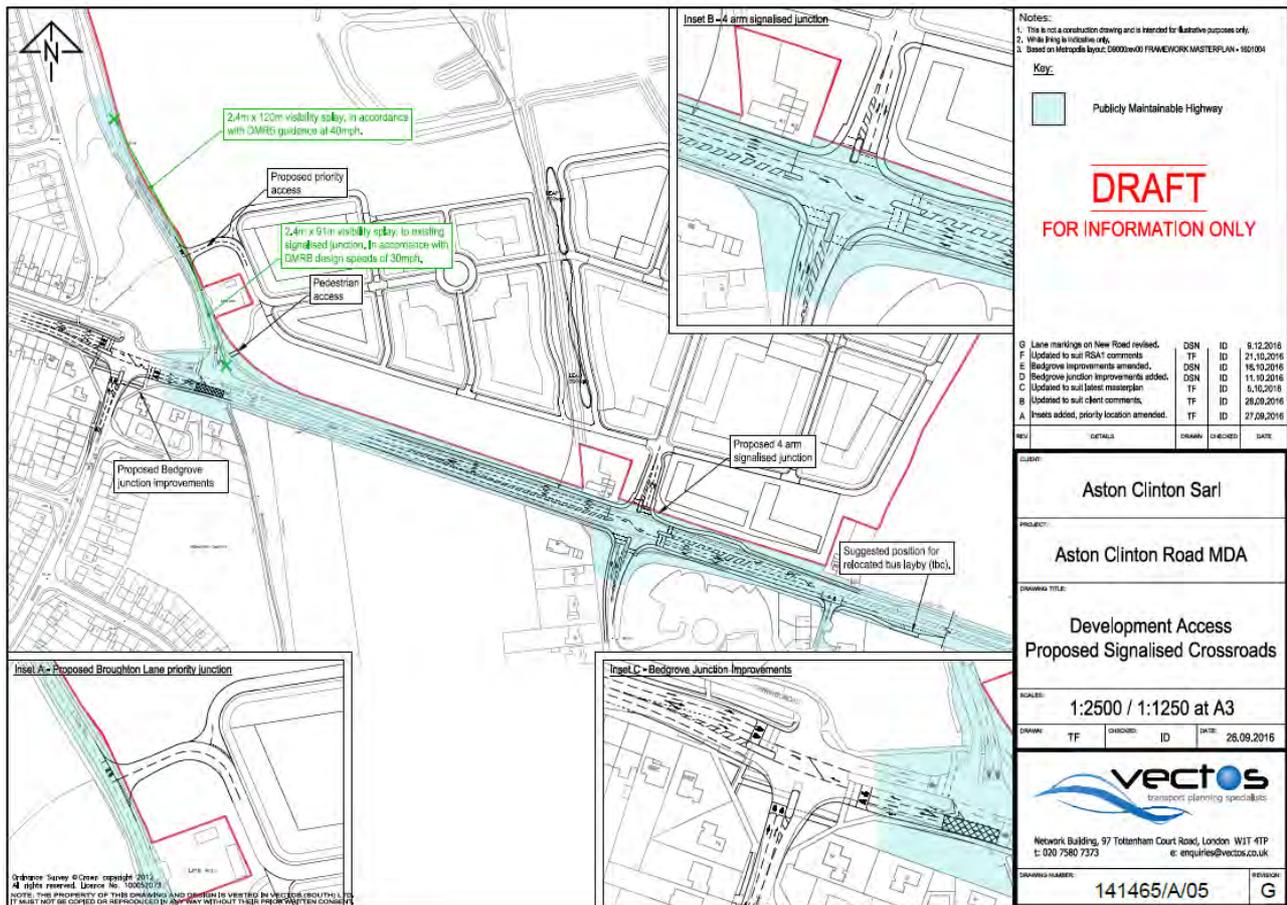
Table 4.60 – Junction 86 – A418 / Gatehouse Road – Existing Configuration

Approach	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2036 Do Minimum						
A41 (N)	21	63	0.99	148	473	1.26
A418 (E)	3	12	0.72	2	8	0.66
A41 (S)	80	260	1.17	180	651	1.34
A418 (W)	36	89	1.02	68	145	1.08
Junction Delay (s)	106.70			335.42		
2036 Do Cumulative 1 (HF+AW)						
A41 (N)	13	41	0.95	201	534	1.32
A418 (E)	3	11	0.73	1	7	0.59
A41 (S)	98	322	1.21	108	367	1.20
A418 (W)	28	73	1.00	19	53	0.98
Junction Delay (s)	119.30			284.95		
2036 Do Cumulative 2 (Reg 22)						
A41 (N)	8	27	0.90	215	584	1.35
A418 (E)	3	11	0.75	2	8	0.67
A41 (S)	80	284	1.19	111	421	1.23
A418 (W)	13	37	0.95	11	32	0.93
Junction Delay (s)	89.69			299.32		

Junction 98 –New Road / A41 Aston Clinton Road / MDA Access



This is a signal controlled crossroads junction providing access to the new MDA residential development as well as New Road. The layout of the junction is shown on Vectos Drawing 15-03806-AOP-141465-A-05-REV-G reproduced below.



The geometry and flows have been checked and a number of intergreens were missing as well as some flows were entered as vehicles rather than PCUS. These errors have been discussed and the model was amended and provided to us on the 8th January 2021.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The junction will be operating above theoretical capacity in the AM peak hour in 2036 Do Minimum scenario with a PRC of -4.9%. In the PM peak hour the junction approaches theoretical capacity with a PRC of 4.1%.

In the 2036 Do Something scenario the junction improves slightly in the AM peak hour to -3.8% PRC but worsens in the PM peak hour with the PRC reducing to -2.4%.

However, in the 2 Do Cumulative scenarios the operation of the junction will improve significantly due to the introduction of the partial orbital route with the PRC increasing to 35.1% in the Do Cumulative 2 AM and 44.5% in the Do Cumulative 2 PM.

It can be concluded that the standalone development traffic has minimal effect on the junction and with the Do Cumulative scenarios the operation of the junction improves significantly. No works to this junction are therefore proposed as the operation is acceptable with standalone and cumulative development.

Junction 99 - Walton Street Gyratory



The Walton Street Gyratory junction is a key junction in Aylesbury town centre. It is complex linked traffic signal-controlled junction with 4 main routes which join and circulate around a central area of residential and commercial properties.

The junction has been modelled with the LinSig modelling programme and the geometry and flows have been checked and are correct. Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The results of the assessment, as copied below, show that the operation of the Gyratory would improve in all 2036 scenarios with the addition of the development traffic. As such, no works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Table 4.62 – Junction 99 – Walton Street Gyratory – Existing Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 Do Minimum					
1/2+1/1	Walton Street Entry Ahead	96.6	26	112.4	102
1/3	Walton Street Entry Ahead	41.3	4	49.8	5
2/2+2/1	Walton Road Entry Left Ahead	88.9	10	86.4	8
3/1	Walton Road Entry Ahead	83.8	17	85.6	18
3/2	Walton Road Entry Ahead	47.1	6	40.3	5
4/1 + 4/2	Stoke Road Entry Left	150.5	287	123.4	140
9/1 + 9/2	Walton Street Stopline Right	92.0	11	87.4	8
10/1	Walton Road Stopline Left	33.6	2	25.7	2
10/2	Walton Road Stopline Ahead	96.8	28	105.7	62
10/3	Walton Road Stopline Right	38.6	5	47.6	7
11/1	Wendover Road Stopline Right	0.5	0	0.0	0
11/2	Wendover Road Stopline Right	69.5	9	73.0	9
12/2	Stoke Road Stopline Right	146.0	102	125.0	60
12/3	Stoke Road Stopline Right	146.8	105	125.8	62
13/1	Crown Court Entry Left Left2	18.6	0	19.2	0
15/1	Walton Street Connector Ahead Left	41.1	5	30.4	4
15/2	Walton Street Connector Ahead	31.6	4	43.3	5
15/3	Walton Street Connector Right	24.0	0	22.3	0
PRC Over All Lanes (%)		-67.2		-39.7	
Cycle Time (s)		64		64	
2036 Standalone (HF)					
1/2+1/1	Walton Street Entry Ahead	84.5	14	105.8	70
1/3	Walton Street Entry Ahead	47.8	5	51.3	5
2/2+2/1	Walton Road Entry Left Ahead	76.3	7	78.8	7
3/1	Walton Road Entry Ahead	77.1	14	82.4	16
3/2	Walton Road Entry Ahead	42.7	5	39.5	5
4/1 + 4/2	Stoke Road Entry Left	147.7	276	122.6	130
9/1 + 9/2	Walton Street Stopline Right	80.0	7	82.4	6
10/1	Walton Road Stopline Left	28.4	2	23.2	2
10/2	Walton Road Stopline Ahead	86.6	19	113.0	105
10/3	Walton Road Stopline Right	43.3	7	52.5	8
11/1	Wendover Road Stopline Right	20.6	1	13.7	1
11/2	Wendover Road Stopline Right	71.0	8	70.4	8
12/2	Stoke Road Stopline Right	143.9	91	113.6	41
12/3	Stoke Road Stopline Right	144.2	92	114.3	42
13/1	Crown Court Entry Left Left2	18.0	0	19.6	0
15/1	Walton Street Connector Ahead Left	28.0	4	33.3	5
15/2	Walton Street Connector Ahead	43.6	4	43.9	5
15/3	Walton Street Connector Right	22.4	0	19.9	0
PRC Over All Lanes (%)		-64.1		-36.3	
Cycle Time (s)		64		64	

2036 DC1 (HF+AW)				
1/2+1/1Walton Street Entry Ahead	82.3	13	107.3	77
1/3 Walton Street Entry Ahead	28.5	3	34.2	3
2/2+2/1Walton Road Entry Left Ahead	80.3	8	90.5	10
3/1 Walton Road Entry Ahead	62.7	9	56.7	8
3/2 Walton Road Entry Ahead	45.4	6	38.6	5
4/1 + 4/2 Stoke Road Entry Left	118.1	103	92.4	16
9/1 + 9/2 Walton Street Stopline Right	78.3	7	90.4	9
10/1 Walton Road Stopline Left	30.1	2	27.2	2
10/2 Walton Road Stopline Ahead	88.0	19	106.8	68
10/3 Walton Road Stopline Right	28.5	4	34.4	4
11/1 Wendover Road Stopline Right	0.0	0	0.0	0
11/2 Wendover Road Stopline Right	59.1	8	58.7	8
12/2 Stoke Road Stopline Right	114.6	48	82.1	10
12/3 Stoke Road Stopline Right	115.0	49	82.3	10
13/1 Crown Court Entry Left Left2	18.8	0	19.2	0
15/1 Walton Street Connector Ahead Left	36.9	6	36.6	5
15/2 Walton Street Connector Ahead	44.0	6	37.0	5
15/3 Walton Street Connector Right	20.4	0	0.0	0
PRC Over All Lanes (%)		-31.2		-19.3
Cycle Time (s)		64		64
2036 Do Cumulative 2 (Reg 22)				
1/2+1/1Walton Street Entry Ahead	81.6	12	105.3	65
1/3 Walton Street Entry Ahead	27.0	2	41.4	4
2/2+2/1Walton Road Entry Left Ahead	78.8	7	89.4	9
3/1 Walton Road Entry Ahead	60.0	9	55.5	8
3/2 Walton Road Entry Ahead	41.3	5	33.5	4
4/1 + 4/2 Stoke Road Entry Left	114.2	89	88.3	13
9/1 + 9/2 Walton Street Stopline Right	76.0	7	92.7	11
10/1 Walton Road Stopline Left	32.3	2	29.1	2
10/2 Walton Road Stopline Ahead	81.0	16	103.9	54
10/3 Walton Road Stopline Right	25.3	3	40.7	6
11/1 Wendover Road Stopline Right	0.0	0	0.0	0
11/2 Wendover Road Stopline Right	59.1	8	65.7	8
12/2 Stoke Road Stopline Right	111.7	40	75.3	8
12/3 Stoke Road Stopline Right	111.7	40	75.5	8
13/1 Crown Court Entry Left Left2	18.9	0	18.4	0
15/1 Walton Street Connector Ahead Left	33.9	5	32.8	4
15/2 Walton Street Connector Ahead	43.8	5	33.2	4
15/3 Walton Street Connector Right	22.4	0	20.8	0
PRC Over All Lanes (%)		-26.9		-17.0
Cycle Time (s)		64		64

Junction 101 - Wendover Road / Marroway



This junction takes the form of a 3 arm roundabout. The junction has been modelled with the Arcady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Something;
- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

The junction is anticipated to exceed capacity in the 2036 Do Minimum scenario in both the AM and PM peak hours, as shown in the results extracted below. Whilst in the 2036 Do Something (HF) scenario the junction remains over capacity, there is an improvement in performance when compared to the Do Minimum. In the remaining cumulative 2036 scenarios there is an overall improvement in the junction operation in both peak hours when compared to the Do Minimum. As such, no works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Table 4.63 – Junction 101 – Wendover Road / Marroway – Existing Configuration

	AM			PM		
Approach	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum						
A413 Wendover Road N	169	309	1.09	4	9	0.78
B4544 Marroway	2	17	0.70	2	9	0.61
A413 Wendover Road S	6	15	0.85	125	258	1.07
Junction Delay (s)	164.17			120.30		
2036 Do Something (HF)						
A413 Wendover Road N	5	12	0.83	2	5	0.60
B4544 Marroway	2	14	0.68	0	5	0.29
A413 Wendover Road S	9	23	0.90	22	47	0.97
Junction Delay (s)	16.98			28.17		
2036 Do Cumulative 1 (HF + AW)						
A413 Wendover Road N	2	5	0.60	1	4	0.44
B4544 Marroway	0	5	0.21	0	4	0.06
A413 Wendover Road S	2	6	0.69	3	7	0.73
Junction Delay (s)	5.70			5.71		
2036 Do Cumulative 2 (Reg 22)						
A413 Wendover Road N	2	7	0.69	1	5	0.53
B4544 Marroway	1	7	0.32	0	4	0.10
A413 Wendover Road S	3	8	0.74	3	7	0.74
Junction Delay (s)	7.21			6.04		

Junction 116 – New Road / Brook End / Main Street



This is a 3 arm mini roundabout in Weston Turville and has been modelled with the Arcady junction modelling programme. The geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

Table 4.64 – Junction 116 – Main Street / New Road / Brook End – Existing Configuration

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
2036 Do Minimum						
New Road	6	70	0.88	3	38	0.75
Brook End	4	25	0.82	2	12	0.66
Main Street	11	67	0.93	14	83	0.96
Junction Delay (s)	49.97			47.58		
2036 Do Cumulative 1 (HF + AW)						
New Road	3	38	0.78	4	36	0.79
Brook End	1	11	0.57	1	7	0.35
Main Street	3	22	0.74	3	20	0.72
Junction Delay (s)	22.65			21.92		
2036 Do Cumulative 2 (Reg 22)						
New Road	12	108	0.95	6	56	0.86
Brook End	2	16	0.67	1	8	0.41
Main Street	3	26	0.78	8	49	0.90
Junction Delay (s)	48.25			40.41		

Table 4.64 shows that in the 2036 Do Minimum scenario the junction will operate above practical capacity for the junction, with an RFC of 0.93 in the AM and 0.96 in the PM peak hour for the Main Street approach, with associated maximum queues of 11 and 14 vehicles respectively.

In the Do Cumulative 1 scenario the operation of the junction improves and now operates within practical capacity, with a maximum RFC of 0.78 in the AM and an RFC of 0.79 in the PM on New Road.

In the Do Cumulative 2 scenario the junction exceeds practical capacity again and the operation in the AM peak hour worsens slightly compared to the 2036 Do Minimum scenario within the highest RFC increasing from 0.93 to 0.96 and an estimated increase in queue length of 1 vehicle. It is now New Road which shows the largest queue in the AM peak hour. In the PM the junction experiences an improvement compared to the 2036 Do Minimum scenario with the RFC reducing from 0.96 to 0.9 and an estimated queue reduction of 6 vehicles.

Although this junction will operate at capacity in 2036, mitigation is not desirable. Increasing capacity could attract more traffic to the village contrary to the aims of the link road strategy and based on previous discussions, the views of Weston Turville Parish Council. Another form of mitigation is therefore required, and it is considered most appropriate to attempt to reinforce the existing traffic calming to discourage traffic from using the routes through the village rather than increasing capacity.

The TAA explains that the Hampden Fields Consortium has committed to delivering a traffic calming scheme on Main Street (WSP Drawing 2826-SK-133 reproduced below), in addition to making a financial contribution towards the implementation by the Parish of further speed/weight restrictions.



No works to this junction are therefore proposed as the operation is acceptable with cumulative development subject to the committed traffic calming scheme as shown on drawing 2826-SK-133 and the commitments towards additional measures provided by the applicants.

Junction 117 - A413 Wendover Road / Station Road

This junction takes the form of a 3 arm roundabout. The junction has been modelled with the Arcady modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Junction 121 - Southern Link Road (SLR) / Employment Access

The SLR/Employment Access junction is a proposed signalised crossroads arrangement which connects the SLR with the main employment zone proposed within the Hampden Fields development. The junction is an internal part of the development and is not an external access, therefore its exact configuration is likely to be the subject of a Reserved Matters application that will be submitted for the primary strategic infrastructure for Hampden Fields. The proposed junction is illustrated on RPS Drawing JNY10535-DR-010, an extract of which is shown below.



Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 3.

The results of the assessment copied below, show that the junction would operate within capacity.

Table 4.66 – Junction 121 – SLR / Employment Access – Proposed Configuration

Link	Lane Description	AM		PM	
		Deg Sat (%)	MMQ (PCU)	Deg Sat (%)	MMQ (PCU)
2036 DC3 (VALP)					
1/1	EW Link (WB) Left Ahead	73.5	21	87.1	31
1/2+1/3	EW Link (WB) Ahead Right	75.5:75.5	24	87.8:87.8	34
2/2+2/1	Employment Access Right Left Ahead	72.7:72.7	4	88.6:88.6	13
3/1	EW Link (EB) Ahead Left	68.3	19	73.1	20
3/2+3/3	EW Link (EB) Ahead Right	73.9:73.9	8	75.2:82.2	22
4/2+4/1	Residential Access Left Ahead Right	33.9:34.9	2	35.9:35.9	1
PRC (%)		19.2		1.5	
Cycle Time (s)		120		120	

Junction 143 - Mandeville Road / Stoke Road

This junction takes the form of a 3 arm traffic signal controlled junction. The junction has been modelled with the LinSig modelling programme and the geometry and flows have been checked and are correct.

Assessments of the impact at this junction were required for the following scenarios based on the predicted traffic impact;

- 2036 Do Cumulative 1;
- 2036 Do Cumulative 2.

No works to this junction are proposed as the operation is acceptable with standalone and cumulative development.

Conclusion

It is concluded that full and detailed assessments of the application both individually and cumulatively, have demonstrated that any adverse effects of the proposals can be appropriately mitigated through planning conditions and S106 obligations.

The position reached in 2017 remains the same, and therefore the Council can confirm that it has no objections subject to Conditions and S106 Obligations to be advised.

Yours sincerely

Del Tester
Highways Development Management Consultant
Highways Development Management
Planning Growth & Sustainability

Jo Thornton
Highways Development Management
Planning Growth & Sustainability
Buckinghamshire Council

APPENDIX G: Hampden Fields Action Group Comment

COMMENTS ON 16/00424/AOP JANUARY 2021

This Action Group has considered the latest application and amendments and OBJECTS to it on the grounds set out below:

	PAGE
Prematurity	2
Coalescence	4
Transport	7
Aylesbury Transport Model	7
National Planning Policy Guidance in TA Preparation	13
Average Annual Daily Traffic	15
Junction 9 “Woodlands” Assessment	18
Junction 22 “Broughton Crossing” Junction Assessment	27
Gyratory System Assessment	32
Deliverability	35
BC Highways Objectivity	36
Transport Summary	38
Air Quality	40
Water Services Infrastructure	40
Flooding / Drainage	41
Healthcare	42
Biodiversity	43
Local Democracy	44
Conclusions	45

Prematurity

1. The application is premature to the Vale of Aylesbury Local Plan. Whilst the bar is rightly set very high on refusing an application on the basis of prematurity, there is no doubt that in this case it is reached.

2. The 2019 NPPF states:

Local planning authorities may give weight to relevant policies in emerging plans according to:

- a. *the stage of preparation of the emerging plan (the more advanced its preparation, the greater the weight that may be given);*
- b. *the extent to which there are unresolved objections to relevant policies (the less significant the unresolved objections, the greater the weight that may be given); and*
- c. *the degree of consistency of the relevant policies in the emerging plan to this Framework (the closer the policies in the emerging plan to the policies in the Framework, the greater the weight that may be given)²².*

(N.B bullet 22 refers the reader to the 2012 NPPF for Local Plans already submitted before 2019. This does apply to VALP, and the identical paragraph can be found at para 216 of the 2012 NPPF)

3. Accordingly, point (b) above is of particular relevance here. If the council were to rely on any part of the Transport element of the VALP when considering this application, it would prejudice its own Plan. We would draw your attention to the following
 - a. the level of objection received to the initial consultation,
 - b. the Inspector Interim comments on Transport published August 2018
 - c. further main modifications to policies T3, T4 and T4 and publication of significant amounts of new information (including a new model run)
 - d. a further public consultation period considered

- e. the Inspector's letter outlining his plans to hold further hearing sessions on the VALP.
4. In these circumstances any reasonable conclusion would be that there are significant unresolved issues which prevent any weight being given to the VALP when determining this application, the main benefit of which is to provide part of the VALP infrastructure.
5. The definition of the 'high bar' is detailed in the following paragraph:

However, in the context of the Framework – and in particular the presumption in favour of sustainable development – arguments that an application is premature are unlikely to justify a refusal of planning permission other than in the limited circumstances where both:

the development proposed is so substantial, or its cumulative effect would be so significant, that to grant permission would undermine the plan-making process by predetermining decisions about the scale, location or phasing of new development that are central to an emerging plan; and

the emerging plan is at an advanced stage but is not yet formally part of the development plan for the area.

6. In this case both parameters are clearly met. The application is premature and the council would be at risk of challenge if they were to prejudice it in such an obvious and unjustified manner.

Coalescence

7. This latest iteration of the application continues a history of problems arising out of the threat of coalescence.

8. In 2015, the Secretary of State ruled against the first 'Hampden Fields' application from 2012. Coalescence and the loss of settlement identity was one of the factors in that decision, as stated in his letter of 26 Jan 2015, para 23. Having given careful consideration to the Inspector's discussion and reasoning on coalescence, the Secretary of State agreed with his conclusions. In particular, while the appeal site could be regarded as an intended garden suburb for Aylesbury, it would draw the appeal site together with the two established settlements of Stoke Mandeville and Weston Turville. This would result in a fundamental change to the eastern part of Stoke Mandeville through coalescence and some weakening of the northern edge of Weston Turville, with the wider loss of open countryside as part of its setting. He also agreed that the scheme would conflict with the saved policy at the time, Policy RA.2 of AVDLP, and would be at odds with the Landscape Character Area guidelines.

9. Despite the failure of that application in 2015, an almost identical proposal came forward just one year later. The proposals included no meaningful separation: the only change was an 'offer' to Tamarisk Way residents of a mere 15 m of extra land. This was lip service to the point made in the Secretary of State's ruling.

10. Ironically, the risk of Severance (see Transport below) means that it is the two or three different parts of the Hampden Fields development itself that will be separate. There will undoubtedly be problems in creating a true sense of place and community across the tide of 2-way traffic that will flow all day along the busy dual carriageway Southern Link Road and the Marroway Link. This has been recognised in the 2020 Aylesbury Garden Town Masterplan when it stated that, "the Link Road effectively splits the development into two large sub-neighbourhoods" (page 140). They are not wrong. The latest AADT's show flows in excess of 48,800 vehicles per day will use the Southern Link Road. That makes it by far the busiest road in the Aylesbury area. Note,

the flow for the SLR is published in 16/01040/AOP Woodlands not Hampden Fields cumulative assessment AADT's (see below).

11. The threats of coalescence in 16/00424/AOP, as well as the continuing relevance of the 2015 ruling, were clearly acknowledged in the Officer Report to the SDMC in October 2017: *“The proposal would also result in the coalescence with the eastern edges of Stoke Mandeville and would have a material impact on the western edges of Weston Turville that would result in some limited harm to the settlement character (of both Stoke Mandeville and Weston Turville)... Given the proposals result in major adverse impacts on the Southern Vale Landscape Character Area and localised harm to visual receptors as a result of the urbanising effect of the development, it is considered that this matter should be afforded significant negative weight in the planning balance. The level of harm and how this is weighted in the planning balance reflects the weight given by the Planning Inspector and Secretary of State in this respect, in the previous appeal”* (para 1.9)

12. Only late last year, our MP Rob Butler expressed his own misgivings about the local threat posed by coalescence. In his reply to the Government White Paper ‘Planning for the Future’ he pointed out that his constituency *“has very little protected land”*. *“Urban extensions should not lead to a coalescence of villages. If an area is marked for urban extension, existing villages should not be merged with a larger settlement in one conurbation. In my constituency, villages such as Weston Turville and Aston Clinton would be at risk of conurbation with Aylesbury should endless urban expansion continue.”* Yet, of course, this is what is proposed here as acknowledged by the Council’s own planners.

13. Most recently, Natural England made the same point directly about the current application. In their letter of 18 December, they commented that *“The proposal would significantly extend the built environment of Aylesbury south eastwards, giving the appearance of urban sprawl”*.

14. The negative effects of the proposed development on landscape and visual impact have been well assessed and reported by the Council's own experts in this area. The earlier Landscape and Visual Impact assessment (LVIA) has been endorsed in January 2021 as follows: "*the proposed scheme will result in significant adverse landscape and visual impacts as set out in the ES and appropriate negative weight should be given to these impacts in the planning balance.*" By "appropriate" this must mean significant. Add to that the very real Severance issues *within the development* which would lead to even greater negative weight that outweighs any benefits of additional housing over inflated benefits of the Southern Link Road (See Transport below)
15. The weight of almost ten years of judgement, discussion and decisions over the very real threat of area coalescence from the various Hampden Fields proposals cannot be disregarded and should count for much more. The Council continues to not put significant negative weight on this in the planning balance.

Transport

16. Analysis of the Transport Assessment Addendum (TAA) will include some areas that have not been addressed or are not sufficiently answered since our submission in March 2016 and subsequent supplementary Reports from Transport Planning Practice and HFAG. However, as we are now in 2021, over five years since the original documents were produced, it would be unreasonable for anyone to have to go back and read those documents from a historical perspective. For ease of reference we repeat those issues here where they have not been addressed either through the Transport Assessment Addendum or the Highways Authority assessment of 13th January 2021. It should be read in conjunction with the documents we will signpost through this Transport assessment.

The 2020 Aylesbury Transport Model with 2017 Base Year

17. In developing the revised Transport Addendum, RPS Consulting Services (RPS) have taken the place of WSP but we note the Project Director remains unchanged. Buckinghamshire Council (BC) have asked RPS to use the updated 2020 Aylesbury Transport Model (“ATM”) with a base year of 2017.

18. We are pleased that after nearly ten years of trying to convince Bucks Council (BC) to improve their modelling they have finally agreed with us. The documents BC published in the run up to the Committee hearing of 25th October 2017, namely the Jacobs Forecast Methodology Review and BC’s subsequent endorsement of it, repay reading in full. For ease of reference, it concluded:

“It is therefore our conclusion that the methodology used to create the development matrices is in line with WebTAG advice for this type of model. We have subsequently concluded that the model forecasts are considered suitable for assessment of the development impacts and for proposing mitigation measures at key junctions.”

19. Whilst no doubt BC and Jacobs will argue that the 2020 Model is a standard progression/update of the model we submit that any criticisms we make of the model are genuine, well researched and supported by expert, independent analysis. Therefore, we request they are given due consideration and a full response is provided.
20. Whilst the new ATM is an improvement on the previous model there are still some serious reservations which cast doubt on its effectiveness to be used in determining planning applications. Accordingly, we ask that this submission is read in conjunction with the Transport Planning Practice (“TPP”) report into the Local Model Validation Report (April 2020 - attached) and the TPP report in the SEALR Transport Assessment (June 2020 - attached) that were sent to the Council at the time.
21. It should be noted that we have not received any correspondence at all regarding these reports and in particular no response to our request for more information, critical to the assessment of the Aylesbury Transport Model. We repeat those requests which can be found on page 19 (paragraphs 81-83) of the TPP SEALR report.
22. Whilst we ask the reports to be considered as a whole, particular concerns regarding the modelling are briefly highlighted below:

The lack of specific detail on the performance of the ATM model in representing flows at the Walton Street gyratory is a serious omission from the LMVR. This junction is critically important. But the gyratory observed flows are not validated in the ATM LMVR or the TA. Therefore, there cannot be any confidence in the assertion that future year problems at the gyratory have been solved.

TPP recommend that BC’s consultants provide some details of the demand and actual flows, particularly at the Walton Street gyratory. Without this information, the interpretation of the ATM model results can be difficult. This is particularly the case for the 2036 model runs, where a substantial increase in traffic (over 40% above the Base Year volumes) at an already congested location is being modelled.

Jacobs have compared modelled junction turning movements with observed data at two locations – A41/Aylesbury Road and A41/Bedgrove/Broughton Lane. Whilst these junctions are important to the assessment of the Woodlands and Hampden Fields applications, it is very surprising that no comparison was carried out for the Walton Street Gyratory and the A413/Camborne Avenue roundabout, both of which will be affected by the changes proposed.

Regarding the ATM's "Fitness for purpose" Jacobs comment as follows:

"As evidenced by the overall calibration/validation statistics, it is considered that the model provides a good overall representation of current travel conditions for those areas included within the modelled network and is therefore appropriate for the purposes of assessing smaller scale schemes and developments. For larger scale schemes, (i.e., those of a similar size to SEALR and the other orbital link road schemes) an initial assessment of the extent of the scheme's impact in terms of reassignment (potentially through the use of the existing Countywide model) and a detailed assessment of the model's validation in the vicinity of the scheme should be undertaken before the model can be said to be fit for purpose for use as an evidence base for a major scheme appraisal of the given scheme."

23. To our knowledge, no such assessment of the wider impact and validation has been performed for a scenario that includes ELR(S), SLR, SEALR, SMRR and SWALR and the associated land use developments. Therefore, it has not been demonstrated that the current version of the ATM Model is fit for purpose for examining the cumulative impact scenarios reported in the TAA. We want to make this overarching reservation clear, even though we have had to work with the modelled data in order to make our scrutiny comments that now follow.

Use of Different Morning Peak Hours between Aylesbury Transport Model and Hampden Fields Transport Assessment

24. The AM Peak hour model period in the ATM model base year has been changed. The modelled morning peak is now 07.00 to 08.00, not 08.00 to 09.00 (as in previous

versions of the Aylesbury Traffic Model and the current Countywide Model being used for the Local Plan Examination). Despite seeking clarification, no explanation has been given for this potentially very significant change, accompanied by a full Report from independent Transport Consultants, no response has been received from the Highways Authority.

25. We note that posted onto the CC/0015/20 portal on 6th January 2021 “SEALR Schedule of Applicant’s responses to consultee comments provided to LPA” 35030 published 6th January 2021 is a response from the applicant. It is the responsibility of the Highways Authority to explain what it has allowed in the development of the model, not the applicant.
26. Regardless, in that response, it states *“The morning peak turning movements have been used in the Transport Assessment, as produced by the Aylesbury Transport Model, these have been incorrectly labelled as 08:00-09:00 in the TA, but this is a labelling error and not a case of different data being used - it is the modelled morning peak hour.”*
27. It simply lacks credibility to state that this is a labelling error. It means 1000’s of pages of data in the model runs are incorrect. It means the applicant, their Highways Consultants, and BC Highways over a period of months have failed to check the relevant data yet the public are expected to believe the veracity of the results. It simply is not credible.
28. The response does not in any way answer the substantive points of:
 - a. Why has the AM Peak hour, (previously used for all residential Transport Assessments in this area, as well as modelling exercises) been changed?
 - b. Where is the evidence or data as to why this change has been made? It is important that the evidence is appropriate for the whole of Aylesbury and takes into account traffic delays as well as traffic flows.
 - c. How are the public expected to meaningfully take part in consultation when the information is so basically wrong and with no explanation given?

29. The Highways Authority will be aware that in a very large proportion of cases the AM peak is 08.00 – 09.00. This is particularly the case when major residential housing schemes are being developed as is the case for Aylesbury. In the rare exceptions that the AM peak begins at 07.00 it is usually in a major city setting and most often accompanied by an analysis of a two-hour peak between 07.00 and 09.00.
30. This change has very significant and far-reaching effects when assessing development impacts in the town, especially when considering that the Walton Street Gyratory area has the highest concentration of secondary students in the country heading for the three schools in close proximity to it, all of which start at on or very close to 08.45.
31. The model needs to be representative of the busiest weekday hours for it to have any credibility. A full explanation is again required if this is not to be judged a significant error.
32. The Highways Authority will have wanted to know, as do we, how the developers have taken this discrepancy into account when preparing the TAA. We can find no mention of it in either the TAA or the Highways Assessment.

Significance for Hampden Fields

33. It would be reasonable to assume that the traffic generation relating to Hampden Fields and Woodlands development will be greater in the hour 08:00 – 09:00. That is the time every single scenario of the data pages published across all the junction assessments states as the AM peak hour.
34. It would be wrong to apply lower Hampden Fields trip generation figures for 07:00 – 08:00 and inconsistent with the ATM to use trip generation for 08:00 to 09:00.
35. If the consultants operating the ATM have applied 08:00-09:00 trip generation to 07:00-08:00 background flows, they are creating an inconsistency and probably underestimating the non-development traffic. If they used 07:00-08:00 for trip

generation and background flows they are underestimating the development impacts because 08:00-09:00 has greater trip generation.

36. Please urgently inform the public regarding the above.

37. See the section below on Preparation of Transport Assessments. When considering the issues raised in this document, the Highway's agency will be aware that National Planning Policy Guidance on the preparation of Transport documents states that

"In order to make these documents as useful and accessible as possible any information or assumptions should be set out in a clear and publicly accessible form:

the timeframes over which they are conducted or operate should be appropriate in relation to the nature of developments to which they relate" (Paragraph: 007 Reference ID: 42-007-20140306)

38. How does the above meet this test?

The Standalone Case for Hampden Fields

The choice of 2036 as the forecast year for the Standalone case is reasonable, unlike in the Woodlands 16/01040/AOP scenario. The inclusion of the Eastern Link Road North and the Stoke Mandeville Relief Road (SMRR) makes sense. However, the Council has not asked for a standalone assessment for 16/01040/AOP with the SMRR present which creates inconsistencies from the very start of assessment.

Cumulative Assessments

39. It would have been helpful to have had the same comparator year as the VALP (2033) to allow meaningful comparisons.

40. The addition of an extra 3 years of background growth traffic (to 2036) of course has the effect of increasing background traffic which is helpful to the scenarios presented by the developer. It is very disappointing that few, if any, base year comparisons are given which would allow decision makers to see the overall effect of the traffic growth around Aylesbury between 2017 and 2036. This would show the full impact of the growth and demonstrate that in virtually all cumulative situations, the traffic in, around and at key junctions in Aylesbury will be demonstrably worse than it is today, or in the base year.
41. Given that the cumulative scenarios are based on 3 years after VALP it is strange that a full analysis has not been carried out for the key junctions based on the full VALP case. Only two existing junctions have been modelled and this does not reflect a realistic scenario. Critically, given the significance of the gyratory system (Junction 99), it is a substantial omission not to have included this in the full VALP Sensitivity analysis. This must be done before any final assessment can be objectively delivered.

National Planning Policy Guidance on preparation of Transport Assessments

42. It is made clear in latest NPPG that only schemes that have a reasonable chance of coming forward within a 3-year period should be considered in Cumulative Assessments. The Cumulative Assessment 2 scenario assumes all road schemes will be delivered.
43. It only requires one of these developments such as the ELR(S) or SEALR not to come forward for the cumulative scenarios to become unfit for purpose. We accept it would be unreasonable to have countless scenarios. However, several of the developments included in the Cumulative scenarios cannot be delivered by the Hampden Fields developers (ELR(S), SEALR and SWALR). These schemes require various levels of public funding and are subject to their own planning processes. They are not committed schemes. See “Deliverability” section below.
44. There is no 'Plan B' here. The risk in one or more of these schemes not coming forward is considerable. This partial ring road strategy is so starkly vulnerable that a Plan B needs considering.

45. But, given the uncertainty and controversy of some of these proposals, especially with regards to Woodlands, a scenario without some of these major developments is not only highly desirable but necessary to comply with NPPG.

46. We have already raised the point above regarding the preparation of Transport Assessments that *“In order to make these documents as useful and accessible as possible any information or assumptions should be set out in a clear and publicly accessible form”*

47. There are numerous parts of the Transport Assessment that fail this basic test including:

- i. The AM modelled peak change which *prima facie* defies all logic
- ii. The AADT inconsistencies highlighted below (ironically these are not actually part of the TAA or appendices but appear in the Environmental Assessment Addendum, but the point still stands)
- iii. Completely unrealistic hour long queues left unexplained
- iv. Changes in technical “intercept” figures which are not explained
- v. Unpublished Link data
- vi. No, or incredibly few, base year figures compared along with poorly laid out
- vii. ‘Cut off’ and poorly labelled appendices, mislabelled table headings and comparison with previous TA not base year (e.g., table 9.22 Transport and Access)

48. Can any objective person really consider this to be an appropriate basis on which form a public consultation? Clearly the issues raised need to be addressed, more information published, and the public consultation begun again.

Annual Average Daily Traffic (AADT) forecasts

Comparisons to 16/01040/AOP

49. There are significant issues with the AADT's between Hampden Fields and Woodlands as we have set out in our letter to you of 14th January 2021.
50. As you will be aware often the start point, for assessing the impact of development is to establish the forecast flows of traffic by producing Annual Average Daily Traffic (AADT) figures. This forms the basis for numerous assessments including not only of traffic impacts but also of, critically, Air Quality, Emissions, Greenhouse Gases (GHG), Noise and Severance, among others.
51. As you will see, when the like for like figures in the two applications are compared they are markedly different. Yet as the Transport Cumulative Impact Assessment is promoted as a joint assessment, one would expect these figures to be very similar, if not identical.
52. Whilst we will not repeat the detail of those issues here, it needs to be recorded that, until such time as clarity is received on this issue and the information is published in such a way as to reasonably allow members of the public to assess it, the Council should not even consider progressing this application any further. Our letter of 14th January requires reading in full but as an illustration one example for the A41 is shown below:

HF Link Number	Woodlands Link Number	Description	2017 Baseline	Hampden Fields 2036 Cumulative 2	Woodlands 2036 Full Development Scenario with scheme	Diff Hampden Fields v Woodlands
1	1.5	A41 Aston Clinton Road West of Aston Clintonn bypass between Woodlands and Holiday Inn	24926	25446	43503	18057

53. There is no specific analysis of the AADT's in the Transport Addendum other than a very few passing comments, without any specific data. This is despite very significant issues which can be identified by doing so.
54. It is also remarkable that the Highways Authority, in their letter to you of 13th January 2021 appraising the scheme, no mention of AADT's has been made.

Further comments have been made regarding the published AADT's in this report but when the issues are clarified we would require sufficient time to be allowed for the public to reasonably comment further.

New Southern Link Road

55. Of significant concern are the flows along the new Southern Link Road. These are not published within the Hampden Fields TAA or ESA or their appendices. The developer rationale at the bottom of Table 9.22 of the Environmental Assessment Addendum Chapter 9, namely that it is not necessary as it is “*excluded from the Do Minimum 2036 scenario and analysis within this chapter*”, is baffling as the figures published as part of the Woodlands (16/01040/AOP) application show extremely and unacceptably high levels of traffic for a road that serves as an access road to a major development area. As can be seen from the table below, the volume of traffic will exceed any other road in the Aylesbury area and is comparable to a major trunk road, not a link road through a residential development area.

Ref	Description	AADT (thousands)					
		2022			2036		
		Without Dev	With Dev	%Diff	Full Dev Without	Full Dev With Dev	%Diff
15.1	SLR S of A41	0	0		0	43.8	
15.4	SLR E of A413	0	0		0	48.8	
15.5	SLR W of A413	0	0		0	37.5	

56. There will be 48,802 vehicles per day (to quote precisely from the Woodlands developer document) using the Southern Link Road by the time the developments of Hampden Fields and Woodlands have been completed. It will be by far the busiest road in the Aylesbury area. It is counter to policy and unacceptable given the location and use of this road. It will lead to a very significant Severance issue within the development (see also comments under ‘Coalescence’ above).

57. The fact that the developer has not chosen to assess this road link in the Transport and Access chapter of the ESA means that it has not been assessed for its impact on other critical elements of a full Transport Assessment namely, Pedestrian Amenity, Driver Stress, Fear & Intimidation, Accident & Safety and Severance. (N.B Air Quality would be assessed as part of the Air Quality chapters – see below)

The Role of the Southern Link Road

58. This road has been described by the developer as “serving as both the primary site access and as a cross-radial strategic road around the south of Aylesbury.” (paragraph 1.10 of the TAA). Whilst no doubt the developer will claim this can be done, it will become apparent that this road has a split personality.

59. The July 2020 Aylesbury Garden Town Masterplan (p. 140) refers to the “considerable emphasis” placed on its “boulevard character”. But in many other places including the crucial report considered in 2017 by the SDMC it is headlined as a ‘strategic link road’, for cars, light and heavy goods traffic. The speed limit will be 40 mph and barriers will be necessary to prevent pedestrians trying to cross this 4 Lane highway.

60. These two incompatible aims show an inconsistency in planning (and communication to the public). If this is a strategic road then the high traffic flows can be justified (assuming appropriate Air Quality assessments have been carried out, which currently they appear not to have been). However, high traffic flows will lead to Severance and parts of the development cut off.

61. The claimed solution is of course to reduce Severance by the placement of 4 crossing points. This is also at the request of the Highways Authority. However, it is obvious that this will create hold ups, especially in the morning peak (when appropriately modelled) and will reduce traffic flows. Where does that traffic then go? It is likely to reassign onto other parts of the network.

62. As this Action Group has been stating since 2011, the benefits of the Southern Link Road are overinflated by the developers and by officers. At paragraph 1.7 of the report to committee of October 2017 the officer concludes *“The provision of the Southern Link Road and the financial contributions towards the delivery of the SEALR will bring about*

major strategic benefits to the town's highway network and are afforded significant weight”_

63. The issue of Severance is not given any weight in the planning balance. When this is objectively assessed and corresponding traffic is dispersed around the network the “benefits to the town’s network” are overstated.

Junction Assessments

64. Given the very limited time available and the amount of data published, the Hampden Fields Action Group has been unable to resource expert analysis of the technical junction data. Many scenarios have not been published in a format that a member of the public could reasonably scrutinise; others have been missed completely. This has prejudiced the public and HFAG.

Junction 9 A41 Woodlands Roundabout

65. The Woodlands roundabout is assessed with the peak hours of 08.00-09.00 for the AM peak and 17.00 to 18.00 for the PM peak. The AM peak modelled does not match the 2020 Aylesbury Transport Model’s peak AM of 07.00 to 08.00.

This is a fundamental inconsistency.

66. Table 4.5 on page 32 of the TAA shows the 2036 Do Minimum. As with the Woodlands results this shows delays at the junction that are impossible. The delay in the PM peak shows queues of 1444 vehicles and queues lasting 5073 seconds. This equates to queues of one hour and 25 minutes, which is impossible within a one hour peak period. We appreciate a full Arcady run was done for 90 minutes (without explanation) but it is presented clearly as only the peak hour assessment. This makes the Do Minimum meaningless.

67. We therefore object strongly to the developer statement on page 33 of the TAA, para 4.39:

“The proposed signalised roundabout is predicted to operate more satisfactorily than the existing configuration, the comparison between the level of queue that is reported on the main approach to the junction. This peak hour demonstrates that a level of betterment is achieved as a result of the Hampden Fields development when compared to the corresponding 2036 Do Minimum situation, with queueing levels predicted to reduce.”

68. The comparison to a significantly flawed 2036 Do Minimum simply would be unjustified at any junction in the network. For such a basic error to happen at one of the 3 most important junctions in the network is extremely concerning.
69. Accordingly, the Highways Authority’s assessment of this junction lacks even the most basic level of scrutiny and objectivity, as they reproduce the developer’s table in their own document, accepting the developer error and simply acknowledging the existing overcapacity. It is common ground that the roundabout is over capacity.
70. The Do Minimum 2036 data can be found at Appendix C of the Transport Assessment Addendum. What is shown is that the model period is actually over one and a half hours, from 08.00 to 09.30 in the AM and 17.00 to 18.30 in the PM. Not what it should be which is 08.00 – 09.00 in the AM peak and 17.00 – 18.00 in the PM peak.
71. We do not accept that any comparison with the current 2036 Do Minimum offers any insight into what might happen in the Cumulative scenarios of 2036. The Table 4.5 is incorrect as it shows 1.5 hours of traffic when all the cumulative scenarios show 1 hour.
72. What has also happened is that the worst data point has been used regardless of what time period it is in. So the delays at 9.30am (outside the peak hour) have been used to create the worst possible scenario.
73. This is a very basic error, but it makes the whole comparison meaningless.

Table 4.5 from Hampden Fields Transport Assessment Addendum

Approach	AM			PM		
	Queue (Veh)	Delay (s)	RFC (Veh)	Queue	Delay (s)	RFC
A – Aston Clinton Road	76	127	1.07	2	6	0.70
B – A41	264	1008	1.41	1444	5073	2.44
C – Aylesbury Road	1	9	0.52	0	6	0.30
Junction Delay (s)		427.86		Do	2974.62	

74. As stated, these figures represent 1.5 hours not the morning and afternoon peak hours from which the Cumulative scenarios are derived. Although this will reduce some of the delays significantly, especially on the B-A41 arm, it would still be a totally unrealistic Do Minimum approach.

	AM Peak 08.00 – 09.00			PM Peak 17.00 – 18.00		
	Queue (Veh)	Delays Seconds	RFC	Queue (Veh)	Delays Seconds	RFC
A - Aston Clinton Road	76	127	1.07	2	6.3	0.70
B - A41	230	731	1.41	1062	3350	2.44
C - Aylesbury Road	1	9	0.52	0	6	0.3

75. As can be seen the queues are significantly reduced on the B-A41 Arm approaching from Tring but even this is not a realistic scenario.

2036 Do Minimum ARCADY Analysis

76. We have therefore analysed the raw data from the Arcady reports in order to see why the Do Minimum is so unrealistic.

77. The A41 Arm has been subjected to an “intercept adjustment” of “-1085”. This has led to effectively reducing the capacity at the approach by 1085. See “Arm intercept adjustments” below.

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - Aston Clinton Road	3.80	7.30	20.5	50.0	63.5	3.0	
B - A41	7.30	7.30	0.0	18.0	63.5	38.0	
C - Aylesbury Road	2.60	5.60	11.5	36.0	63.5	29.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
-----	------	--------	--------------------------------------

A - Aston Clinton Road	None		
B - A41	Direct		-1085
C - Aylesbury Road	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - Aston Clinton Road	0.630	2063
B - A41	0.603	1053
C - Aylesbury Road	0.480	1316

The slope and intercept shown above include any corrections and adjustments.

78. We have investigated the issues behind “intercept adjustments” from TRL (the company behind the ARCADY programme). Advice can be found on their website at

<https://trlsoftware.com/support/knowledgebase/queues-are-longer-or-shorter-than-arcady-predicts/>

79. Whilst they explain “*If all else fails then you can apply factors to calibrate the model*”. (N.B the example they give is “-200 PCU/hr to reduce the predicted capacity”). However, they make it clear that “*Corrections at the junction are intended to account for factors at the junction which make the junction different to the ‘average’ junction with*

the same geometries, such as poor visibility, gradient, driver hesitation, unusual layout, and so on". There appear no unusual factors at this junction limiting capacity especially as both lanes are fully utilised on the approach.

80. Further it seems highly unlikely that the A41 bypass (which has two lanes) on the approach has half the capacity of the Aylesbury Road approach.

81. An explanation as to why this adjustment has been made is required. There is nothing in the TAA which suggests that this adjustment has been approved by the Highways Authority, or for what reason. Has this been approved by the Highways Authority?

82. It is a very drastic calibration adjustment and explains the unrealistic delays in the 2036 Do Minimum. Such an adjustment has clearly not been made in the Aylesbury Transport Model SATURN model. Otherwise more traffic would be avoiding this location or peak spreading as the traffic builds up.

83. In any case the standalone 2036 Hampden Fields Do Something shown in Table 4.6 show significant overloading issues on several arms. It is quite likely that when the Do Minimum is reasonably adjusted the standalone position could actually be worse than the Do Minimum.

Overall Flows at the Junction

84. The vehicle flows at the junction are assessed as:

<u>Traffic Flows at A41 Woodlands Roundabout</u>		
<u>Full Junction</u>		
	AM	PM
2017 Base year *	2187	2374
2036 Do Minimum	3299	3564
Difference	1112	1190
Percentage Increase	50.85%	50.13%
<u>A41 Approach Arm from Tring</u>		PM
2017 Base Year		1100
2036 Do Minimum		2092
Difference		992
Percentage Increase		90.18%
* From 2020 LMVR page 95]		

85. This shows drastically increasing traffic at this roundabout, way higher than would be expected, of over 50% for the junction as a whole and of an incredible 90% increase for the A41 arm itself. This growth needs to be put into context in that it does not include any development associated with Woodlands, Hampden Fields, SEALR, SWALR and other VALP schemes. These increases seem excessive and once again go some way to explain the unrealistic Do Minimum scenario.

Cumulative Scenarios

86. The developer at paragraph 4.45 of the TAA gives a narrative that compares all Cumulative scenarios with the flawed 2036 Do Minimum. In fact this is difficult to do as the 2036 Do Minimum results are calculated using a different method than the cumulative scenarios. The Do Minimum is calculated using ARCADY, the standalone is calculated using LINSIG and the Cumulative scenarios are calculated using TRANSYT. Whilst these are broadly comparable, in some areas direct comparisons are not possible.

87. Analysis of the Cumulative scenarios are available in Appendix D to I of Appendix H to the TAA (Jacobs 2020 ELR-SLR Transyt updates). N.B This is published as

16_00424_AOP-JNY1053501 _TRANSPORT_ASSESSMENT_ADDENDUM_-_APPENDICES_PART_6_OF_6-2209207. The tables are incomplete and appear to show completely unrealistic Practical Reserve Capacity percentages of several thousands per cent in some of the scenarios. (See D.4 in the Appendices to Appendix H)

88. Some of the data is incomplete as it appears to have been cut off screen grabs and as such cannot be seen. Again, can we have the full data? In some case numerous junction arms appear not to have been published. (See Final Prediction Table of DC1 AM Peak of Jacobs report in Appendix H).

89. No Cumulative summary results are produced by either the developer or the Highways Authority. This is extremely surprising given the significance of this junction.

90. We have analysed some of the data that can be utilised and have summarised the PM peak in the table below:

N.B In this table, the Do Minimum scenarios are assessed differently because in the Do Minimum these are roundabouts not signalised junctions. Therefore, capacity is expressed as a decimal Ratio to Flow Capacity RFC (above 0.85 RFC being problematic) in the Do Minimum scenarios and as a percentage Degree of Saturation (above 85% being problematic) in the Do Something and Cumulative scenarios).

	2036 Do Minimum	Hampden Fields Standalone	Cumulative One	Cumulative Two	Cumulative Three
A41 East	2.44 RFC	196%	98%	104%	101%
ELR(N)	Not in existence	Not in Existence	87%	99%	100%
SLR (S)	Not in existence	90%	90%	83%	88%
Overall PM PRC		118.5%			

Table One: PM Peak Woodlands Roundabout Junction Capacity

Do Cumulative 1 Hampden Fields and Woodlands

91. The Jacobs reports states on page 17 that in the AM peak all queues will effectively clear with each cycle of traffic light change. However, *“In the PM peak Queues on the A41 East (239 metres), the East Link Road North, South Link Road and pedestrian crossing on the South Link Road would fail to clear in some cycles.”*
92. They conclude *“These results are slightly worse than the 2017 results for the AM peak (57.5 PCU/hr) and considerably worse in the PM peak (64.7 PCU/hr)”* [emphasis added].
93. No mention is made in TAA or on the Highways Authority assessment that there is a worsening at Woodlands Roundabout when assessed against the new transport model. Both are content to fall back on the comparison with an overinflated, unrealistic and flawed 2036 Do Minimum scenario. This is unacceptable.

Do Cumulative 2

94. It is very similar to the Cumulative 1 scenario where there is a worsening in the new transport model against the 2017 transport model. In the AM peak the model suggests a queue of 73 metres to clear with each cycle of lights on the approach from Tring (A41 East).
95. However, Jacobs conclude that in the PM peak the situation is much more serious *“with a queue of 373m unlikely to clear and ensuring the network is over capacity.”*

Do Cumulative 3 (full VALP)

96. Again, there are significant over-capacity issues especially on the A41 East approach from Tring in the PM peak. Jacobs state that the queue in the PM peak of 309 metres is *“unlikely to clear in most cycles”*

97. This scenario is particularly striking given that the whole Garden Town strategy seeks to reduce the need for vehicle journeys, yet one of the most important junctions in Aylesbury traffic will be overloaded causing congestion in 2036. It represents failure of the strategy.

98. The conclusion to the Jacobs report repays visiting in full:

“The sensitivity test of scenario DC2 for the Regulation 22 sites shows satisfactory results in the AM peak, however is overcapacity in the PM peak. The A41 East is observed to exceed a 100% DoS and would have queues that fail to clear in most cycles.

In Scenario DC3 [Do Cumulative 3 – full VALP], the junction is observed to be overcapacity in the PM peak with queues generated on A41 East and East Link Road that fail to clear. The AM is however observed to perform within capacity.

It is recommended that the results of the sensitivity tests are compared to a reference case (e.g., Do Minimum or Do-Nothing scenario) to determine whether the DC2 or DC3 performance are acceptable.”

99. As can be seen Jacobs recommend that these results are compared to the Do Minimum but this cannot be done as the Do Minimum scenario is flawed.

100. The modelling needs to be reworked and the completely impossible queue of 1444 vehicles reassigned throughout the model as would happen in real life. This would then lead to impacts on other parts of the network that must be assessed.

Junction 22 Bedgrove / Broughton Crossing

101. The junction operates well above capacity in the 2036 Do Minimum. The Standalone scenario with just Hampden Fields is effectively the same in the AM peak, 58% over capacity and a minor betterment in the PM peak (from -3% to 3%.)

Cumulative Scenarios

102. All cumulative scenarios show a significant deterioration in the overall Practical Reserve Capacity of the junction in the PM peak when compared to the Do Minimum.

	AM Peak	PM Peak
2036 Do Minimum	-57.9%	-3.3%
2036 Cumulative One	-44.2%	-26.5%
2036 Cumulative Two	-37.6%	-24.8%

103. This would not be acceptable so the developer is proposing a mitigation scheme, the closure of the Richmond Road arm and re-direction of Akeman Road (the practicality and legality of this is extensively covered below).

104. Just considering the mitigation itself, along with changes in the cycle time, it appears to have significant benefits to the operation of the junction. Looking at this from the other side it is clear that without this mitigation granting of planning permission for Hampden Fields (and indeed Woodlands) would be highly unlikely to be approved.

Overall capacity (PRC) at Junction 22 Bedgrove / Broughton Crossing

	AM Peak %	PM Peak %
2036 Do Minimum	-57.9	-3.3
2036 Cumulative One	-44.2	-26.5
2036 Cumulative Two	-37.6	-24.8
2036 Cumulative One plus Richmond Road Closure	+24.7	+41.7
2036 Cumulative Two plus Richmond Road closure	+25.5	+42.3

105. This increase in performance is significant. It should be noted mitigation has allowed the cycle time in the AM peak to change significantly, thus flows through the junction would be dramatically increased. It would also have the effect of “encouraging” more traffic to use the A41 Tring Road corridor, which as previously stated, is against policy.

AADT’s and Tring Road Corridor (Hampden Fields Link 21, Woodlands Link 1.7)

106. 2036 AADT’s published with Hampden Fields, at Table 9.22 of the ESA, state that 21,284 vehicles per day in the Cumulative 2 scenario will use the Tring Road Link. yet the corresponding figures for the Woodlands “Full development Scenario 2036” is 32,148. A difference of 10,864 vehicles (see below)

HF Link Number	Woodlands Link Number	Description	2017 Baseline	Hampden Fields 2036 Cumulative 2	Woodlands Do Cumulative 2	Diff Hampden Fields v Woodlands
21	1.7	A41 Adams Garage to Bedgrove	18313	21284	32148	10864

107. This is covered above and in our letter sent to you on 14th January 2021. Such wide differences will need to be thoroughly explained and any mistakes rectified.

108. It is unclear as to which AADT scenarios (analysed above) have been compiled using the mitigated Richmond Road closure. Can this please be urgently clarified.

109. Increased flows on this AQMA corridor are not acceptable to local residents and it cannot be reasonably acceptable to the Highways Authority either. Yet no comment is made by the Highways Authority regarding the increased flows on the Tring Road.

Impact on junction modelling

110. Given the impact of the proposed mitigation schemes in reducing delays, the Highways Authority should insist the full mitigation be run through the ATM model again to assess whether the flows at this junction, and other junctions, will increase. This could have wide-ranging impacts elsewhere in the network.

111. Clearly, as the flows will be increased this traffic has to go somewhere. It will have the effect of more traffic meeting the King Edward Avenue/Oakfield Road junction, Woodlands, New Road junctions during peak AM and PM periods. It appears that none of the surrounding junctions have been modelled taking into account the impact of the Richmond Road mitigation scheme.

112. Could the Highways Authority please urgently confirm if the published junction assessments have been completed using the Richmond Road closure as well as other mitigation.

113. This urgently needs to be addressed. If the current scenarios do not include the Richmond Road closures/mitigation, the scenarios must be done for key junctions with the mitigation for the Broughton Crossing junction included, both standalone and cumulative, and the public must be given sufficient time to scrutinise these.

As a minimum we suggest the following junctions require further assessment:

Junction Number	
9	Woodlands Roundabout
23	Bellingham Way / A4157 Stocklake
26	Park Street Roundabout
28	A418 Park Street
30	Broughton Avenue Priority Junction
31	A418 Cambridge Street
36	A41 King Edward Avenue

114. Without adequate junction assessments in all scenarios, with adequate mitigation being fully considered, the Highways Authority could not grant planning permission for application 16/00424/AOP (nor for 16/01040/APP).

Richmond Road Diversion - Proposed Mitigation – Implications for Decision Makers

115. To overcome the very clear problems that exist with the junction it is clear that mitigation is required in published scenarios. Once again, we need to stress that a

standalone scenario has not been published. As it has been well documented by others the Council will be aware of the land ownership dispute that exists regarding the Richmond Road green area. However, land ownership does not have any direct influence on the planning merits of the case.

116. What does, however, is a planning decision being made that would be subject to a “different consenting regime” in relation to Highways changes, which the decision maker was unable to guarantee. The diversion of Richmond Road requires a number of legal procedures which are outside the control of decision makers in this planning application. Namely the publication and approval of a Traffic Regulation Order changing the layout of the Richmond Road area and closing Akeman Road. Such changes will no doubt be very heavily contested by local residents and are very uncertain to get approval even if land ownership issues can be overcome.

117. It is an error of fact and very misleading indeed to suggest, as the developer does at 3.21.5, that *“This junction was the subject of a committed scheme of improvement which was agreed with Buckinghamshire Council as part of the 2017 technical work for Aylesbury Woodlands and Hampden Fields”*. [Emphasis added]

This statement is so erroneous, it merits an immediate correction of its own.

118. If this were a committed scheme, then all transport assessments would have to be done with it included. It is not a committed scheme and what makes it worse is that it is being brought forward as joint mitigation for both Hampden Fields and Woodlands. Despite what it says at 3.21.8 of the TAA there still appears to be some confusion between the TAAs and the draft 106 agreements for Woodlands and Hampden Fields as to who will deliver or contribute to it.

119. Regarding the granting of planning permission for a scheme that requires mitigation under a “different consenting regime” there is a notable precedent for Bucks Council. Although they had agreed with the Hampden Fields developer in 2013 that they would not object to their proposals, an independent planning inspector and the Secretary of State disagreed and refused planning permission.

120.Paragraph 27 of the Secretary of State's decision letter 25th January 2015 repays reading in full:

27.Like the Inspector, the Secretary of State has taken account of the fact that a scheme of mitigation has evolved for the Walton Street gyratory, but that its final form leaves a number of matters uncertain and any such scheme could only be implemented, and any prior planning permission for the Appeal B scheme realised, consequent on the confirmation of a Traffic Regulation Order which would be subject to its own consent regime. The Secretary of State agrees with the Inspector at IR9.586 that the benefits of such a scheme would be substantial. However, he also agrees (IR9.645) that it would not make sound planning sense to approve a major urban extension with known highway deficiencies, an incomplete solution and uncertainties about deliverability until it can be demonstrated that the full effects of the appeal scheme can be mitigated, managed and implemented. [Emphasis added]

121.When read in full it is clear the Secretary of State is referring to:

A planning decision where it was common ground that mitigation was required,
That the mitigation would be subject to its own consent regime,
The mitigation related to off site works
The mitigation requires changes to established road layout*
It relates to a “major urban extension”,
It has known highways deficiencies and
Planning should not be granted until it can be “*demonstrated that the full effects of the scheme can be mitigated, managed and implemented*”

*NB The mitigation the SoS was referring to in his decision was the proposed closure of the “Aristocrat link” arm at the Walton Street gyratory.

122.There needs to be certainty about how and when the mitigation will be achieved.
Failure to provide certainty will leave the Council open to challenge from the public.

Junction 99 – The Walton Street Gyratory

123. Referring to the 2020 Aylesbury Transport Model, the lack of validation using observed flows at the gyratory system is a major omission that undermines the model and consequently the TAA. It cannot have escaped the HA at the most senior level that this junction is both the busiest and most controversial in the whole of the Aylesbury network.

124. In addition, it forms part of an AQMA and a previous Highways Authority decision to allow planning permission for the original HF development was overturned by the SoS because of concerns about this junction. In this context, it is inconceivable that this junction has not been properly considered when developing this model.

125. All comments regarding the gyratory should be taken in consideration with the inadequacies of the Aylesbury Transport Model validation in relation to the gyratory system as outlined above and contained within the TPP reports on the LMVR and the SEALR modelling.

126. We also request again, as a matter of urgency, an explanation as to why the modelling time period in the AM peak has been changed to 07.00 to 08.00 from 08.00 to 09.00. Yet, the trip generation used to base Hampden Fields Transport Analysis is from 08.00 – 09.00. The change to 07.00 – 08.00 is wholly unrepresentative of the busiest period at this junction given the concentration of school children during the time period 08.00 to 09.00.

127. This remains a fundamental inconsistency. Given the significance of this junction to the whole Aylesbury Road network, a credible explanation needs to be given.

128. The developer and the Highways Authority do not appear to mention the Secretary of State's 2015 decision relating to Hampden Fields and the gyratory. It has conveniently been 'airbrushed' from the analysis yet it provides significant insight into this crucial junction. It merits consideration, and considerable weight must be placed upon it by the decision makers.

129. At the time of Secretary of State's decision, the Practical Reserve Capacity at the gyratory in 2031 was as follows

	AM Peak %	PM Peak %
2031 Do Minimum	-29.7	-3.3%
2031 Do Something (with Hampden Fields)	-31.8	-2.7%

*from Inspector's Report para 9.501 – 9.503

130. The practical reserve capacity (PRC) of a traffic signal junction is a commonly used measure of its available space capacity. The PRC is related to the degree of saturation of a traffic signal junction. A positive PRC indicates that a junction has spare capacity and may be able to accept more traffic. A negative PRC indicates that the junction is over capacity and is suffering from traffic congestion. As can be seen there was a small decrease in PRC in the am peak, when congestion was shown to be particularly severe, and an actual increase in PRC in the pm peak, yet the inspector concluded

9.504 Although the increased percentage total flow within the junction would be less than 5% in the morning peak and less than 1% in the afternoon peak, the significance of such seemingly minor increases would be heightened by the sensitivity of the junction in its already congested operation and its enhanced susceptibility to breakdown

131. Even given the wholly inadequate unacceptable change in the AM peak time period in the current application, there are still issues.

132. In the Standalone 2036 the minor betterment is very unlikely to be achieved when the modelling period is changed. Even if it tilts the balance back to a marginal deterioration of the situation at the gyratory, approving the application will go against the SoS decision of 2015 which regarded

“the significance of such seemingly minor increases would be heightened by the sensitivity of the junction in its already congested operation and its enhanced susceptibility to breakdown”.

Cumulative Scenarios

The cumulative scenarios are as follows:

Practical Reserve Capacity 2036 at the gyratory system

	AM Peak	PM Peak
Inspector 2015 with Hampden Fields	-31.8%	-2.7%
2036 Cumulative One	-31.2%	-19.3%
2036 Cumulative Two	-26.9%	-17.0%

133. It is clear that the gyratory is operating significantly worse in the PM peak than the scenarios the inspector rejected in 2015. Whatever is claimed by developers, we will have a dramatically worsening situation at the gyratory in the coming years in the PM peak.

134. Developers of Hampden Fields, Woodlands and SEALR will claim that it is not their development that is causing the gyratory system to worsen and therefore they cannot be required to provide mitigation for it. The Highways Authority, however, has a legal duty to reduce congestion, especially at this Air Quality Management Area. Overall, from 2015 to 2036 the performance of this junction significantly worsens so the overall strategy, which the full cumulative 2/3 should be addressing, demonstrably fails.

135. It is also worth noting that when the Inspector made his comments the junction was ‘only’ forecast to be operating at -31.8% (am peak) and -2.7% (pm peak) in the 2036 Cumulative 2 scenario. Now it is operating in the very best case at -17% in the PM peak in the Cumulative Two scenario. The gyratory issues highlighted by the Secretary of State have not been answered either in the standalone or the cumulative scenarios.

Deliverability

136. We note in the original Transport Assessment from 2016 that the Southern Link Road is to be delivered upfront.

137. Whilst we have seen nothing in the TAA to alter this commitment we are concerned that the Hampden Fields s106 suggests that the Southern Link Road might not need to be delivered until “5 years after Commencement of Development”. For Hampden Fields’ development to commence it still has to go through outline planning, get an agreed s106, face legal challenge, go through detailed planning, face another potential legal challenge, and then begin. Even in the unlikely event of this all going in favour of the development it is very unlikely that development would begin before 2023/24. The Council and the developer need to re-affirm their commitment to the upfront delivery of the Southern Link Road.

138. In the Hampden Fields covering letter (page 2), it is asserted that the SEALR and Woodlands will have planning permission secured. These are, of course, quite outside the Applicant’s control and cannot be taken for granted. Especially when the Vale of Aylesbury Local Plan is still under Examination in Public. To make such an assertion departs from best planning practice. It must therefore be understood that the current application has a significant dependency built into it. It is inconceivable the development could go ahead at all if either SEALR or Woodlands does not proceed.

BC Highways Objectivity

139. We are increasingly concerned about the approach taken by BC Highways since well before the public inquiry in 2013. An historical account of its failings will not help so will not be listed here but it is very important to note that BC Highways have supported this application, in its various forms since before that first public inquiry.

140. Whilst we understand that the Highways Assessment of 13th January 2021 has to be read with the initial assessment of 2017, a distinct and obvious lack of scrutiny of the published Transport Assessment Addendum is demonstrated in their published response of 13th January 2021.

141. We also note that Cumulative Assessments rely on consent being granted for what are effectively Council schemes (in relation to the SEALR and Woodlands). As a result a great deal rests on the approval of Hampden Fields. However, even in this context it should be noted that such fundamental changes to a Transport Assessment require thorough re-examination of the fundamental transport issues. We have pointed out in numerous places in this report where there are significant questions which the Highways Authority should want to address but appear to have not.

Transport Summary

142. Our requests and concerns over the Aylesbury Transport Model have gone unanswered – they have been repeated here. Significant issues remain over the change in peak hours and the lack of validation at the Walton Street Gyrotory system.

143. The lack of consistency in the morning peak hour between the Aylesbury Transport Model and the associated inconsistencies with Trip Generation numbers puts the validity of the whole TAA in severe jeopardy.

144. Given the fact that the cumulative impact case includes four major road schemes and associated developments, Jacobs' own recommendation is that it should be run back through the Countywide Model.

145. Key Garden Town Principles are not achieved. These proposals encourage the use of cars and in key locations and create by far the busiest roads in the town, encouraging yet greater use of vehicular transport. Key modal shift initiatives as part of the Cumulative Assessment, like the Park and Ride scheme along the A41 corridor, are now to be reviewed rather than brought forward.

146. Significant issues remain with the assessment of the critical Woodlands junction (Junction 9).

147. New roads, particularly the Southern Link Road, operate at volumes up to 250% higher than the average Urban A road, based on Department for Transport comparison data. In this context major Severance issues are created. Once again this is against key Garden Town principles. The benefits of the Southern Link Road are severely overstated in the planning balance.

148. The Transport Assessment Addendum contains significant omissions in data which prejudice the public; forecast AADT traffic flows have not been published on key links. The published AADT's for the Cumulative Assessments of Hampden Fields and Woodlands are so wildly different that no reasonable assessment of the scenarios can be made.
149. Mitigation is proposed but these proposals have not been remodelled at key junctions. The complete model needs to be rerun and republished with the full mitigation schemes in place, as the Highways Authority has been advised by their own Consultants.
150. Broughton Lane mitigation, required in all scenarios, is subject to a separate consenting regime over which the Council and developer cannot guarantee success.
151. The Richmond Road closure / mitigation scheme attracts more traffic to the Tring Road corridor when the stated aim of the scheme is to reduce use of the Tring Road. This is a major concern and again contrary to Garden Town principles.
152. The Walton Street gyratory remains considerably overloaded in all scenarios. Even in the best-case cumulative scenarios it is considerably worse than the scenario rejected by the Secretary of State in 2015.
153. As with the Transport Assessment Addendum as a whole, the claimed improvements in the gyratory performance are achieved by adopting a wholly unrealistic earlier peak AM time of 07:00 to 08:00 from the Aylesbury Transport Model and seemingly applying inconsistent Trip Generation figures for 08:00 to 09:00.

154. These points taken together need much closer scrutiny with more analysis as required.

We have highlighted NPPG here and the Highways Authority will be well aware they cannot allow a scheme to be approved with incomplete information, and unrealistic and unreasonable scenarios demonstrating beyond any doubt that there are significant highways deficiencies associated with the amended Transport Assessment.

Air Quality

155. The weaknesses highlighted in our Transport criticisms above naturally affect air quality in and around the site and subsidiary areas. The AADT figures that feature in the Air Quality Chapter of the ES Addendum (para 10.53 and Appendix 10.3) are highly questionable, as we have pointed out above.

156. The resultant Vehicle Emission factors are therefore similarly unreliable. Until and unless the AADT data can be clarified/rectified, the Air Quality element of the application must be considered unsafe.

157. Additionally, we find it an unacceptable omission that any future Air Quality effects appear not to have been assessed within the new development. There are potentially risks to air quality from the impact of the SLR on nearby residential areas, public spaces and footpaths. Emissions from the many thousands of vehicles forecast to use the SLR will be high as they stop and restart at the several planned crossing points. As shown on the parameters plan it appears that the urban residential core will be multi-storey in places and the employment areas will consist of similarly large buildings sited relatively close to the Southern Link Road. There is an obvious issue potentially being created which at the very least requires assessment.

Water services infrastructure

158. It has been alarming to read the statement from Thames Water that they cannot accommodate this development without network upgrades. How is it possible that such a major development that has been in preparation for more than four years could run into this basic problem? This issue is very current. It was highlighted on 13 January on a news item on BBC 'South Today' about sewage pollution of watercourses from a Thames Water plant. Professor Richard Harding of the Centre for Landscape and Climate Research at Leicester University and a member of the Thames Water Stakeholder Group explained that infrastructure often lags the creation of new developments, requiring remedial measures after the event. Thames Water recognise that they have sometimes been unable to match the development of sewage and surface water infrastructure to cope with new housing developments,

relying on asking the developers to “rectify any issues”. That risks water courses suffering frequent – not exceptional -- pollution.

159. We emphasise that all the aspects contained in Thames Water’s statement on 16/00424/AOP must be fully addressed and resolved prior to there being any question of planning permission being granted. Such a major issue of infrastructure provision is not appropriately addressed by means of condition. Significant improvements may need to be made and this needs to be provided for in the s106 agreement.

Flooding and drainage

160. A consultee has questioned the validity of the application in these important areas. In their 21 December 2020 letter, the Buckinghamshire Council Sustainable Drainage Team pointed out that:

- a. no fewer than seven Appendices were missing from the Foul and Surface Water Drainage Strategy;
- b. the Preliminary Surface Water Drainage Strategy needed to be revised;
- c. greenfield runoff rates needed to be recalculated, because they did not represent the true position at the site.

161. The importance of flood risk is acknowledged at the highest levels of Government (see, for example, Secretary of State’s ‘*Flood and Coastal Erosion Policy Statement*’ July 2020). The level of inaccuracy in the planning on this topic – from a well-resourced Consortium that has had many years to get it right first time – renders their proposition undependable.

162. There is also a mismatch between the flood plans contained in the application and local knowledge of the risks. The recently-built neighbouring estate of Westongrove has already suffered flooding in this, its second winter. National news coverage of the problems affecting Bedfordshire last month point to the problems that can be created when theoretical models are relied upon too heavily at the expense of a practical understanding of the area.

163. Not only do these problems have a terrible impact on the lives of the people affected, but they also create uncertainty over the availability of insurance for residential and

commercial properties. Which in turn has an impact on future employment prospects and flexibility.

164.If the developer continues to argue that the development will be flood-safe, they need to be prepared to go on record as guaranteeing this, and this should be required e.g., in the Section 106 agreement.

Healthcare

165.There is a serious risk that healthcare provision will be unable to cope with the extra demand created under this application. This makes the proposal in its current form unsustainable.

166.Using the figure of 2.4 persons per household (ONS 2018), the Hampden Fields project would add more than 7,000 residents to the locality. We accept that space for building a health centre is included in the plans. However, even if purchase were to be agreed, this only commits the developer to deliver a ‘shell and core’ building which would require fitting out by the practice to a standard acceptable to the Care Quality Commission to deliver the proposed extension of service, and only after the 1,000th house is occupied. This means that some 2,400 extra people would require healthcare without any alteration to the existing facilities, which are widely acknowledged to be overstretched even in normal times.

167.At present 15.3% of GP positions remain vacant in the UK (‘Pulse’ 2018). Various Government pledges to substantially increase the GP workforce have not been achieved; indeed, the number in post between 2015 and 2019 has fallen (‘GP’ journal, November 2019). It is difficult to recruit GP trainees, partly because the GP workload continues to increase and has been described as “unmanageable”. The application is therefore open to challenge on two counts: first, whether the present local GP workforce is able to accommodate the medium-term population increase and, second, where will the extra staff be found for the proposed expansion?

168.The categories of care to be provided in the new Healthcare centre being proposed at Hampden Fields cannot cover all aspects of secondary healthcare. How likely is it,

therefore, that the local secondary care facility -- Stoke Mandeville Hospital -- will be able to cater for the increase in attendances and admissions associated with these developments? Hampden Fields is only a part of the wider Aylesbury proposals currently under discussion, for some 16,000 houses equating to 38,400 residents. Stoke Mandeville caters for a yet wider population area including the growing area of Princes Risborough. Will further outpatient / ward space be required and if so, where will this be built?

169. The healthcare provision elements of this application have not been adequately thought through and therefore present a further reason for it to be rejected.

Biodiversity

170. The net gain claimed (13.8%) falls well short of the Council's aspiration figure of 20%. This is disappointing for such a prominent part of the long-term plan for a Garden Town and we ask that ways be found to improve it.

171. Of greater concern are the comments from the Senior Biodiversity and Planning Officer at BBOWT, the Wildlife Trust for this area, dated 18 December in which she challenges the methodology used to calculate the biodiversity changes from this application. It is BBOWT's opinion that if the biodiversity calculation were to be completed *"in line with the appropriate guidance, it demonstrates a significant net loss of biodiversity will result from this scheme."* HFAG has no expertise in biodiversity assessment, but it is concerning to see this cogent objection from an organisation that does.

The importance of local democracy

172. In 2015, the Secretary of State agreed with the Inspector that local opposition to the previous version of this scheme and the significant value of the appeal site to the local community were matters to be considered in the overall planning balance.

173. Since that time, the local community have been actively exercised in the current application. Through the Hampden Fields Action Group, they have raised tens of thousands of pounds to obtain independent professional advice on planning, transport, flood risk, and legal aspects so that they could contribute worthwhile, considered, evidence-based inputs to the Council's deliberations. No fewer than 5,000 letters were delivered to AVDC in 2017, which we believe is was a record for a local planning application.

174. Any argument that a smaller number of comments have been made to the latest consultation can be rebutted by the fact that the consultation period was only the legal minimum and covered a Christmas and New Year season when the UK was undergoing all the stress and distraction of a worsening of the Covid-19 pandemic. There was no prospect to hold any public meetings or talk with people to get their views. We would also point out the use of the term "imminently" about the prospect of conclusion of the S106 negotiations (Planning Statement Addendum 3.9 and 1.24). This has further added to the pressure being applied to the public in this case.

175. Despite our efforts over the years to engage in a professional and well-reasoned planning discussion, the response from the Councils has been disappointing. We have made it clear at points throughout this report where and why the public consultation has become a meaningless exercise, bordering on farce.

176. Requests for information have often gone unanswered. A mass of cryptically titled and hugely complex reports have been allowed to be put to the public with little or no 'signposting'. As we have demonstrated many of these reports have obviously not been proofread, presenting confusing inconsistencies. Public consultation has sometimes taken place at times with little regard to fairness and practicality, as in this case spanning Christmas and New Year during an especially tense period of the pandemic.

177. At the time of writing, we are ten days after the consultation formally ended. It has taken the full resources of this group, including engaging expert consultants, to try and work out the confusion. What hope would the public have to absorb all these documents, with their litany of errors, and to have met the deadline for consultation. They would simply give up.

178. This is no meaningful consultation as required in law. The issues raised in this report require a full response, errors need correcting and the public consultation started again.

179. Throughout the last 10 years the community has had to fight its council first and have been dismissed as “not representative of the silent majority who would want this”. It can be seen that the local community affected by this application are not a vociferous minority but actually represent a well-considered majority. Despite all the odds being heavily stacked against them and a council that has already made up its mind they have taken the opportunity to exercise their democratic right to express their views and have done so in a way that has required considerable investment of time, effort and money. We believe that their objections are valid and deserve full consideration, not only in the letter and the spirit of the comments and decision made by the Secretary of State in 2015.

Conclusion

180. The revised application demonstrably fails to answer the fundamental issues raised by the inspector and Secretary of State. In the attempt to shore up this 10 year old plan, and contribute to a 21 year old outdated and erroneous road plan, the evidence has been made to fit. Thus, it has created a road led strategy fundamentally at odds with Garden Town principles, an inappropriate 4 lane highway through a major residential area, urban sprawl, and Severance within the development, while imposing coalescence between the development and the villages.

181. Any objective assessment of the Planning Balance, with appropriate weight placed on the issues raised in this report, would lead to the rejection of this application as it now stands. Far from significant positive weight being placed on the provision of the Southern Link road, a negative weight should be placed on the Transport plan as a whole.

We have pointed out areas in this report where it is difficult to avoid the conclusion that the Council have been highly motivated by a desire to secure the related developments in which they have a definite stake – Woodlands and the SEALR – and that this will have affected the objectivity and diligence with which they have approached the scrutiny of this application.

182. Accordingly, we OBJECT to this application and invite the council to REJECT it.

--- END OF REPORT ---

Appendices:

Transport Planning Practice (“TPP”) report into Local Model Validation Report LMVR (April 2020)

TPP report into SEALR Transport Assessment (June 2020)



Hampden Fields, Aylesbury

High level review of Aylesbury Transport Model Local Model Validation Report (January 2019)

1. Transport Planning Practice (TPP) were commissioned by Hampden Fields Action Group (HFAG) to provide advice in relation to the Transport Assessment (TA) for the Hampden Fields development proposals near Aylesbury.

Purpose of this note

2. The purpose of this note is to inform HFAG about the new Aylesbury Transport Model (ATM) using information from two sources:
 - South East Aylesbury Link Road, Local Model Validation Report, TN01, Final Draft dated January 16, 2018 and prepared for BCC by consultants Jacobs. TPP note that the date of the report should probably be January 2019 and the report appears to have been discussed with DfT.
 - Simon Craine/Joan Hancox Buckinghamshire County Council (BCC) Report to Head of Service.

Context

3. At the time of the most recent planning application, the traffic impacts of the Hampden Fields development were assessed using the Aylesbury Transport Model (ATM). The local traffic model was developed by consultants Jacobs working on behalf of BCC. The software package used is called VISUM. It includes junction delay modelling and speed-flow curves on some links. It is similar to the widely used SATURN traffic model. The model Base Year was 2014.
4. TPP undertook a review of the strategic modelling work to establish whether the model represented a sound basis for the further assessment of the impact of the Hampden Fields proposals on the surrounding highway network.
5. TPP reviewed the Combined Stocklake and Eastern Link Roads Business Case LMVR and Forecasting Report dated May 2015. These were appendices to the Hampden Fields Transport Assessment (TA). These reports were prepared to support the Business Case for the Stocklake and Eastern Link Roads, but they were also used as the basis of traffic forecasting carried out for Hampden Fields.
6. In the TA the name of the VISUM model was re-stated as the "Aylesbury Town Strategic Model", although this is, in fact, the same model which was designed to be used for the Business Case for the ELR. The model forecasts were developed for 2019 and 2034.
7. In general, the traffic model validation followed the guidelines set out in the Department for Transport's (DfT) transport appraisal guidance, known as WebTAG. However, TPP had some reservations about the method used to develop the trip matrices for the VISUM model. The level of data collection undertaken would be adequate to support the transport

modelling and appraisal for the ELR, but was not sufficient to support traffic forecasting over the entirety of Aylesbury.

8. TPP found no confirmation from Jacobs or BCC that the model was deemed suitable for the purpose of looking at wider traffic issues in Aylesbury. Therefore, its 'fitness for purpose' to forecast the impacts of the Hampden Fields development and the operation of the Walton Street Gyratory was questionable.

Walton Street Gyratory

9. At the 2013 Public Inquiry which considered an earlier planning application for Hampden Fields, the impacts of the development on the Walton Street Gyratory were a major consideration for the Inspector who eventually ruled that the developer's appeal against a non-determination by AVDC should be rejected. This Inspector's decision was upheld by the Secretary of State in 2015.
10. Consequently, the ability of the transport models used by BCC to reliably estimate the impact of the Hampden Fields development on this part of the road system is very important. Equally the ability of such models to estimate traffic relief as a result of construction of various proposed transport interventions including various orbital road schemes is critical.

HFAG concerns

11. HFAG have expressed interest in the following specific questions regarding the LMVR and the new model:

a) Has the extensive use of Telefonica (O2) mobile phone data in creating the new demand matrices been handled appropriately and using industry standard techniques ?

b) Is the model calibration and validation suitable for the intended purposes of the new model ?

c) Is the new model adequate to examine the full orbital road strategy for Aylesbury as outlined in the Aylesbury Transport Strategy prepared by AECOM and the Draft Vale of Aylesbury Local Plan (VALP) ?

d) Where does the new model, and BCC proposals for its application, leave the VALP proposals and the Buckinghamshire Countywide Model (BCM) ?

e) Where does the new models, and BCC proposals for its application, leave the Hampden Fields and Woodlands planning applications ? AVDC and BCC have already asked for more modelling from both developers using the updated Aylesbury Transport Model.

High Level Review of Local Model Validation Report

12. This review was undertaken at a high level. It gives an overview of:
 - the way in which the model has been developed;
 - in particular, the methods used to build the trip matrices which differs significantly from the previous model;
 - the standards of calibration and validation achieved; and

- the applicability of the new model in testing the impacts of the Hampden Fields development, the proposed traffic mitigation measures and associated development proposals and road schemes.

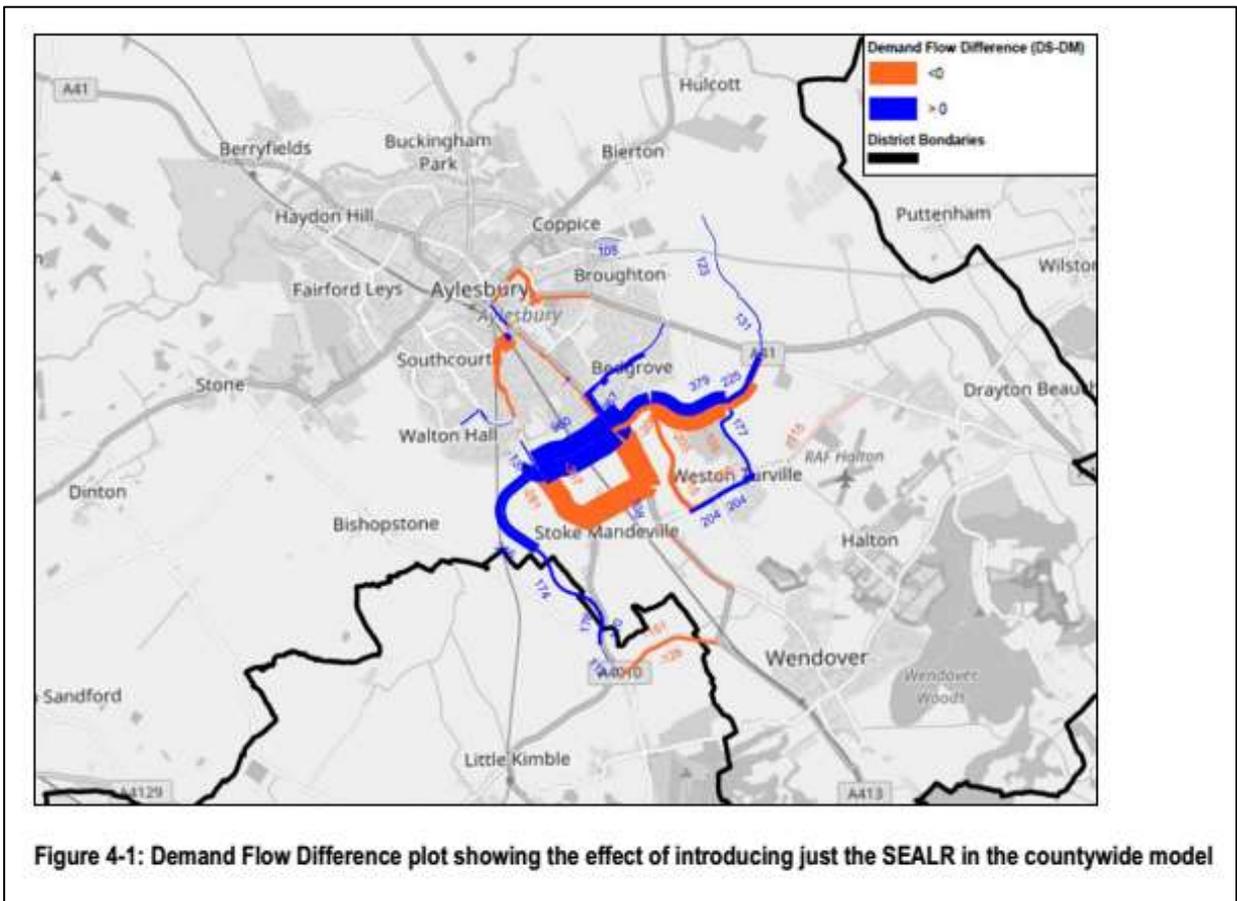
13. No direction communication has taken place between TPP and AVDC, BCC or Jacobs at this stage. Reliance is placed on the report(s) provided.

Name of model and model purpose

14. In the LMVR the new model is named the South East Aylesbury Link Road (SEALR) transport model. Elsewhere in this document the model is called the Aylesbury Transport Model (ATM). ATM will sit within a hierarchy of transport models operated on behalf of BCC. The Buckinghamshire County Model (BCM) covers the whole of the county. The new ATM model covers only a portion of the county. Using BCM a cordon model has been developed as a starting point for ATM. This was, apparently agreed with the DfT. The need for a variable demand model (VDM) has been assessed using a separate scoping exercise which confirmed the need for VDM. VDM is designed to test the impacts of both suppressed traffic and scheme induced traffic on the benefits of the bypass scheme.
15. VDM is relevant because the SEALR scheme is intended to reduce travel costs for highway users compared to the pre-scheme situation, which may create additional "induced" traffic. However, interestingly Jacobs comment that a public transport model is "not considered necessary". Jacobs comment that the nature of the SEALR scheme means there is no competition between public transport and car use and acknowledge that there is a relatively low public transport share in the area. This comment, whilst perhaps accurately reflect the existing situation, seems rather negative given that Aylesbury is going to be planned as a Garden Town. Presumably "carrot and stick" measures will be introduced over time to encourage car users to adopt other modes such as walking, cycling and bus travel.

Model coverage

16. The extent of the ATM transport network was assessed by examining the likely impact of SEALR in terms of long-distance re-routeing. The local impacts of SEALR, as determined from running the BCM, are shown below. It appears that the "without SEALR network" used here includes the Eastern Link Road (ELR) North and South, plus the Southern Link Road through Hampden Fields and the Stoke Mandeville Bypass. It would be useful to clarify this point with BCC.



17. It interesting to note that this test appears to show a very modest reduction in traffic on the A41 and A413 radial routes south of Aylesbury as a result of opening the SEALR. It also shows an increase in traffic on Bedgrove/Camborne Avenue which would not be desirable. Hence, the supposed benefits of SEALR for the Walton Street gyratory are not very clear. This once again confirms that through traffic volumes from north to south east across Aylesbury are not very significant.
18. It can be seen from this diagram that the old ATM model was not very well suited to modelling the SEALR due to the limited network to the south of Aylesbury.
19. This test was used to define the area of road network to be taken as the basis for the new model, which is shown below. To the south the network extends to Wendover. To the north the model extends to Wing. It is noted that RAF Halton is on the edge of the model which could cause problems in the future if major development occurs in this area.

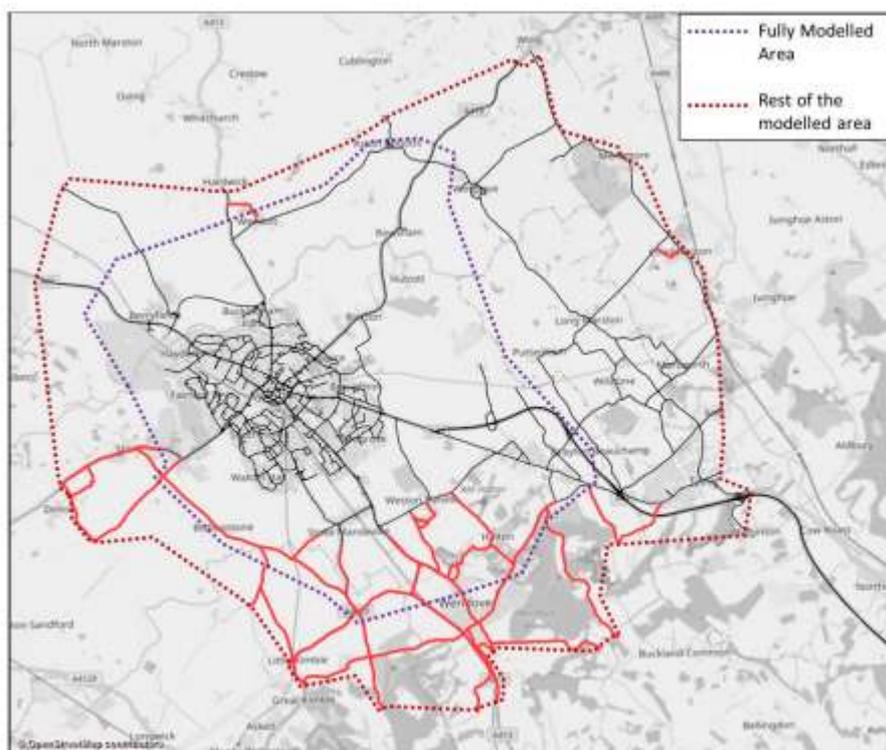


Figure 4-3: Extent of the modelled area

Model Base Year and time periods

20. The ATM model Base Year for calibration and validation is 2017. The model time periods on a weekday are as follows:
 - AM peak 07:00-08:00
 - Inter peak average hour 10:00-16:00
 - PM peak 17:00-18:00.
21. It should be noted that the AM peak period has changed from the previous version of the model. There is no discussion of this change in the LMVR.

Data sources

22. A separate Data Collection Report is referred to in the LMVR. This was not made available at the time of preparing this note. However, the main travel data sources used by Jacobs appear to be those summarised below.

Data Type	Source	Details
Mobile phone data (MPD)	Telefonica (O2)	Matrix building
Traffic volumes	2013, 2014 and 2017 traffic counts	78 calibration counts 50 validation counts
Automatic number plate recognition (ANPR) survey in A413/Stoke Mandeville corridor		Calibration of model assignment and journey times
Journey time data (seven routes)	Trafficmaster and other sources	Journey time validation

Trip matrices

23. The method for forming the trip matrices (estimates of vehicular trips between one part of the study area and another) was as follows:
 - Step 1 – use mobile phone data (MPD) to estimate longer distance movements (mainly >5km).
 - Step 2 – estimate shorter distance trips (mainly <5km) using a synthetic gravity model.
 - Step 3 – merge MPD and synthetic matrices.
 - Step 4 – create cordon matrices for the area shown above.
 - Step 5 – apply matrix estimation to “smooth” the matrices.
24. Steps 1, 2, 3 and 4 are technically complex processes and are described in Appendices A, B and C to this note respectively.
25. The purpose of matrix estimation is to refine estimates of trip movements which have been synthesised (rather than derived from surveys). This means that counts are required on screenlines which intercept intra-sector movements. The calibration screenlines should be designed so that the majority of intra-sector movements are subject to the adjustment process.
26. Matrix estimation should be applied to individual vehicle type matrices because the routes used in the matrix estimation will vary by user class. This means that manual classified counts (MCC) are required at the sites where constraints are to be applied. The use of average vehicle proportions to obtain vehicle splits by type in the absence of MCCs should be avoided where possible.
27. To enable matrix estimation to adjust the prior matrices to approximately the correct overall levels, automatic traffic counts (ATC) are also required at the constraint sites. Thus, the ATCs should be used to give the total vehicles, and the MCCs to provide the split by vehicle type.
28. Hence, matrix estimation is part of the matrix calibration process, but independent traffic counts should be used for validation.
29. The matrix building process appears to have broadly followed WebTAG guidelines. It is noted that the MPD data is changed considerably during the process and it might be

instructive to see the level of change at various stages in the process. Only the changes due to matrix estimation are presented.

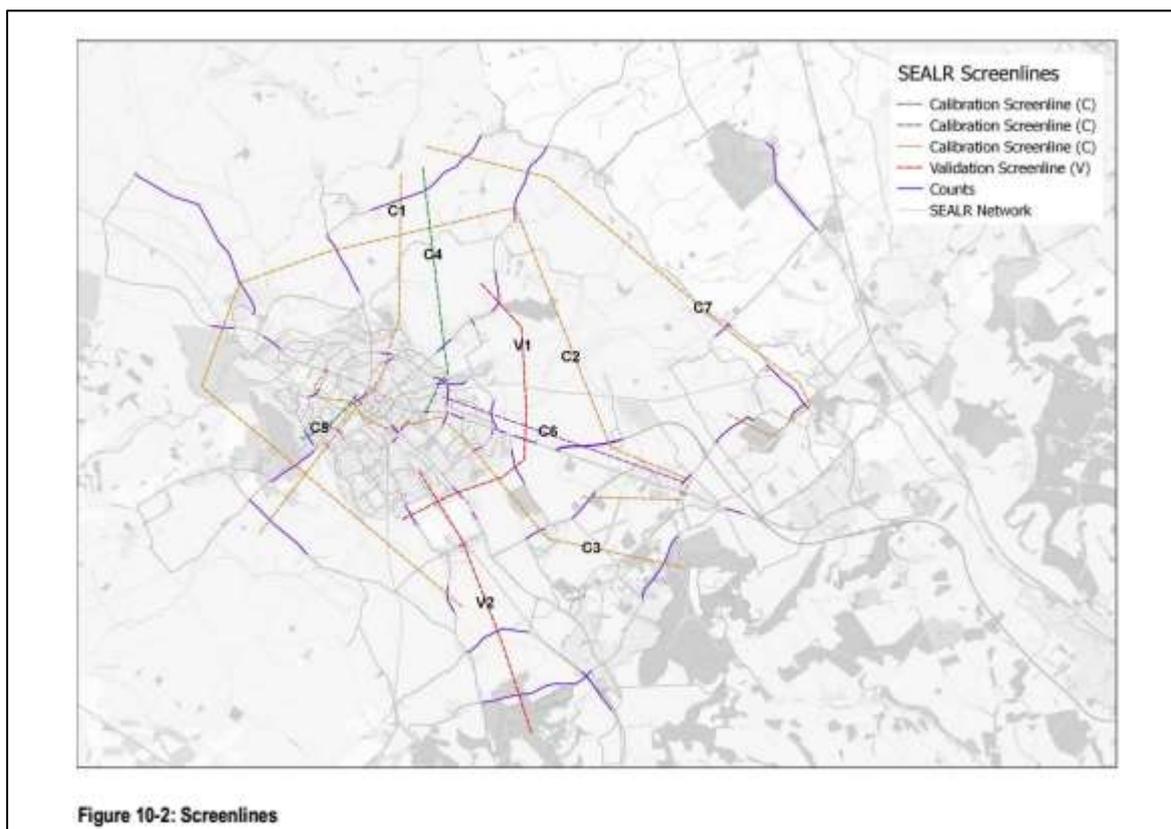
30. TPP note that, at the end of the calibration process, no comparison has been made between the MPD-based matrices and the roadside interview surveys (RIS) carried out on the A418 and A41 in 2014. This would have been a good check on the matrix building process. A select link comparison of the new matrices and the RIS data could be requested from BCC.

Networks

31. The model was developed using the VISUM software. There have been no significant changes here since the previous version of the model, although the software may have been applied slightly differently in some respects.
32. It is beyond the scope and resources of this review to comment in detail on the VISUM model networks, but is assumed that Jacobs have carried out reasonable checks on the junction coding, link lengths etc as would be required by good practice.

Calibration and validation

33. The diagram below shows the screenlines where modelled and observed traffic flows were compared. Those screenlines designated with a C were used for calibration and those with a V were used for validation.



34. In calibration the match between modelled and observed flows is expected to be very good because the model is being constrained using the counts. The validation is supposed to

use independent data and, therefore, will usually not match quite so well with observed flows. Jacobs created seven calibration screenlines with a total of 44 individual road links. Modelled flows on the vast majority of screenlines should be within $\pm 5\%$ of the observed.

35. In this case, all of the WebTAG criteria appear to have been satisfied. The one reservation here is that there only eight links on the validation screenlines, so the number of comparisons is rather limited.
36. There were some additional validation links which were not included in the screenlines. Hence there are 25 validation locations in all (giving 50 links with the two directions) where modelled and observed flows have been compared.
37. It should be noted that Jacobs have compared modelled junction turning movements with observed data at two locations – A41/Aylesbury Road and A41/Bedgrove/Broughton Lane. Whilst these junctions are important to the assessment of the Hampden Fields and Woodlands junctions, it is very surprising that no comparison was carried out for the Walton Street Gyratory and the A413/Camborne Avenue roundabout. Also, it is notable that at the A41/Bedgrove the junction the model significantly underestimates traffic passing straight through on the A41 in both directions, but particularly traffic travelling into Aylesbury.
38. There were seven journey time routes across the town where modelled and observed journey times were compared. Taking the two directions of slow, this gives 14 comparisons in each model period. The new model matches the observed journey times to within $\pm 15\%$ in all but on case.
39. Overall, the calibration and validation of the new model looks satisfactory. Importantly the scope of the exercise has covered a much wider area than with the previous version of the model.

Fitness for purpose

40. Regarding "Fitness for purpose" Jacobs comment as follows:

"As evidenced by the overall calibration/validation statistics, it is considered that the model provides a good overall representation of current travel conditions for those areas included within the modelled network and is therefore appropriate for the purposes of assessing smaller scale schemes and developments. For larger scale schemes, (i.e. those of a similar size to SEALR and the other orbital link road schemes) an initial assessment of the extent of the scheme's impact in terms of reassignment (potentially through the use of the existing Countywide model) and a detailed assessment of the model's validation in the vicinity of the scheme should be undertaken before the model can be said to be fit for purpose for use as an evidence base for a major scheme appraisal of the given scheme."

41. On the last point that is made here, TPP assume that Jacobs are concerned that a full Aylesbury orbital route strategy could have the potential to attract longer distance traffic towards Aylesbury from quite a wide area. Therefore, the extent of the ATM model network would need to be checked for adequacy by using the BCM. This comment ignores the fact that, as far as TPP and HFAG are aware the BCM model has not been updated using the MPD.

Updated Aylesbury Transport Model – Note seeking authorisation from Head of Services

42. This note was dated 03 March 2020 and is attributed to Joan Hancox (BCC Head of Transport Strategy Manager) and Simon Craine (BCC Senior Transport Strategy Officer).

Purpose of the report

43. The stated purpose of this report is to seek authorisation, from the Head of Service, to use the ATM (2020) for the purposes of assessing the impacts of major schemes and development proposals on the county's highway network. The paper recommends that ATM (2020) is formally authorised for application by BCC. This will include using the model to assess planning applications around Aylesbury, including undertaking charged model runs for developers. It will also include supporting the development of a Full Business Case for SEALR, and informing the business cases for additional major schemes within the Aylesbury orbital strategy.
44. As HFAG are aware, for several years BCC has made some of its transport models available to developers for their transport assessments for a nominal charge.
45. The note reminds officers that, in January 2014, BCC commissioned a model to cover the Aylesbury area for the purpose of supporting a business case for Stocklake Link Road and Eastern Link Road (South). The paper points out that, whilst the existing Aylesbury model is fully compliant with the WebTAG standards for the purposes of a business case for those schemes, it required updating in order to attain the TAG compliance appropriate for a Full Business Case for the SEALR scheme. This 2020 model now includes a Variable Demand element and will replace the 2014 Aylesbury model. BCC do not acknowledge that the previous model had limitations in its ability to demonstrate the impact of developments such as Hampden Fields because of the way in which it was developed and in particular the focus on the A418 and A41 corridors.
46. BCC also state that they intend that the ATM (2020) will be used for the assessment of the impacts of development sites in the Aylesbury area. It has therefore been developed with consideration for these purposes as well.

Fitness for purpose

47. BCC state that ATM was constructed in a manner consistent with WebTAG and exceeds DfT criteria for calibration and validation of models in a number of areas. They consider that it is suitable for the purposes of assessing planning applications and business case appraisals in the study area. A secondary purpose intended for the model is that it can be used for other more general assessments of impacts of various transport and development schemes around Aylesbury, and it is considered that the model is fit for this secondary purpose as well.
48. TPP concur with these comments as regards the appraisal of road investment, although any schemes which need to consider public transport or walking and cycling interventions will be outside the scope of the model as configured.

Other considerations

49. BCC rightly acknowledge that it is possible that the new ATM might generate forecasts of highways impacts which are inconsistent with Council policy. Model outputs could be contentious, especially if considered against previous assessments. As the officers correctly state *"The outputs for instance, might show that a development cannot go*

forward (e.g. some site allocations in local plans are not viable), or that an already consented site might have unacceptable impacts on the transport network."

50. They then suggest that modelling alone should not be the key determinant of decision making. It should form part of an assessment process that considers the wider context. These relationships would primarily be managed by the Highways Development Management team in liaison with Transport Strategy and Jacobs.
51. It is assumed that the Service Director has now authorised the approach suggested. This is evidenced by the recent letters sent to the Hampden Fields and Woodlands developers.

Footnote

52. A footnote to the paper the following is stated:

"For larger scale schemes, (i.e. those of a similar size to SEALR and the other orbital link road schemes) it is recommended that an initial assessment of the extent of the scheme's impact in terms of reassignment (through the use of the existing Countywide model) and a detailed assessment of the model's validation in the vicinity of the scheme should be undertaken before the model can be said to be fit for purpose for use as an evidence base for a major scheme appraisal."

53. This wording is taken from the LMVR. As stated elsewhere, it raises the issue that the BCM model now has very different trip matrices from the ATM due to the use of MPD in ATM. Because, to the knowledge of HFAG and TPP, the BCM has not been updated, there is a major inconsistency here. This also has implications for the Local Plan since the BCM was the main tool used as an Evidence Base.

Summary and conclusions

54. The key characteristics of the old and new ATM models which are of relevance to the Hampden Fields planning application and Transport Assessment are summarised in the table below.

Model Feature	2014 ATM Model	2019 ATM Model	Comment
Software	VISUM	VISUM	
Link with Countywide Model	ATM prior matrices derived from Countywide model	No direct link although zone systems should be consistent.	
Base Year	2014	2017	
Model Time Periods	Weekdays 08:00-09:00 10:00-16:00 17:00-18:00	Weekdays 07:00-08:00 10:00-16:00 17:00-18:00	Note change of AM peak period.
Data Collection and Collation	Two origin destination surveys, traffic counts and journey time surveys	Mobile phone data, extensive traffic counts, journey time survey data and automatic number plate recognition surveys (ANPR).	More extensive data collection geographically. High reliance on mobile phone data.
Model Network	Designed to focus on Stocklake Link Road and Eastern Link road proposals	Model road network extended to enable full orbital roads strategy to be assessed.	Extension of network to south and east is helpful to understand wider impacts of orbital strategy. However, RAF Halton (with major

Model Feature	2014 ATM Model	2019 ATM Model	Comment
			development potential) is on edge of model.
Trip Matrix Development	Matrices created using cordon from the Countywide Model. Augmented with data from roadside interview on A418 at Bierton and A41 Aston Clinton Road	Car matrices created from mobile phone data. Short distance trips augmented using synthetic estimates.	High reliance on accuracy of mobile phone data for orbital movements.
Matrix adjustments		Merging of synthetic and mobile phone data. Subsequent matrix factoring.	
Matrix estimation	Extensive use of matrix estimation	Extensive use of matrix estimation	
Area of Calibration and Validation	Mainly focussed on A418 north and A41 east corridor	More comprehensive geographically covering all of Aylesbury	The new model has been calibrated and validated against count data covering the whole of the urban area and some surrounding villages.
Standard of Validation	Meets WebTAG guidelines for link flow and journey time comparisons	Meets WebTAG guidelines for link flow and journey time comparisons	
Forecast Years	2019 and 2034	2021 and 2036	
Induced and Suppressed Traffic	Fixed matrix model	Variable demand model	The new model has the capability to show whether proposed new road infrastructure will cause induced traffic (commonly called "generated traffic"). However, it contains no detailed representation of bus supply or demand in Aylesbury, which is surprising, and no consideration of walking and cycling as alternative modes.

55. Returning to HFAG particular concerns regarding the new model, these are addressed in turn below.

56. a) Has the extensive use of Telefonica (O2) mobile phone data in creating the new demand matrices been handled appropriately and using industry standard techniques ?

In comparison with other methods for sampling travel movements (e.g. roadside interviews or household interview surveys) the use of MPD significantly increases the sample size. However, MPD requires verification and adjustment using existing third party data sources. This should add the level of confidence in the data that is needed, whilst

highlighting potential required refinements. To our knowledge, there is currently no WebTAG guidance or established practice around the issues of using MPD to develop trip matrices. The methods used by Jacobs appear to accord with techniques used on recent Highways England projects such as the Regional Traffic Models (RTM) in which the trip matrices are heavily based on MPD information.

57. b) Is the model calibration and validation suitable for the intended purposes of the new model ?

The latest version of ATM marks a major improvement on the previous model. The matrices have been developed using a mixture of synthetic matrices (based on gravity models) for short distance trips, and mobile phone data (MPD) for longer distance trips. TPP can confirm that the approach used appears to be consistent with good practice following widely accepted methods for checking, adjusting and verifying the MPD. However, no comparison has been made between the MPD-based matrices and the roadside interview surveys carried out on the A418 and A41 in 2014 which would have been a good model check. Leaving this point aside, the level of calibration and validation appears to be consistent with WebTAG guidance.

58. c) Is the new model adequate to examine the full orbital road strategy for Aylesbury as outlined in the Aylesbury Transport Strategy prepared by AECOM and the Draft Vale of Aylesbury Local Plan (VALP) ?

In general, the level of calibration and validation for ATM appears to be consistent with WebTAG guidance and importantly the model has been calibrated across the whole of Aylesbury. It was developed to be capable of assessing traffic impacts from the full Aylesbury orbital road strategy. **There are some localised concerns about the calibration and validation. For example, Jacobs have compared modelled junction turning movements with observed data at two locations – A41/Aylesbury Road and A41/Bedgrove/Broughton Lane. Whilst these junctions are important to the assessment of the Hampden Fields and Woodlands junctions, it is very surprising that no comparison was carried out for the Walton Street Gyratory and the A413/Camborne Avenue roundabout. Also, it is notable that at the A41/Bedgrove the junction the model significantly underestimates traffic passing straight through on the A41 in both directions, but particularly traffic travelling into Aylesbury.**

TPP are of the view that the use of variable demand modelling (VDM) for forecasting with the new ATM model is to be welcomed. However, it is perhaps somewhat surprising that, in a Garden Town, only highway trips and rail trips will be considered in the VDM process. It is understood that walk and cycle initiatives, bus priority, park and ride will be high on the agenda in the Garden Town proposals. This model, as currently formulated, is largely unable to reflect the choices that travellers will face between these modes. One other major concern here is whether RAF Halton should have been given more careful consideration in the model design.

59. d) Where does the new model, and BCC proposals for its application, leave the VALP proposals and the Buckinghamshire Countywide Model (BCM) ?

The Jacobs report does not mention any update of the BCM. The last version of the BCM model, as used for the Draft VALP had a Base Year of 2013. It is strange that the BCM model was not updated when the MPD data was processed. This creates a major inconsistency between the local and strategic models. It also brings into question the

suggestion that the BCM model should be used to examine the wider impacts of further larger road schemes in Aylesbury. There is now a major inconsistency between the ATM and BCM, due to the adoption of MPD in creating the ATM trip matrices. The limitations of the old ATM model and the old BCM model in examining the impacts of the Draft VALP and the orbital road strategy have been illuminated by the SEALR work.

60. e) Where does the new model, and BCC proposals for its application, leave the Hampden Fields and Woodlands planning applications ? AVDC and BCC have already asked for more modelling from both developers using the updated Aylesbury Transport Model.

On 26 October 2017, at an AVDC planning committee, TPP understand that the decision on the Outline Planning Permissions for Hampden Fields and Woodlands was deferred and delegated to officers for approval. No such approval has so far been forthcoming, although some subsequent work on Section 106 agreements was undertaken. AVDC and BCC have recently asked the Hampden Fields and Woodlands developers to re-examine the Environmental Impact of their proposals using the new ATM model. No doubt HFAG will welcome a reassessment of the traffic impacts of these developments using the new modelling tool. In the Joan Hancox/Simon Craine note discussed above, BCC concede that the new model could show new, or more extreme, adverse traffic and environmental impacts from the proposed developments. This could bring the advice presented to the AVDC councillors in October 2017 into question. The impacts of a number of land-use developments and associated transport mitigation measures are likely to be different if reassessed using the new ATM. At the very least, the new modelling could be used to justify additional mitigation measures. Therefore, HFAG's active involvement in the ongoing technical work is advisable.

61. It will be interesting to see whether the COVID19 situation results in a more radical longer-term change in travel patterns (e.g. more business meetings taking place via Zoom). Working from home could become more popular and younger generations may place a higher value on the work-life-balance. The local authorities and developers will need to take these factors into account in making forecasts. However, it will take months and years before the evidence of these changes is available. This suggests that a flexible approach is needed in managing development impacts. Travel Plans will become increasingly important, and continuous monitoring of development impacts will be required.
62. On a couple of additional points, TPP are unclear why the modelled AM peak hour has been changed in the ATM. Perhaps this relates to activity at Stoke Mandeville Hospital. But a clear explanation regarding this change would be helpful, remembering that the model should be representing the busiest weekday AM hour across the town.
63. It would be useful for HFAG to be provided with copies of the new trip matrices in sectorised form (11 sectors as presented in the LMVR).
64. In general, subject to the reservation expressed above, TPP can confirm that the new ATM model provides an improved basis for forecasting the impact of the Hampden Fields development and the associated various road schemes and mitigation measures (including SEALR). It would require further work to develop a model suitable to examine the transport impacts of the Garden Town initiative and the Aylesbury Transport Strategy in full.

Appendix A

Mobile Phone Data (MPD)

Overview

Jacobs have sourced mobile phone data (MPD) to estimate vehicular movements between ATM zones. Trip information in the Highways England (HE) database Trip Information System (TIS) was mainly derived from data extracted by Telefonica (also known as O2 in the UK). The TIS database has been used extensively by Highway England and is considered a reputable starting point for matrix building to cover longer distance movements (>5km).

Mobile phones generate “events” as they communicate with the national cell network. Events are collected on an anonymised basis. The TIS database contains trip records (based on these events) covering the UK mainland for the whole of 2016. The event types which have been collected are the following:

- **Active Events** from the 2G and 3G networks which are triggered by the sending and receiving of calls and texts. 4G is included as the wireless internet access at a much higher speed. It also includes switching the mobile on or off.
- **Passive Events** from the 2G, 3G and 4G networks. This includes movement-related random location updates comprising location area updates, routing area updates, tracking area updates and cell to cell handover events within these types of area. It also includes events arising from changes in the type of network a mobile station is connected to i.e. switching between 2G/3G for voice and 3G/4G for data. These may or may not be movement related. Finally, it includes periodic location updates every few hours.

TIS utilises event data for all O2 mobile phone subscriber’s resident in mainland UK. The data used for the SEALR model covers a ten weeks period including September, October and part of November 2016, excluding bank holidays/half terms. The data includes customers from piggybacking firms that utilise the O2 network, including, Giffgaff, Tesco Mobile, Sky Mobile, Lycamobile and TalkTalk Mobile.

TIS outputs can be produced in the form of trip matrices which relate to the average number of trips, aggregated over a period of at least 20 days. For ATM an aggregation of approximately 50 weekdays and 20 weekend days was used. Trips in TIS are recorded with a start and end time. O2 users generating seven or more events per day on ten different days in each calendar month have their trip details included in TIS. There must also be sixteen days between the date of the first and last qualifying days. Users not meeting these criteria were deemed invalid users and their data was excluded.

The main way of identifying a trip origin or destination (OD) in TIS is via a “dwell threshold”. A threshold was calculated for every cell and for every day/time segment available within the journey time data. The threshold was equal to the travel time across that cell using the slowest possible mode, plus a ten-minute minimum dwell. Where a phone within a cell exceeded the threshold time, it was assumed that this was because the phone was at an origin or destination at the start or end point of a trip.

Advantages of MPD

Jacobs and Telefonica point out that MPD-based OD trip matrices have certain strengths when compared to conventional sources of OD information, such as:

- wider geographical coverage.
- bigger sample size.
- capture of day-to-day variability of trips.
- time and cost savings in the collection and processing of data.

Limitations of MPD

MPD is a relatively new type of travel data. It is not exclusively processed and designed for transport planning purposes. Consequently, there are weaknesses with the data which must be appropriately investigated and addressed. Jacobs acknowledge a number of issues which are summarised below.

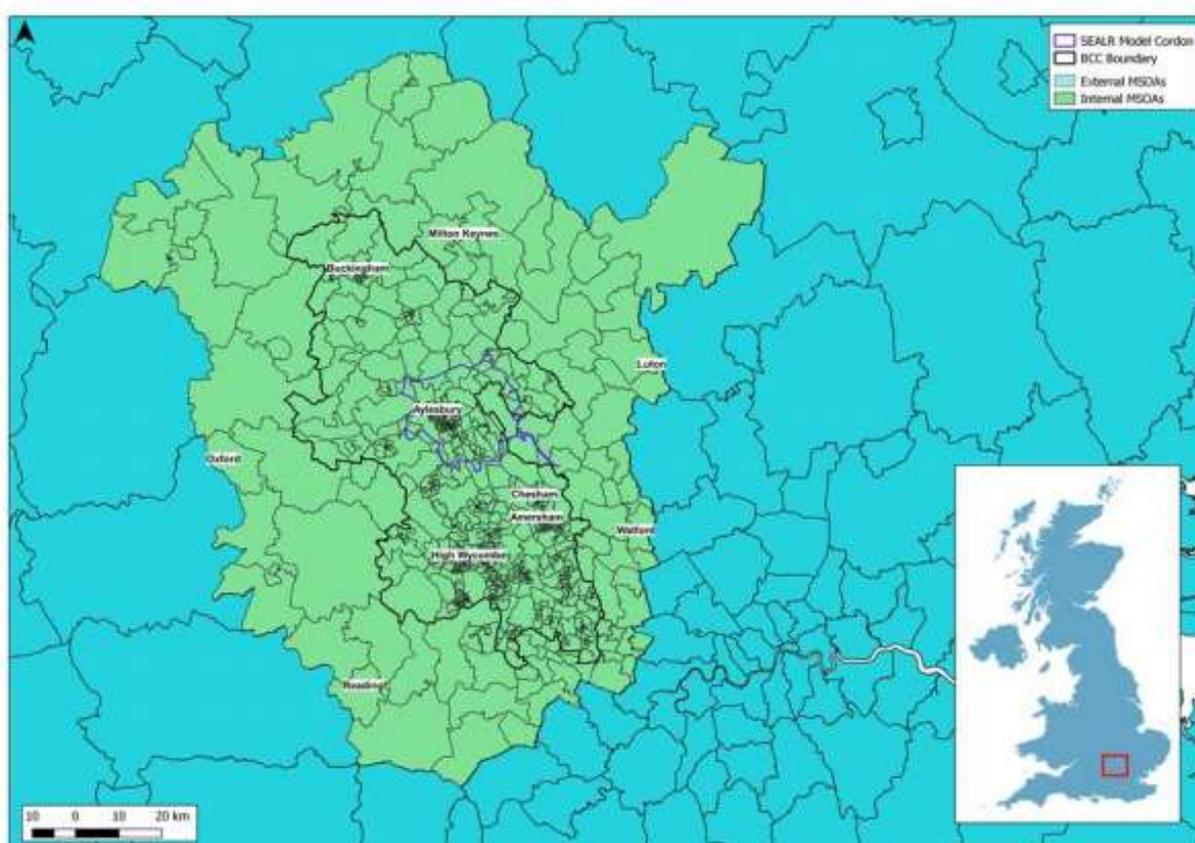
MPD issue	Discussion
Underestimation of short distance trips	Short distance trips are less likely to generate active or passive events. The original data will be biased towards longer distance journeys.
Misidentification of modes, trip purpose, vehicle types and occupancies	Because MPD are generated at phone level instead of vehicle level, there are limitations and difficulties in differentiating between modes and in identifying all people travelling in the same vehicle.
Differentiation of trips and tours	Rules must be set to define when a trip begins or when it reaches a destination. This is typically done based on the amount of time during which a user remains stationary at a single and constant location. Telefonica employ a dwell time threshold to set the end of a trip and the beginning of the next one.
Spatial resolution	The number and spatial resolution of mobile events influences the spatial accuracy of trip ODs. The total number of events created also depend on the type of network. For example, 4G users generate more events than 3G and 2G users. In cases where MSOAs are smaller than mobile phone cells, trip ODs may not be located accurately.
Expansion of MPD data sample	Expansion factors are calculated by comparing the number of users identified as having a home location and the total adult population in the area of interest. To account for different market shares within the area of interest, as well as sociodemographic aspects, this expansion must be checked at a disaggregated spatial level, defined to minimise potential errors at identifying home ends.

MPD Processing

The MPD was available in the form of trips by census Middle Super Output Areas (MSOA). For the SEALR modelling, a specific zone system comprised of MSOA or combinations of MSOA, was defined. Telefonica provided MPD trip matrices based on that zone system.

Trips were extracted for each hourly time period, with longer trips which cross the boundary of the study area being allocated to a time period based on the time they crossed the boundary. The cordon of SEALR is illustrated in Figure 1 -1 from the Jacobs report (shown below). Zones in green, within the blue outline, represent the area within the cordon. To ensure wider traffic patterns were captured in and around Buckinghamshire, data was obtained from a wider area than just the model cordon.

Figure 1-1 below details the MSOA aggregation used for the SEALR modelling.



Trips were segmented by motorised road (including bus and HGV), walk, cycle, and rail. The modes relevant for the SEALR were motorised road and rail only. Rail trips and car trips can be difficult to distinguish and a number of “rules” were used to distinguish between the two modes.

TIS provides trip data in terms of home-based work (HBW), home-based others (HBO) and non-home based (NHB) trips. The home location of a phone user was identified as the cell with the greatest number of observed ODs exceeding six hours’ duration over a rolling six-week period. It was assumed that everyone will sleep once per day, requiring them to be stationary in one place or another for at least six hours per day on seven days per week. Other activities such as work will also generate ODs exceeding six hours, but these should very rarely be greater in number over a six-week period.

To avoid holiday accommodation being mistaken for home, it was assumed that holidays within the UK were unlikely to last more than three weeks. Holidays outside of the UK were irrelevant.

Only UK locations can be a “home” for UK based subscribers who were valid users. Valid users were those who generate seven or more events per day on ten different days in any calendar month. There must also be sixteen days between the date of the first and last qualifying day.

For work locations the assumption was that anyone spending more than three hours in a single location (other than home) on three or more days per week over the six-week window, was likely to be working at that location (or in full-time education). To avoid educational locations being mistaken for work locations, the work locations of all users identified in the month of May were compared with that identified in October and August (of the same year). If these locations were the same, but the work location for August was different or non-existent, then the most likely reason was the summer break at educational establishments. It was then assumed that the work location previously identified was, in fact, an educational location. In these cases, the “work” designation was changed to “education”.

The work location was designated by identifying all non-home locations with a dwell of 3+ hours on any day during the six-week window. This was a ‘qualifying day’. The non-home location with the most ‘qualifying days’ was the work location, provided that the number of qualifying days was equal to or greater than three out of seven of all valid days in the six-week window (a valid day being one where there were seven or more events), and there were at least sixteen days between the first and last qualifying day. This deals with the situation where a user stays in an alternative location to home (for non-work purposes) for more than three out of seven of their valid days during the six-week window. This could result in the alternative location being mistaken as a work location if the remaining number of valid days was less than three out of seven of the total, or the number of work qualifying days amongst the remaining days was less than that at the alternative location.

Data expansion

O2 users represent only a sample of all UK residents (approximately 10-40% across different areas) and the trips made by those residents. The sample required expansion to represent all trips. Expansion was undertaken at a user level rather than a trip level. This requires the calculation of an expansion factor for each user, which was calculated on a daily basis. In order to avoid underestimating trip totals, expansion was based on only those users for whom there was full trip information available on the day in question. This means that all ODs must be identified for the user, including any inferred ODs for motorised road trips (a cell location has been identified for any intermediate ODs inferred as being located between the observed ODs). It will also be necessary for the user to have a defined “home” and for the mode of all trips between ODs to have been successfully identified as motorised road or rail.

Users meeting these criteria were given a grading or rating of ‘1’ meaning that they could be included and given an expansion weighting. User’s not meeting these criteria were graded 2. A user may be graded as 1 on one day and 2 on another day. Each user also required an expansion weight on each day. The expansion factors were equal to the ratio of resident population (from census data) in a geographic area (MSOA) to the number of other users resident in that MSOA (provided that the other users were graded 1 on the day in question). Some users might not make any trips on a given day and will therefore have remained stationary. These users were identified and included in the TIS database as making zero trips.

Mobile phone ownership differs between those in the age 75+ category and those aged between 10-74. Users over 75 would have different travel patterns and would ideally be

subject to a separate expansion factor, However, Jacobs report that it was only possible to identify users over 65 years and these then were expanded separately. Where age cannot be identified, the user was assumed to be under 65. There were a small percentage of children under 10 who own a mobile phone, the data specifies the age of those under 16 by 'age unknown'. It was not possible to categorise those under 10 through occupancy factors for cars and LGVs as these include all persons. Therefore, the travel patterns of those under 10 were reflected in the 10-65 category.

Jacobs and Telefonica state that there is only a slight difference in mobile ownership between higher and lower socio-economic groups. Smart phone ownership differences are more marked and there may be some impact as smartphones will generate more cell ID events than a non-smartphone. However, it was concluded that effort in correction of this issue was not warranted.

Jacobs used a number of data sources within the development of TIS. Some data was used directly in the TIS identification process such as data from the following sources:

- National Travel Survey (NTS) to support mode allocation.
- Census population and employment data to support trip end allocation to zones.
- Census population in the trip expansion process.

Some data was used indirectly to assess the accuracy of TIS outputs, and allowed the refinement of the trip identification process including the NTS 2015, Census 2015 Mid-Year Population Estimates, Census 2011 Workplace Population Estimates, the DfT National Trip End Model (NTEM v 7), Rail WiFi Data, Office of Rail and Road Rail (ORR) Passenger Statistics and DfT and Highways England Traffic Counts.

The various data sources were used to prepare a number of statistics which could be compared with equivalent statistics from TIS. The key areas that these statistics relate to were as follows:

- Person Trip Rates.
- Trip End Totals.
- Accuracy of Home and Work Locations'
- Modal Share.
- Daily Profile.
- Trip Length Distribution.

There is no established practice around the issues of using MPD to develop trip matrices. The methods used by Jacobs appear to accord with techniques used on recent Highways England projects such as the Regional Traffic Models (RTM) in which the trip matrices were heavily based on MPD information.

Verification process

The preliminary processing of MPD was undertaken entirely by Telefonica and O2. Jacobs carried out a series of data checks and adjustments which are described below. A number of sources of third-party data were employed for this purpose including 2011 Census Residential Population and Journey to Work data, National Travel Survey and various traffic count databases within the region.

The output of the verification stage was a series of refined MPD matrices consistent with independent sources and suitable for the subsequent disaggregation. The following key aspects of the provisional data were reviewed and verified:

- removal of rail trips;
- trip ends and trip purpose allocation;
- checks on the symmetry of matrices;
- trip rates; and
- volumetric vehicle flows.

Matrices from Telefonica were compared against 24 hours Census commuting data for all modes, and for just road modes, at different levels of spatial detail. Jacobs state that the comparison with all modes and those representing just road modes was relatively consistent for all MSOAs. MPD trip data was aggregated into matrices that were consistent with the TEMPro Trip-end Database in terms of time periods, modes and purposes. All day trip ODs were compared against NTEM trip ends separately by journey purpose (e.g. commuting) for all zones contained within the model area. These checks were carried out at District level and then by MSOA. In general, Jacobs state that the correlation between the MPD data and the TEMPro estimates was satisfactory both at the 24 hour level and in individual time periods (e.g. AM peak). The exception was the commuting purpose for the AM time period, which fell close to the expected required threshold. It should be noted that TEMPro is a model owned by DfT. Calibrating or validating the MPD data against model data is somewhat questionable, but comparisons can be made.

Synthesised GV trips were removed from non-commuting MPD matrices. This was carried out to look for outliers and identify potential errors with either provisional data and/or synthetic matrices. Similar checks were undertaken with the same aim, but checking against Census commuting data instead.

Since MPD matrices include only trips entering, leaving or staying within the boundaries of the BCC Boundary Cordon, the Census commuting data was filtered for consistency. All day from-home trip origins/destinations and to-home trip destinations/origins were compared against commuting only trips for all zones within the BCC boundaries. This was done first at District level and then at a more detailed level of MSOA. Although the agreement between the data sources was reasonably satisfactory, Jacobs note that the comparisons proved that provisional MPD data, when compared to the Census, underestimates commuting trips.

Similar patterns were found in the remaining capture area – rest of Buckinghamshire and Milton Keynes. Correlations between both data sources remained broadly consistent for the attractions end while proving to be a less accurate match for the home end of the trips. This comparison suggested that home-based trips were being underestimated and that their spatial distribution needed to be addressed as well.

Matrix symmetry (each zone should have roughly the same number of trips departing and arriving over 24 hours) was also checked. Totals were compared for all the different purposes, both at Aylesbury Vale and Buckinghamshire level. In general, symmetry among the matrices was observed to be good.

To prove that errors and inconsistencies on either purpose or spatial allocation remain constant during the different time periods, MPD matrices aggregated at both Aylesbury and around Aylesbury area were compared against 2011 Census Data, as well as general population. Residential population was compared against home-based trip ends from the MPD. Total residential population was matched against HBW and HBO origins for the AM period and destinations for the PM.

The trip rates for home-based trips were compared against TRICS which provides comprehensive data for the entire UK on trip rates per household. These values were factored by the average household size across the UK, UK Census 2011, and compared against the values obtained for the provisional MPD matrices. Jacobs confirmed that the trip rates obtained for HB of around 0.30 to 0.45 trips per person on each 3-hour time period, were slightly smaller when compared against TRICS, whose values tend to range from 0.50 to 0.70 for populations similar to Aylesbury.

To address the issues raised by these comparisons, an iterative process of data adjustment and consecutive checks was applied to convert the initial provisional matrices into final prior matrices. According to Jacobs, overall the Telefonica Data can be described as being accurate enough to be used as the primary source from which to develop prior trip matrices (for input to matrix estimation).

Jacobs report that the final "prior" matrices match reasonably well with third party sources. The MPD data compared reasonably well against TEMPro for the entire county for AM and PM HBW and NHB purposes, before and after the adjustments were implemented. The last verification test included a test-run (model assignment) of the matrices within a previously calibrated version of the model and against up-to-date traffic counts and screenlines. WebTAG Unit M3-1 criteria was applied for checking not only the differences among volumetric counts and modelled flows, but also changes to matrices due to the implementation of the Matrix Estimation processes.

Appendix B

Preparation of Synthetic Trip Matrices

Passenger car trips

The synthetic car trip matrices for Aylesbury Transport Model (ATM) were estimated, by Jacobs, using on an existing methodology developed for the Buckinghamshire Countywide model (BCM) and then refined for the ATM. Trip rates were applied to zonal residential and workplace population to estimate the daily total trip generation of each zone, by trip purpose. The resultant 'trip ends' were then used to distribute trips across all zones in the model using gravity models. The output matrices, by trip purpose, were then converted from people to vehicles (using vehicle occupancy assumptions), from PA to OD, and from a 24-hour period to the specific time periods used in the ATM model.

Population data was gathered using the 2011 National Census. Employment data was taken from Business directory information. These data sources were supplemented with planning completions data from Aylesbury Vale District Council up to 2017 to update the land use to the model base year, 2017.

In BCM for the purposes of generating trip ends, people living within each model zone were split into eleven categories based on age, gender, employment or education status. Also, household types were split into eight categories according to the number of resident adults (1, 2 and 3+) and the level of car ownership (0,1, and 2+). In all, a total of 88 person/household type combinations were defined, and all have trip rates based on NTS data, as used in NTEM (the National Trip End Model). The number of persons in each zone who fall into each person/household type combination was calculated by NATCOP using the updated Census data.

To generate trip ends at the attraction end, data on employment within each zone was required. This included the number of jobs in pre-specified employment categories, as summarised below.

Education	Employment
Primary and Secondary Education	Hotels, Campsites etc.
Higher Education	Retail
Adult/Other Education	Health/Medical
	Services (business & other)
	Industry, Construction and Transport
	Restaurants & Bars
	Recreation & Sport
	Agriculture & Fishing
	Business

The data set contains details of over 4 million workplaces (in theory, this includes all workplaces in the UK) and provides the number of employees by business type and location. Trip ends were generated using bespoke software developed by Jacobs, which incorporates the DfT programs CTripEnd and NATCOP into a single process. The software uses NATCOP to

calculate car availability, and the number of persons in each person type by household type combination for each model zone. The CTripEnd program was then used to combine household structure information with trip rates (by mode of travel for each car availability category) derived from NTS. This produces production and attraction trip ends, by trip purpose and household car availability, at both 24 hour (daily) level and split by time period. The resulting production-attraction trip ends were constrained to match TEMPRO 7.2 at a 24hr, District-wide level, with planning assumptions adjusted in line with the land use determined previously.

The trip ends were calculated for the following standard trip purposes, for each car availability category;

- Home-Based Work (HBW);
- Home-Based Employer Business (HBEB);
- Home-Based Shopping (HBS);
- Home-Based Education (HBE);
- Home-Based Other (HBO);
- Non-Home-Based Work (NHBO);
- Non-Home-Based Employer Business (NHBE); and
- Non-Home-Based Other (NHBO).

Trip Distribution

The trips were distributed using a gravity model.

The gravity model is based on the hypothesis that the amount of travel between two areas can be considered as being proportional to their population, numbers of jobs, schools, factories, offices etc but inversely proportional to the distance (or some measure of the separation or deterrence) between them.

The gravity model used by Jacobs was calibrated to reproduce average trip lengths by journey purpose from NTS. To reflect the diversity of Buckinghamshire zones (in terms of urban/rural characteristics) and the proximity of London, the model zones were categorized using NTS bandings. For each band the mean trip length obtained was calibrated to match NTS values. This gave longer car trips from rural zones. As the NTS data is given for all trips regardless of time period, the synthetic data is similar for all time periods combined. Observed MPD replaced the synthetic data above 5km in length.

The distribution model was applied to 24-hour production and attraction trip ends by trip purpose, to produce a production-attraction (PA) matrix for an average 24-hour weekday period. Productions by time period were used to split the 24-hour matrix into PA matrices by time period, and factors were used to convert the PA matrices into OD matrices. These factors determine for each outbound trip (i.e. from the production end to the attraction end) by time period and trip purpose, what the likely time period and trip purpose of the return trip will be.

Time period splits were based on NTS data. For example, the morning period, home based work trip purpose PA matrix will contain a number of trips between a production (home) and attraction (work). The PA matrix effectively provides the OD matrix for the outbound (from home) trip. The PA matrix once transposed provides details of the return trip (back home from work) and the factors specify in what time period the trip will return, and what the trip purpose would be. The return trip purpose may be different to the outbound trip purpose if for example

the individual stopped at the shops on the way home from work (the return trip purpose would therefore be home based shopping). There are a set of factors for morning peak home based work trips, which determine what the return trip purpose and time period. In the specific example the following proportions were applied to the return trips (note due to rounding figures below add to 99%):

- 63% of trips will return as a home based work trip in the evening peak
- 19% will return as home based work in the interpeak
- 8% will return as home based work in the off peak
- 4% will return as home based work in the morning peak
- 2% will return as home based shopping in the evening peak
- 2% will return as home based employers business in the evening peak
- 1% will return as home based shopping in the interpeak

Similar factors were specified for all combinations of outbound trip purpose and time period. The result of applying the factors was OD matrices by time period and trip purpose. A vehicle occupancy factor was then used to convert the matrices from person trips to vehicle trips. The factors initially used are those in the WebTAG data book.

A further factor was applied to convert from the three-hour peak time period to the modelled peak hour. These factors were derived from traffic count data for Aylesbury. The inter-peak period was modelled by use of an average hour matrix, comprising one sixth of the period demand.

Matrix merging and Trip Length Distribution Calibration

In the MPD preliminary matrices there was a shortfall in trips between 0km and 5km in length. Jacobs' solution was to develop synthetic trip matrices and merge these with the MPD matrices to make up the shortfall of short-distance trips. The approach adopted was to infill the observed trip matrices with synthetic trips for zone to zone pairs of less than 5km. A variety of infilling approaches were tested, including linear combinations of MPD and synthetic trips from 0 to 5km (with full synthetic trips at 0km and full observed trips at ≥ 5 km) and step functions (with full synthetic trips at 0 – 5km and full observed trips at ≥ 5 km). These methods were also tested with a range of trip length distributions (TLD). The final method for infilling was selected based on a comparison of the TLD with Census Journey to Work trip length distribution.

The approach used for generating the synthetic matrices for ATM appears to follow good practice although a detailed analysis has not been carried out.

Goods Vehicles (GV) matrices

The method used to generate trip ends for cars could not be applied for LGVs and HGVs. This was because it relied on use of NTEM data, which is concerned only with private, rather than freight or business trips. Therefore, an alternative methodology was employed.

Heavy Goods Vehicles

Although the observed data, based on the TIS data procured through Telefonica contains GV trips, for use in this model they were removed from the MPD, so as to not double count these trips. The HGV matrix was estimated using the DfT Base Year Freight Matrices (BYFM) dataset,

which provides 24hr HGV movements between English, Welsh and Scottish Local Authority Districts (LADs). The data is for 2006 and is measured in annual flows.

Jobs data was used with typical daily HGV trip rates per job by type (sourced from TRICS) to break down regional trip ends to the zonal values used in the ATM model. This was used to calculate weights which were used as probabilities of each origin and destination zone within a local authority district. The method was used without any adjustment (or deterrence function) for length of trip. The resulting HGV flows were then increased to give weekday volumes by modelled time period.

This gave an estimate of longer distance HGV movements, which primarily use the main road network. Further movements were estimated to reflect the local HGV movements (e.g. deliveries by HGV which typically operate in multi-drop rather than point-to-point mode, or operate over shorter distances). These trips were estimated using a gravity model with a typical short (inter-stop) mean trip length. The HGV matrix was then divided to give average weekday totals and then (using proportions based on traffic counts) to volumes by modelled time period.

Light goods vehicles

The LGV traffic matrices were synthesised using car and BYFM LGV matrices as inputs. The BYFM LGV matrices represent just that portion of daily LGV traffic which were carrying goods. Those carrying equipment or performing delivery/courier type services were excluded from BYFM, so were estimated to obtain total LGV matrices.

Regressions were undertaken using the Buckinghamshire traffic count data to estimate a simple relationship between LGV flows and the synthetic car employer's business (EB) and BYFM LGV volumes. These were determined first by a regression of LGV counts against HGV and Car counts, with the proportion of car trips considered "business" determined using TEMPRO proportions, and then refined by assigning the resultant matrices onto the network and performing regressions of the resultant flows against observed LGV counts.

Different factors were applied to car EB and BYFM LGV matrices, depending on time period, to give a good representation of LGV counts. LGV matrices were estimated using this relationship with synthetic car EB and BYFM LGV matrices for each modelled period.

Calibration of LGV and HGV matrices

HGV and LGV matrices were used as "initial GV matrices", and further work was undertaken to refine them alongside the "initial prior car matrices". This work included assigning these matrices onto the network together with car matrices derived from merging the synthetic and mobile phone datasets. These "initial matrices" were further adjusted, and then used as "prior matrices" which were subject to matrix estimation. The matrices output from matrix estimation were taken forward as the calibrated LGV and HGV traffic flows and used in assignments.

The standard of data available for estimating HGV and LGV movements is inferior to that for car trips. Because many goods vehicle trips are not home-based it is difficult to calibrate the matrices. MPD data does not help very much in this respect. The general approach adopted by Jacobs is relatively standard for the industry.

Appendix C

Adjustment of merged matrices

Demand matrices adjustments

Before matrix estimation was applied to “smooth” the matrices, a separate adjustment process was undertaken on the merged matrices. Jacobs claim that this was to adjust for large scale discrepancies in movements across the modelled area. This process was undertaken by splitting the zone system into a number of sectors, representing broad areas of the model as shown below.

A map of sectors is shown below in Figure 9-29.

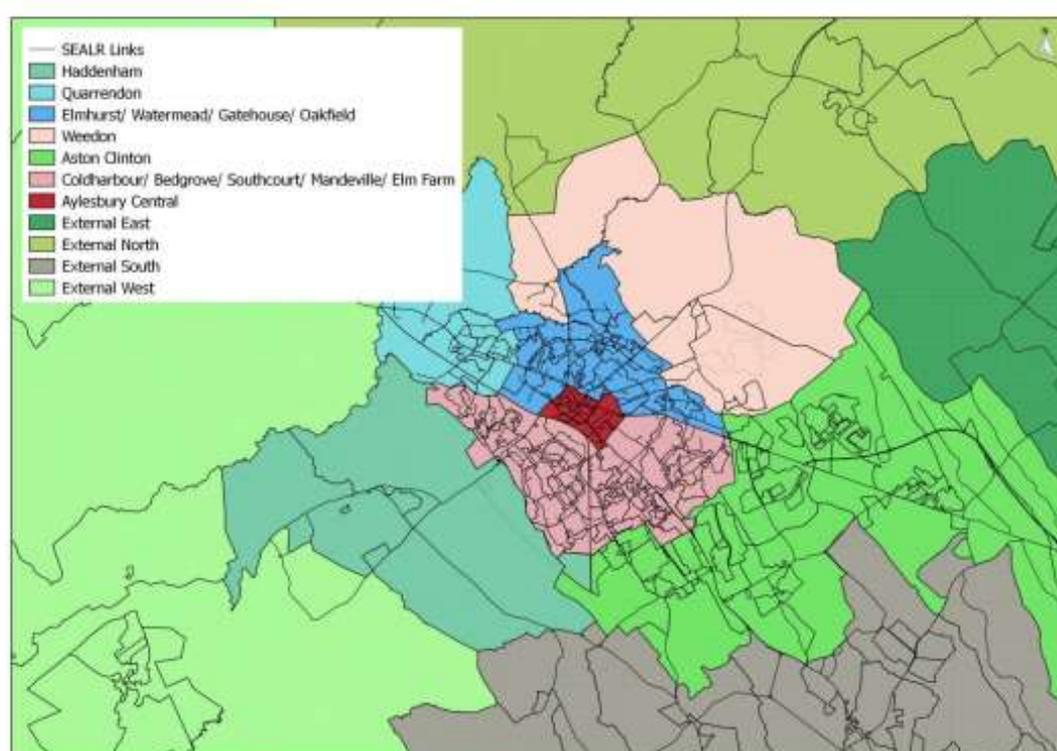


Figure 9-29: Sector Area Map

The merged matrices (part MPD and part synthesised) were assigned to the BCM network. Modelled flows were compared with calibration counts. Then adjustments were made to take into account potential errors in the synthetic demand data and known underestimation of short distance trips by MPD. Checks were carried out to confirm that the adjustments did not significantly change patterns or comparisons against NTEM. Separate adjustments were made for cars, LGVs and HGVs. It was concluded that matrix estimation was required to refine the matrices to traffic volumes.

It is assumed that the process described as “adjustment of merged matrices” was carried out iteratively with the development of synthetic matrices and MPD matrices, although this is not entirely clear from the Jacobs report.

Matrix cordoning

The “merged and adjusted matrices” contained trips for all OD pairs across the country, including those which did not travel through the modelled area. To reduce model run times for the assignment, these were reduced to cordon matrices only. The cordon matrices contain only trips which pass through the modelled area. To achieve this, the “merged and adjusted matrices” were assigned to the BCM network, and the resulting trip routes were cut at the boundary of the modelled area. The model cordon was defined by a series of area of influence tests. Finally trips which entered or exited the cordons were assigned to cordon zones representing each entry and exit point from the cordon. These matrices were taken as “final prior matrices” for matrix estimation.

The process of cordoning is a logical one to reduce model run times for the ATM. However, it is strange that, having built trip matrices for a large area using the MPD, Jacobs have not used the MPD data to update the BCM model.

Hampden Fields, Aylesbury

High-level review of South East Aylesbury Link Road (SEALR) Transport Assessment (Spring 2020)

Introduction

1. Transport Planning Practice (TPP) were commissioned by Hampden Fields Action Group (HFAG) to provide advice in relation to the Transport Assessment (TA) for the Hampden Fields development proposals near Aylesbury.

Background

2. The South East Aylesbury Link Road (SEALR) is a transport scheme being promoted by the recently formed unitary authority Buckinghamshire Council (BC). SEALR was formerly promoted by Buckinghamshire County Council (BCC).
3. A planning application for SEALR (Ref: CC/0015/20) was submitted in March 2020 together with a Transport Assessment. The planning application covers a new dual carriageway link road including: a roundabout junction with B4443 Lower Road, a roundabout junction at A413 Wendover Road, a railway bridge, footway/cycleways, a noise attenuation barrier, street lighting, earthworks and landscaping between the B4443 Lower Road and A413. The site is located on land Between the A413 Wendover Road and the B4443 Lower Road in the Parishes of Stoke Mandeville, Weston Turville And Aylesbury.

Documentation

4. Three relevant transport-related documents have been considered in this review. These are as follows:
 - SEALR Local Model Validation Report (LMVR), prepared by Jacobs on behalf of the highway authority.
 - SEALR Transport Assessment Scoping Study, July 2017, prepared by AECOM on behalf of the highway authority.
 - SEALR Transport Assessment, March 2020, prepared by AECOM on behalf of the highway authority.

In addition, some reference was made to the Environmental Statement (ES) prepared by AECOM, the Planning Statement and the Aylesbury Garden Town Masterplan.

5. The Transport Assessment (TA) is a very lengthy document. With the time and budget available it was not feasible to carry out a comprehensive review. Therefore, particular focus was placed on three appendices as follows:
 - Appendix F: SEALR Model Forecasting Report (TN01|2), August, 2019, prepared by Jacobs on behalf of the highway authority;
 - Appendix G – Highway Impact Diagrams; and

- Appendix H – Percentage Impact Table.

Purpose of this note

6. The purpose of this note is to review the transport aspects of the planning application in respect of the main concerns of HFAG.

Context

7. Aylesbury was awarded Garden Town status by the government on 2 January 2017. Aylesbury Garden Town (AGT) Draft Masterplan was published in 2019.
8. The Town and Country Planning Association (TCPA) emphasises the importance of accessibility, walkability and sustainable movement within their nine Garden City Principles, which include:
 - A wide range of local jobs in the Garden City within easy commuting distance of homes
 - Strong cultural, recreational and shopping facilities in walkable, vibrant, sociable neighbourhoods
 - Integrated and accessible transport systems, with walking, cycling and public transport designed to be the most attractive forms of local transport
9. TCPA guidance on Garden City design and master planning emphasises the need for ease of movement and connectivity, and for the creation of walkable neighbourhoods. Amongst the recommendations are the following points:
 - A Garden City's design must enable at least 50% of trips originating in the Garden City to be made by non-car means, with a goal to increase this over time to at least 60%.
 - Public transport nodes and neighbourhood facilities should be a short walk (no more than 10 minutes) away from every home. Homes should be within 800 metres of schools for children under the age of 11.
 - New Garden Cities should provide a sustainable urban structure of walkable neighbourhoods based around a network of mixed-use town and local centres in which residents can meet most of their day-to-day needs.
10. The TCPA nine Garden City Principles are widely accepted, and the government commitment to these is set out in the revised National Planning Policy Framework (NPPF).
11. The stated transport ambition of the AGT Masterplan is that:

"In 2033 people choose to walk, cycle, or use public transport for everyday journeys within Aylesbury, because it is easy to navigate and has an integrated and inclusive transport system. Residents benefit from active lifestyles and streets are people-friendly places. By 2050 at least 50% of trips originating in the Garden Town will be made by sustainable modes".
12. To put this ambition in context, the 2011 census showed that only 26% of Aylesbury residents travel to work by non-car means. Hence, the local authority faces a major challenge in achieving a target of 50% of travel being made by "sustainable modes".

13. It is widely accepted that encouraging changes in travel behaviour requires a mixture of “carrot and stick” policies. Currently road building to facilitate development appears to be the priority in Aylesbury. This is totally at odds with the TCPA Principles.

Scheme need

14. According to AECOM and BC, the need for SEALR has arisen through the development of High Speed Two (HS2). The alignment of HS2 passes Aylesbury to the south west. This will sever the A4010 Risborough Road south of Stoke Mandeville. As part of the proposals for HS2, a new link road will be developed to divert the A4010 around the west of Stoke Mandeville, connecting with the B4443 Lower Road further north, via a new roundabout. This scheme is referred to as the Stoke Mandeville Bypass (SMBp). Traffic modelling has indicated that SMBp will increase traffic on the B4443 resulting in a worsening of air quality issues at the Walton Street gyratory. The junction is already designated as an Air Quality Management Area (AQMA) because of high traffic levels and emissions related to idling vehicle engines and queueing. BC’s approach to addressing these concerns is to build the SEALR. This will provide a new link to connect the B4443 Lower Road with the A413 Wendover Road and permit a rebalancing of traffic on the radial routes. The scheme programme anticipates SEALR opening at the same time as the SMBp.
15. SEALR is also intended to support the wider growth of Aylesbury which is proposed to have approximately 16,000 new homes up to 2033 (as per the emerging Vale of Aylesbury Local Plan (VALP)). SEALR contributes to BC’s long-term vision to deliver an orbital route around Aylesbury. The intention is to deliver a series of proposed link roads through large housing projects, which are allocated in the Draft VALP. Full details of the longer-term vision, which includes other aspirational highway schemes in Aylesbury, are set out in the Aylesbury Transport Strategy (ATS).

Scheme objectives

16. In the SEALR ES the scheme objectives are set out. These are as follows:
- To enable satisfactory levels of network performance at the Stoke Road gyratory and on the A413, A4010 and B4443 arterial roads after the A4010 realignment is completed.
 - To support the overall quantum of growth within Aylesbury and the surrounding area.
 - To increase the effectiveness of the realigned A4010 as a key north/south corridor.
 - To secure good local connectivity for all road users for movements to, from, within and around Aylesbury.

TPP and HFAG are not aware that the A4010 is designated as a “key north/south corridor” in any published BC policy documents. The M1 and M40 are the key north/south road corridors in this region.

17. AECOM state that the Proposed Scheme will also help in the following ways:
- by relieving pressure on a key blue light route (access to Stoke Mandeville Hospital); and
 - by increasing provision for walking and cycling in the town to encourage active travel and, in turn, reduce car use and congestion.

18. Regarding the last two points, although the scheme does make provision for pedestrians and cyclists, it is highly unlikely that this orbital dual carriageway road will encourage local people to reduce car use, as envisaged in the AGT Masterplan. Regarding Stoke Mandeville Hospital, the scheme does not benefit the main access junction from the B4443 Lower Road, as will be explained.

TA Scoping Study

19. Consultants AECOM were commissioned by BC to develop a full business case, preliminary highway design and a planning application for the SEALR. The purpose of the Scoping Note was to agree with BCC's Highways Development Management (DM) Team the content, level of detail and proposed assessment to be included in the TA.

The proposal

SEALR will connect with the other road schemes that are planned for this part of Aylesbury, namely the Southern Link Road (SLR) and SMBp. AECOM state the following at the beginning of the Scoping Note:

"The link road will ... follow a south-westerly to north-easterly alignment and will consist of a two-lane dual carriageway and be subject to a 40mph speed limit along its extents. A shared 3m wide footway/cycleway will run along the northern side of the carriageway and a 2m footway will be provided along the southern side. A new bridge structure is proposed across the London to Aylesbury rail line which bisects the SEALR approximately mid-way along its length. A maintenance access will be provided to the west of the bridge. This will also permit the future aspiration for a cycle link to Stoke Mandeville Hospital. The SEALR will terminate at a roundabout junction in the east. This four-arm roundabout will connect Wendover Road (A413), the Southern Link Road and the SEALR. The link road will only be lit at the junctions at either end of the scheme. The preliminary design of the SEALR is currently being developed."

20. It is proposed to construct four arm roundabouts at either end of the SEALR providing the necessary connections.

Transport modelling

21. The appropriate traffic model to be used to assess the impacts of the scheme was judged to be the Aylesbury Transport Model (ATM). This has previously been used to assess impacts from the Hampden Fields development. It was originally proposed that the new ATM model (described in the review of the LMVR recently carried out by TPP) would be in a suitable state of readiness by Summer 2018. The planning application for the SEALR was due to be submitted in March 2018. Therefore, the model would not have been ready for this date. Hence, it was proposed that a provisional model be developed that could be utilised within the planning application. This provisional model would include the additional model coverage requested by the Department for Transport (DfT) as well as an updated calibration and validation exercise utilising traffic data collected in 2017. The model would be developed for a weekday AM and PM peak hour only.
22. Following discussions between BCC, AECOM and Jacobs, it was proposed that 2020, 2021 and 2035 scenarios with and without SEALR would be created, using the provisional model, for the purposes of the planning application. However, these scenarios and forecast years were subsequently revised as described below.

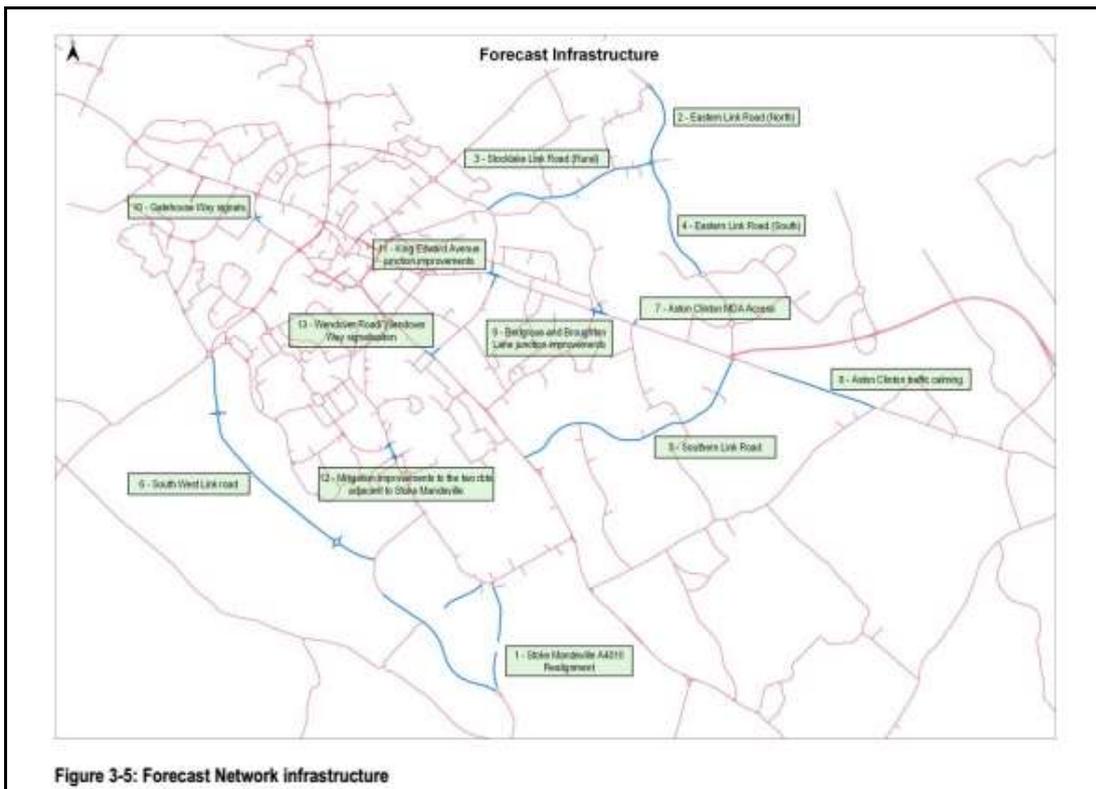
Junction assessments

23. It was intended that the output from the ATM model be used to provide link and turning flows for the AM and PM weekday peak hours only. Further analysis was to be carried out at junction level to better understand the impacts of the scheme. The BCC Highways DM team indicated that the TA should include assessment of the junctions at either end of the scheme as well as wider impacts in particular on Lower Road and at the Walton Street gyratory.
24. For the Scoping Study, flow difference plots, presumably from the old ATM model, were used to identify locations where an increase in traffic flow might be expected due to SEALR. BCC confirmed that junction capacity assessments would probably be required at the following locations:
- Proposed A413 Wendover Road Roundabout
 - Proposed B4443 Lower Road Roundabout
 - A41/Park Street (Tesco Roundabout)
 - A41/A4157 Oakfield Road/King Edward Avenue Traffic Signal Junction
 - A41/Bedgrove/Broughton Lane Junction
 - A41/New Road Priority Junction
 - A41/Aston Clinton Road Roundabout
 - A413 Wendover Road/Walton Road/B4443 Stoke Road Gyratory
 - A413 Wendover Road/Camborne Avenue Roundabout
 - A413 Wendover Road/Silver Birch Way Roundabout
 - B4443 Lower Road/Winterton Drive Roundabout
 - B4443/Churchill Avenue Roundabout
 - Woodlands (Eastern Link Road (South)) and Hampden Fields (Southern Link Road) Site Access / A41 (from 2021)
 - A418 Oxford Road/Ellen Road Roundabout (from 2021)
 - A418 Oxford Road/Coldharbour Way Roundabout (from 2021)
 - A413/A418 Link Road junction with A418 Oxford Road (if a suitable junction design was available at time of assessment (from 2034).
25. The defined scope of the junction assessment in the Scoping Report appears reasonable.

Transport Assessment - Scenarios considered

26. In preparing the TA, and supporting traffic modelling, the methodology from the Scoping Report was slightly modified. For the traffic modelling undertaken by Jacobs, the initial forecast year was set as 2021, the anticipated opening year for SEALR. For 2021 two development scenarios were modelled:
- Scenario 1 with the Southern Link Road and Eastern Link Road and partial completion of the associated development (Hampden Fields and Woodlands; and

- Scenario 2 excluding Southern Link Road and Eastern Link Road and associated development.
27. **In TPP’s opinion the 2021 Scenario 2 forecasts are the most useful because it is now highly unlikely that the Woodlands and Hampden Fields developments will obtain full planning permission and that the transport infrastructure will be in place in this timescale. Also, planning permission for SEALR should be judged on the merits of the road link as a “stand-alone” scheme.**
 28. A second forecast year of 2036, 15 years after the scheme opening, was also developed.
 29. For each forecast year and demand scenario a “with scheme” (also known as ‘do something’ (DS)) and “without scheme” (also known as ‘do nothing’ (DN)) model were built. SEALR is the “scheme” referred to here. This approach enables the impacts of the scheme to be isolated.
 30. It is important to understand that in the 2036 scenarios (DN and DS) a new link road between the A4010 and A418 west – known as the South West Aylesbury Link Road (SWALR) is assumed to be open to traffic. A planning application has been submitted for the associated South West Aylesbury development. It is assumed that the developer will deliver the SWALR.
 31. The location of the various proposed road links included for 2036 is summarised in the diagram below.



Inset 1: Proposed road schemes from Transport Assessment Appendix F

32. The land-use assumptions and network assumptions used for the two forecast years and six scenarios are summarised in the table below. It should be noted that, in the TA, AECOM have used Jacobs 2021 Scenario 1 as their Scenario B, and Scenario 2 as their Scenario A, which is somewhat confusing.

Table 1: Forecast scenarios

	2021		2036
	Jacobs Scenario 2	Jacobs Scenario 1	
	AECOM Scenario A	AECOM Scenario B	
Land-use development assumptions	Berryfields Aylesbury East	Berryfields (+125 units) Aylesbury East (+175 units) Woodlands (74% employment) Hampden Fields (60 households)	Berryfields (full) Aylesbury East (full) Woodlands (full) Hampden Fields (full) Broughton (full) Aylesbury SW (full) S of Aylesbury (full) RAF Halton (full)
Do-Nothing highway assumptions	Stocklake Link Road Stoke Mandeville Bypass Eastern Link Road (N)	Stocklake Link Road Stoke Mandeville Bypass Eastern Link Road (N) Eastern Link Road (S) Southern Link Road	Stocklake Link Road Stoke Mandeville Bypass Eastern Link Road (N) Eastern Link Road (S) Southern Link Road South West Link Road
Do-Something highway assumptions	As Do-Minimum plus SEALR	As Do-Nothing plus SEALR	As Do-Nothing plus SEALR

33. **It is HFAG and TPP’s understanding that the 2021 Jacobs Scenario 1 (AECOM Scenario B) cannot occur. This is because the funding of SEALR is dependent on the Section 106 (S106) Agreement with the developer of Hampden Fields.** The S106 funding will not become available until the 1200th house on the Hampden Fields site is occupied. The contribution commitment required from Hampden Fields is phased as follows (April 2019 draft S106 Heads of Terms for BCC (BCC Schedule 2, para 12):

Contribution of £8,821,000 to SEALR, phased as follows

- £2.9m after each of 1200th, 2000th and 2,700th occupation OR one month after the letting of the SEALR contract if that is later.
- Lower Road Improvements contributions similar phasing, each for £268k.

Contributions from the Woodlands development are written into the appropriate S106 Agreement.

34. Both SEALR and the Lower Road improvements from Hampden Fields depend on ELR(S) being started or the contract let, before the 2,600th occupation. The Station Road/Risborough Road junction S106 contribution has similar phasing, each for £317k or when the contract for SEALR is let.

35. It is concluded that the earliest year that the developer funding for SEALR can be obtained from the Hampden Fields developer is 2025.

36. So, the 2021 Jacobs Scenario 1/AECOM Scenario B, which includes a completed SEALR but with only 60 households at Hampden Fields, is impossible, unless BC are saying that the £2.9m can be obtained from elsewhere.

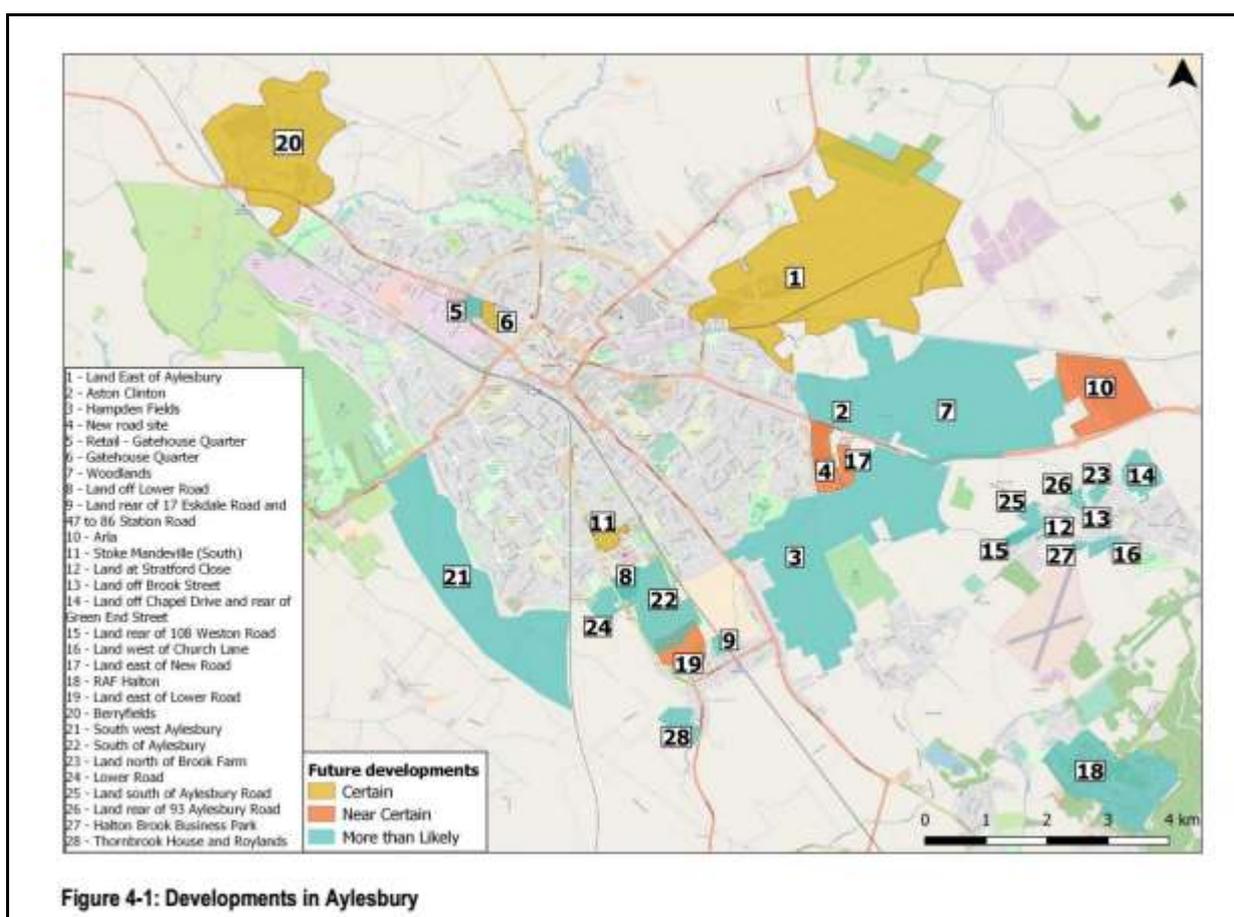
Transport Assessment Appendix F – SEALR Forecasting Report

Modelling tool and Base Year

37. The SEALR TA is dated August 2019. Hence, it is assumed that the TA was delayed for some reason. It should be noted that Jacobs were undertaking the strategic modelling necessary to support a full business case for the SEALR and to provide an appropriate evidence base for a planning application. It appears that the SEALR modelling has used the latest version of the ATM as discussed in the Local Model Validation Report (LMVR). The LMVR is reviewed in a separate document prepared by TPP. This model has a Base Year of 2017.

Forecasting approach

38. According to Jacobs, the SEALR forecasts were developed based on a methodology which will be followed for all future development management purposes. Consistent with the expectations of BCC's Highways DM team, the forecast demand was fixed rather than variable. In other words, there is no allowance in the forecasts for new road trips to be induced by increased road capacity, or suppressed by lack of capacity. However, it should be noted that there may be issue in the use of "demand" and "actual" forecasts flows from the model which is discussed later in this report.
39. The forecasting approach used for the full business case was set out in the Model Specification Report (MSR), Jacobs claim that this the methodology is consistent with WebTAG Unit M4 guidance. For the purposes of the planning application it was agreed with BCC's Highways DM team that full WebTAG compliance was not required. A Variable Demand Model (VDM) approach was not used and total housing and employment growth was not capped to NTEM levels. TPP have no particular concerns about these assumptions at this stage.
40. Forecast land use growth was derived from the Department for Transport (DfT) National Trip End Model (NTEM) v7.2 and planning data supplied by Aylesbury Vale District Council (AVDC). This data identified the locations of potential new development, the size and type of development proposed and the likelihood of each development being realised. This data was processed into an uncertainty log. Consideration was given towards the amount of development that should be included in the modelled forecast years, as well as the proposed future transport schemes and the level of certainty of those schemes coming forward.
41. The major development sites included in the year 2036 modelling are shown on the diagram below which is taken from the Jacobs report. The developments were modelled using estimates of traffic generation based on those defined within a Transport Assessment (TA) for each particular development, if available, or otherwise based on trip rates from a TA for a similar development.



Inset 2: 2036 Land-use developments in Aylesbury from Transport Assessment Appendix F

42. The trip distribution for developments was based on the trip pattern for existing land use parcels, as included in the Base Year model. These are known as 'donor zones'. All development planning data for specific residential developments was discounted from NTEM/TEMPro trip end growth. In agreement with BCC Highways DM team none of the planning data for jobs was discounted.
43. The resulting background growth forecasts were applied to the 2017 Base Year trip ends to create forecast target trip ends for background growth for car users. The DfT's Road Traffic Forecasts 2015 (RTF15) were used to determine forecast background growth and trip ends for LGVs and HGVs. The base year matrices were then furnished to match the forecast target trip ends and these were assigned to the network.
44. The general matrix forecasting methodology follows standard practice and appears sound, although TPP have some concerns about the application of the methodology.
45. There are some anomalies in the Jacobs forecasts which emerge in Appendix C of the Jacobs note. For example:
 - the 2021 Scenario 1 AM peak LGV matrices seem to show reductions in flow when compared with the 2017 Base Year.

- the 2036 AM and PM peak LGV matrices also show many reductions in sector-to-sector movements when compared with the 2017 Base Year.
46. The changes shown in the Jacobs report imply an error in the matrix building or in the preparation of the report.

Traffic growth forecasts

47. The percentage growth in traffic demand estimated by Jacobs is summarised below. It can be seen that the total growth in car trips between 2017 and 2036 is forecast to be above 40% in almost all categories. Despite the comments above, growth in commercial vehicle trips is forecast to be significantly higher. It should be noted that the growth in car trips allows for developments such as Hampden Fields and Woodlands being fully built out by 2036.

Table 2: Matrix growth forecasts used for SEALR Transport Assessment

Time Period	Trip purpose/ vehicle type	% Growth by year and scenario from 2017		
		2021 Scenario 1	2021 Scenario 2	2036
AM	Car – Commute	12%	10%	38%
	Car – Other	15%	12%	41%
	Car - Business	15%	14%	51%
	LGV	35%	33%	93%
	HGV	48%	43%	83%
PM	Car – Commute	14%	12%	41%
	Car – Other	17%	15%	45%
	Car - Business	18%	16%	55%
	LGV	35%	32%	95%
	HGV	27%	27%	61%

Impact of SEALR

48. The impact of the SEALR, in terms of traffic re-routeing, was checked by TPP. The method used was to quantify the flows on four existing points where the road system crosses the London Marylebone-Aylesbury railway line (a useful screenline running on a perpendicular axis to the road scheme), plus the SEALR itself. This analysis is shown below. It should be noted that any flow changes occurring on Griffin Lane or Raban Lane cannot be ascertained from the Jacobs reports.

Table 3: Forecast impact of SEALR on traffic flows at railway crossing screenline points

Road link	DS-DN two-way flow change (vehicles per hour)					
	AM Peak hour			PM Peak hour		
	2021 Jacobs Sc1	2021 Jacobs Sc2	2036	2021 Jacobs Sc1	2021 Jacobs Sc2	2036
Griffin Lane/Raban Lane	Numbers illegible in Jacobs Reports					
A418 Oxford Road	-250	-150	-200	-400	-150	-400
B4443 Stoke Road	-400	-350	-300	-550	-400	-550
SEALR	1750	1450	1800	1900	1500	1900
A4010 Station Rd	-550	-400	-700	-500	-450	-850
B4009 Nash Lee Rd	-550	-400	-550	-600	-350	-550
Total	0	+150	+50	-150	+150	-450
Note: flow changes should sum to zero unless there are flow changes outside the area presented in the Jacobs reports						

49. As would be expected, the forecasts indicate that SEALR will remove traffic from the A4010 Station Road and the B4443 Stoke Road railway crossings. However, it is also shown to remove traffic from the A418 Oxford Road and B4009 Nash Lee Road. However, in the 2021 Scenario 1 AM peak forecasts there is an increase in traffic of over 100 vehicles per hour (vph) through the village of Bishopstone, which would be undesirable. This traffic is removed from the A418 Oxford Road. Therefore, it would alternatively pass through the Walton Street gyratory.
50. In general, the screenline results appear reasonably plausible in terms of the amount of traffic transferring to SEALR from the competing routes crossing the railway. However, there are anomalies for example:
- in the 2021 PM forecasts there are net reductions of 150 vph across the screenline due to SEALR. These appear to be due to reductions in flow on Griffin Lane when SEALR opens (see Appendix B to this report). These changes are not explained or justified in the Jacobs report.
 - the 2036 PM forecasts shows a net increase of 450 vph across the screenline which requires explanation from AECOM/Jacobs.
 - it is noticeable that in the 2036 assignments there is a big increase in traffic to the south of the study area on Chalkshire Road (+300 vph) in AM and PM peaks when SEALR is opened which requires some explanation from AECOM/Jacobs.

Transport Assessment Appendix G and H – Highway Impact Diagrams and Percentage Impact Table

51. For ease of reference, TPP have generally sourced forecast flows from the TA and the Environmental Statement. No information on forecast daily traffic flows could be sourced,

other than the diagrams shown in Appendix B to this report. These were taken from the Air Quality report in the ES.

Transport Assessment - Main document

Report structure and scheme context

52. The TA is structured as follows:
- Section Two provides an overview of relevant national, regional and local transport policy;
 - Section Three outlines the existing conditions in terms of pedestrian, cycle, public transport and vehicular access and provides a review of the most recently available personal accident injury (PIA) data in the vicinity of the site;
 - Section Four describes the proposed development in terms of design, landscaping and access;
 - Section Five sets out the initial transport network assessment undertaken;
 - Section Six sets out the results of the detailed transport network assessment undertaken; and
 - Section Seven provides a summary and conclusion for the report.
53. This review has focused on the last three sections of the TA. However, in Section 3, at page 31, AECOM make some useful observations on the existing road conditions in south Aylesbury.

"The regional significance and central location of Aylesbury combined with above national average levels of car ownership results in high demand on key arterial routes into the town centre. The absence of orbital routes around the town further contributes to congestion on key arterial routes in the town as through trips merge with trips travelling to and from the town centre. Traffic flow data (all vehicles) extracted from the Buckinghamshire Countywide VISUM Transport Model (2013 baseline year) illustrate the significance of both the A413 and B4443 as primary corridors from the south. The B4443 (Stoke Road) has traffic flows among the highest in Aylesbury with around 2,200 vehicles in the AM peak and 2,000 vehicles in the PM peak..."

The majority of these arterial routes are single carriageway and as such lack resilience during peak periods or at time of incidents. This consequently leads to poor journey times and reduced journey time reliability. If link stress exceeds 85%, the link is nearing capacity with delays and queues expected. It is evident that both the B4443 and A413 are operating at or over capacity during peak periods especially at the Stoke Road gyratory. The B4443 also experiences stress on links around Stoke Mandeville hospital."

54. The reference to "through traffic" above is made without support from any empirical evidence. The available evidence from ATM suggests that there is very little true through traffic on Aylesbury roads in the peak periods. The congestion is overwhelmingly caused by local traffic, making short trips (e.g. commuting, school trips and shopping), with one or both trip ends being located within Aylesbury or the neighbouring villages. In fact, since the A413 Wendover Road and the B4443 are both congested at peak times, transferring traffic between these two radial routes is unlikely to solve the local problems of congestion and poor air quality.

Detailed transport network assessment

55. The starting point for the junction capacity assessments carried out by AECOM is mainly old traffic surveys (e.g. from 2014) factored to 2018 levels. Apparently, these were supplied by BCC. AECOM do not comment on the provenance of the surveys. At the Walton Street gyratory the source of the base flows is not clear, which is a major concern. It is highly surprising that a consistent set of junction surveys was not undertaken for the ATM calibration/validation or the TA. This appears to have been the intention when the Scoping Report was written. Furthermore, AECOM claim to have “validated” 2018 conditions at those junctions where traffic survey data were available, but TPP can find no evidence of any such checks for the Walton Street gyratory.
56. The method by which AECOM factored-up the 2018 flows to represent conditions in 2021 and 2036 is not adequately explained. It is assumed that the ATM model forecasts were used to provide suitable growth factors for each junction approach. We note that AECOM have modelled an AM peak period of 08:00-09:00, rather than the period which is taken as the peak in ATM (07:00-08:00). This is a major discrepancy.
57. AECOM have carried out detailed junction assessments at the locations where Jacobs forecast that traffic flows on a particular junction approach will change by more than ±5% as a result of the introduction of SEALR. In general, the impact of SEALR, as shown by the traffic modelling, is to reduce flows at the majority of junctions. Therefore, no particular comment on the junction capacity assessments is made at this stage. A summary of the percentage changes in flow by junction is given in Appendix C to this note.
58. The traffic modelling carried out by Jacobs suggest that the Do-Nothing flows at the Walton Street gyratory can be reduced to some extent by constructing the SEALR, as shown in the table below. In the 2021 Jacobs scenario 2 without Hampden Fields and Woodlands (plus ELR(S) and SLR) – AECOM Scenario A - the reductions are quite modest at around 5% to 6%. Similarly, in the 2036 forecasting the impact of SEALR is shown to be much fairly marginal at 2% to 4%.

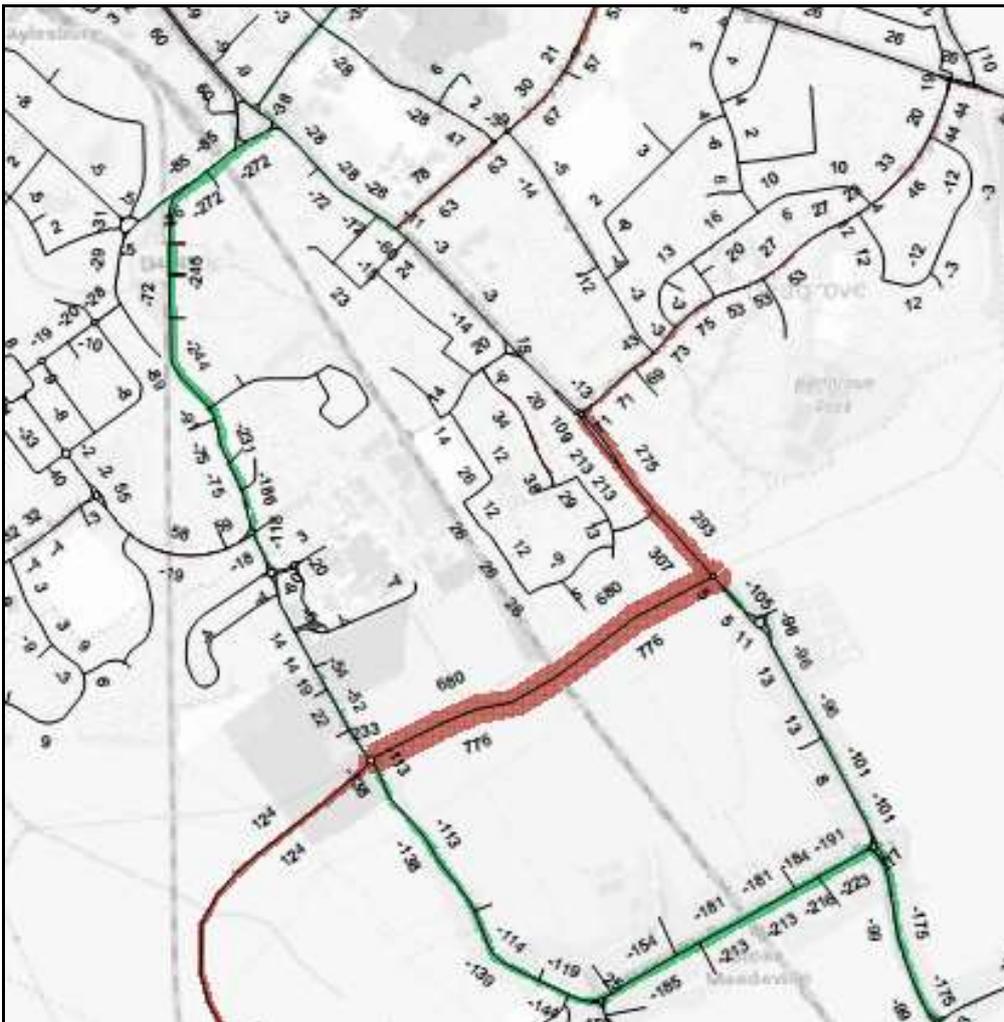
Table 4 Walton Street gyratory – forecast junction flows

Year/ Scenario	AM				PM			
	vehs per hour				vehs per hour			
	DN	DS	Diff	%Diff	DN	DS	Diff	%Diff
2021 AECOM Scenario A	4103	3899	-204	-5.0%	4244	3978	-266	-6.3%
2021 AECOM Scenario B	3780	3437	-343	-9.1%	3871	3538	-333	-8.6%
2036	4057	3980	-77	-1.9%	4093	3935	-158	-3.9%

Note:
 Jacobs 2021 Scenario 1 = AECOM 2021 Scenario B
 Jacobs 2021 Scenario 2 = AECOM 2021 Scenario A

59. In reviewing the 2021 Jacobs Scenario 1 (AECOM 2021 Scenario B) AM peak results, there is an increase in traffic of over 100 vph through the village of Bishopstone, when SEALR is opened. This would be undesirable and, if traffic management measures were taken to prevent such routeing, traffic would alternatively pass through the Walton Street gyratory negating the benefit of SEALR.

60. In reviewing the 2021 Scenario 2 (AECOM 2021 Scenario A) forecasts, which are more of a "Stand-Alone" test of the impact of SEALR, TPP note that the modelling shows significant volumes of traffic diverting onto Camborne Avenue/Bedgrove and Wendover Way. In total about 200 vehicle per hour (vph) will be diverted. This is shown in Appendix D of Appendix F of the Transport Assessment (summarised in the inset below).
61. A traffic increase of this nature is unlikely to be acceptable to local residents. Mitigation measures would be required. Measures to prevent traffic increases on these roads, will tend to push traffic back towards the Walton Street gyratory. This would negate the supposed benefits of SEALR.
62. In the 2021 Scenario 2 (AECOM 2021 Scenario A), there will also be a considerable increase in traffic on the A413 Wendover Road between SEALR and Camborne Avenue. The plot below shows an increase of 600 vph in the AM peak and over 700 vph in the PM peak. This would be undesirable for local residents and increase congestion on this section of the radial route.
63. A similar but, less marked increase in flow on the A413 north of the SEALR junction occurs in the 2021 Jacobs Scenario 1 forecasts. In the PM peak this amounts to 500 vph and in the AM peak about 200 vph.



Inset 3: From Appendix D of Appendix F of the SEALR Transport Assessment (2021 Scenario 2 AM peak)

64. In the 2036 analysis the supposed benefits of SEALR at the gyratory are shown to be very minor in the traffic forecasts, with reductions of 2% and 4% in AM and PM peak periods respectively. It should be noted that these forecasts include the South West Aylesbury Link Road (SWALR) in Do-Nothing and Do-Something.
65. The 2021 traffic forecasts are summarised more fully in the two diagrams taken from the AECOM Environmental Statement and shown in Appendix B to this note. These include indications of forecast changes in Annual Average Daily Traffic (AADT).
66. For comparison with previous studies in this area, the table below shows the traffic forecasts for the Walton Street gyratory from the 2016 Hampden Fields TA.

Table 5: Walton Street gyratory – forecast junction flows (2016 Hampden Fields TA)

Scenario/Year	Traffic Flows		% Change from Do-Nothing (AM)	% Change from Do-Nothing (PM)	Notes
	AM Peak Hour	PM Peak Hour			
2013 (Thursday 28 February)	3658	3827			Observed flows
2034 S1 Do-Nothing	5335	5405			Note: Do-Nothing excludes ELR and SLR
2034 S2 Do-Minimum	5042	5242			note: Do-Minimum includes ELR
2034 S3 with Hampden Fields Dev	5143	5306	-3.6%	-1.8%	note: Do-Something includes ELR and SLR

67. It is notable that the 2034 forecast flows shown above, are 20-30% higher than the 2036 forecasts in the new ATM modelling. Given that background traffic growth in Aylesbury will be of the order 25-30% between 2021 and 2036, according to the Jacobs modelling, it is very strange that the gyratory flows do not increase from 2021 levels in the new forecasts. This appears implausible. Also, comparing the junction flows in the 2021 Jacobs Scenario 2 (AECOM Scenario A) forecasts with the 2036 forecasts there is actually a reduction in demand in most scenarios which seems entirely implausible.
68. It is possible that the inclusion of the SWALR is responsible for some of the reduction in traffic in the latest 2036 forecasts. However, **a detailed explanation for the large discrepancies between the forecasts for Walton Street gyratory is urgently requested from BC and their consultants.**
69. Regarding the junction capacity assessments undertaken by AECOM, amongst the key junctions are the Walton Street gyratory; the A413 Wendover Road/Camborne Avenue roundabout; the main access to the hospital from the B4443 and junctions on the A418 Oxford Road.

Walton Street Gyratory

70. At Walton Street gyratory the modelling shows substantial overcapacity in all scenarios (a desirable Maximum Degree of Saturation is below 85%). In general, the impact of SEALR is marginally positive in reducing congestion as expressed by the Maximum Degree of Saturation. However, in the 2021 Scenario B PM peak SEALR is actually shown to increase congestion as shown below. In 2036, it is also noticeable that the maximum queue length is increased in the Do-Something scenarios for both AM and PM peak when compared with the Do-Nothing. None of these results show a clear beneficial impact on the gyratory.

Table 20 – Junction 6: A413 Walton Street / A413 Wendover Road / Stoke Road

Scenario	AM Peak		PM Peak	
	Max DoS	Max Q	Max DoS	Max Q
2018 Base	Not Assessed		Not Assessed	
2021(a) Do Nothing	135.4%	167.6	125.8%	125.7
2021(a) Do Something	124.4%	119.3	116.9%	98.5
2021(b) Do Nothing	128.5%	142.1	126.7%	131.7
2021(b) Do Something	107.3%	49.0	128.3%	136.3
2036 Do Nothing	122.7%	75.8	117.8%	69.8
2036 Do Something	114.8%	80.4	112.1%	86.9

Inset 4: Table 20 from SEALR Transport Assessment – Walton Street gyratory

71. It is noted that, in June 2020, the Highway Authority reviewed the SEALR TA and recommended that some additional work was required. In particular, the capacity assessment of certain junctions will need further consideration. At the Walton Street gyratory apparently 'U' turns from Walton Street dual carriageway had been excluded by AECOM. TPP await the revised junction capacity assessment results with interest and expect that the level of congestion shown by the modelling will be increased.

A413 Wendover Road/Camborne Avenue Junction

72. At the A413/Camborne Avenue junction the 2021 AECOM Scenario A test with SEALR shows higher levels of queuing and congestion than the Do-Nothing, particularly in the PM peak, as summarised below.

Table 21 – Junction 7: A413 Wendover Road / Camborne Avenue

Scenario	AM Peak		PM Peak	
	Max RFC	Max Q	Max RFC	Max Q
2018 Base	0.56	1.3	0.71	2.4
2021(a) Do Nothing	0.84	5.1	0.85	5.6
2021(a) Do Something	0.92	10.7	1.02	63.5
2021(b) Do Nothing	0.68	2.1	0.67	2.0
2021(b) Do Something	0.62	1.6	0.72	2.6
2036 Do Nothing	Not Assessed		Not Assessed	
2036 Do Something	Not Assessed		Not Assessed	

Inset 5: Table 21 from SEALR Transport Assessment – A413 Wendover Road/Camborne Avenue

73. On page 68 AECOM comment on the A413/Camborne Avenue junction as follows:

"If the improvements proposed at this junction by Hampden Fields and Aylesbury Woodlands do not come forward as part of the developments mentioned, a review will

need to be undertaken to determine whether the SEALR scheme is required to provide mitigation in this location.”

B4443/Stoke Mandeville Hospital Access Junction

74. Regarding the Stoke Mandeville Hospital access roundabout, no analysis was carried out for 2021 Scenario A. The junction is operating at very close to, or over, capacity in the 2021 Scenario B Do-Nothing. SEALR increases delays and queuing in both AM and PM peaks. A queue length of 106 vehicles is shown in the PM peak Do-Something test. This is increased from 31 vehicles in the Do-Nothing. In 2036 the impact of SEALR is negligible, but there is no beneficial impact.
75. AECOM merely comment that, because the junction will operate with spare capacity in 2036 no mitigation is justified in the short term. However, it is a major concern, and inconsistent with the scheme objectives, that the only available 2021 test shows that SEALR will significantly increase the queuing at this critical junction.

Scenario	AM Peak		PM Peak	
	Max RFC	Max Q	Max RFC	Max Q
2018 Base	Not Assessed		Not Assessed	
2021(a) Do Nothing	Not Assessed		Not Assessed	
2021(a) Do Something	Not Assessed		Not Assessed	
Changes to junction layout				
2021(b) Do Nothing	0.83	4.9	0.99	30.6
2021(b) Do Something	0.90	8.4	1.07	105.7
2036 Do Nothing	0.77	3.3	0.72	2.6
2036 Do Something	0.80	3.9	0.73	2.6

Inset 6: Table 18 from SEALR Transport Assessment – B4443/Stoke Mandeville Hospital roundabout

A418 Oxford Road/Coldharbour Way Junction

76. The functioning of the A418 Oxford Road in the 2036 scenarios was considered through modelling of the Coldharbour Way and Ellen Road junctions. The Jacobs modelling does not show any significant increase in traffic at these locations due to the opening of SEALR. However, it is to be assumed that the additional development in place by 2036 will put pressure on this road corridor. The SWALR will connect with the A418 at the Coldharbour Way roundabout. Jacobs and AECOM have assumed that roundabout improvements will be funded by the developer of the South West Aylesbury site.
77. The 2036 analysis shows, summarised below, that the A418/Coldharbour Way junction will have a Maximum Ratio of Flow to Capacity (RFC) of over 0.9 in both peak hours in the Do-Nothing. According to the AECOM analysis, opening SEALR is shown to increase the RFC and the queuing at this junction slightly. However, AECOM comment as follow:

"the proposed scheme (SEALR) will result in nil detriment in this location.” (Transport Assessment p75).

Table 21 – Junction 14: A418 Oxford Road / Coldharbour Way

Scenario	AM Peak		PM Peak	
	Max RFC	Max Q	Max RFC	Max Q
2018 Base	Not Assessed		Not Assessed	
2021(a) Do Nothing	Not Assessed		Not Assessed	
2021(a) Do Something	Not Assessed		Not Assessed	
2021(b) Do Nothing	Not Assessed		Not Assessed	
2021(b) Do Something	Not Assessed		Not Assessed	
Changes to junction layout				
2036 Do Nothing	0.93	12.2	0.98	25.4
2036 Do Something	0.95	16.3	0.94	14.0

Inset 7: Table 21 from SEALR Transport Assessment – A418/Coldharbour Way

78. It is not clear from the TA how the level of development anticipated in this part of Aylesbury will increase flows on the A418 between 2017 and 2036. This remains a concern since the A418 corridor already has bus priority lanes in place. These will be critical to delivering the AGT objectives.

Summary of transport network assessment

79. This analysis highlights that the problems of delays and queuing at the Walton Street gyratory will not be resolved even in the 2036 scenario with half of the proposed Aylesbury Orbital Road strategy in place. The 2021 Scenario B PM peak results show a worsening of congestion at the gyratory when SEALR is opened when compared with the Do-Nothing. This is despite the inclusion of the ELR (S) and SLR.
80. In 2021 Scenario A the operation of the A413/Camborne Avenue junction will be adversely impacted by the SEALR proposals. In 2021 Scenario B there will be problems at the main hospital access junction which appear to be exacerbated by SEALR.

Request for further information

81. In order to enable people to better understand the SEALR impacts, TPP request that Annual Average Daily Traffic (AADT) flow forecasts are provided to HFAG for the six main scenarios considered in the TA. Base Year flows for 2017 will also be needed for comparison.
82. TPP recommend that BC's consultants provide some details of the forecast "demand" and "actual" junction flows, particularly at the Walton Street gyratory. The reasons for this request are explained in Appendix A. Without this information, the interpretation of the ATM model results can be difficult. This is particularly the case for the 2036 model runs, where a substantial increase in traffic (over 40%) is being modelled.
83. The method by which AECOM factored-up the 2018 junction turning flows to represent conditions in 2021 and 2036 for the junction capacity assessment is not adequately explained in the Transport Assessment. It would be helpful if BC could provide further explanation.

Summary and conclusions

84. Based on this high-level review of the Transport Assessment undertaken by AECOM, **the need for the SEALR as a stand-alone scheme appears relatively tenuous**. The stated objective is to mitigate negative traffic and environmental impacts on the Walton Street gyratory as a result of the construction of the Stoke Mandeville Bypass. However, although the scheme will remove traffic from the A4010 Station Road, the main outcome from the construction of a >£20m dual carriageway road link will be merely to allow drivers to re-route between two key radial routes into central Aylesbury (A413 and B4443). The forecast reduction in flows at the gyratory is relatively minor.
85. The table below summarises the reasons why the planning application should not be granted on the basis of the transport evidence presented.

Table 6: Summary of Key Concerns

Ref	Issue	Conclusion
1	<p>Scheme objectives:</p> <p>To enable satisfactory levels of network performance at the Stoke Road gyratory and on the A413, A4010 and B4443 arterial roads after the A4010 realignment is completed.</p> <p>To support the overall quantum of growth within Aylesbury and the surrounding area.</p> <p>To increase the effectiveness of the realigned A4010 as a key north/south corridor.</p> <p>To secure good local connectivity for all road users for movements to, from, within and around Aylesbury.</p>	<p>The Transport Assessment has failed to demonstrate that the scheme objectives can be achieved for a number of reasons. The scheme impact on the Walton Street gyratory, A413 and B4443 can be considered from the 2021 Stand Alone (Jacobs Scenario 2/AECOM Scenario A) results.</p> <p>The traffic flow and congestion impacts in Jacobs Scenario 2 are mixed at best with significant negative impacts through increasing traffic on Camborne Avenue, sections of the Wendover Road and Wendover Way. These impacts are likely to be unacceptable to local residents. If mitigation measures were included in the traffic modelling to stop traffic volumes from increasing on these roads, the impact on the Walton Street gyratory is likely to be neutral at best and possibly negative.</p> <p>In the 2036 forecasts, the impact of SEALR in reducing flows at the Walton Street gyratory is modest at 2% in the AM peak and 4% in the PM peak.</p> <p>Furthermore, TPP and HFAG are not aware that the A4010 is designated as a “key north/south corridor” in any published BC policy documents. The M1 and M40 are the key north/south road corridors in this region.</p>
2	<p>Supplementary objectives:</p> <p>Relieve pressure on a key blue light route (access to Stoke Mandeville Hospital); and</p> <p>Increase provision for walking and cycling in the town to encourage active travel and, in turn, reduce car use and congestion.</p>	<p>AECOM’s junction capacity assessment for 2021 shows that the impact of the scheme on the performance of the Stoke Mandeville Hospital road access junction is to significantly increase queueing. In 2036 there is no positive or negative impact shown on the junction performance.</p> <p>Whilst the SEALR scheme design makes some provision for pedestrians and cyclists, the scheme will encourage car use by local residents and not contribute towards meeting the modal split objectives in the Green Town Masterplan.</p>
3	Assessment Tools (ATM Model)	The new ATM 2017 Base Year traffic model has been reviewed by TPP in a separate document. It represents an improvement on the previous version of ATM which was originally used for the Hampden Fields Transport Assessment. However, TPP have some reservations about the new ATM model and the way that it has been applied.
4	Model Time Periods	The weekday AM peak period modelled (07:00-08:00) in ATM is inappropriate. The hour modelled should reflect the period when children will be arriving at the three schools located near to the Walton Street gyratory. The period selected by Jacobs is inconsistent with the peak period used for the AECOM junction capacity assessment. This is a serious flaw in the analysis presented. The level of casual parking and

Ref	Issue	Conclusion
		pedestrian activity around the Walton Street gyratory will peak at the school opening and closing times, further contributing to congestion. There are also three bus stops on the gyratory which will be particularly busy in these periods. These issues must be taken into account in the strategic and junction modelling for SEALR.
5	Data Collection	<p>The lack of specific detail on the performance of the ATM model in representing flows at the Walton Street gyratory is a serious omission from the LMVR. This junction is critically important. However, the gyratory observed flows are not validated in the ATM LMVR or the AECOM TA. Therefore, there cannot be any confidence in the assertion in the AECOM TA, that future year problems at the gyratory have been solved.</p> <p>The starting point for all of the junction capacity assessments was mainly old surveys factored to 2018 levels. The survey data were supplied by BCC. AECOM do not comment on the provenance of the surveys. It is highly surprising that a consistent and more up to date set of junction surveys was not undertaken for the ATM calibration/validation or the TA. This appears to have been the intention when the Scoping Report was written.</p>
6	2021 Jacobs Scenario 1/AECOM Scenario B Definition	The forecasting work carried out by Jacobs provides some useful information, but it is flawed in a number of respects. Firstly, the 2021 Jacobs Scenario 1 cannot occur (AECOM Scenario B). This is because the funding of SEALR is dependent on the Section 106 (S106) Agreement with the developer of Hampden Fields. Even partial S106 funding will not become available until the 1200th house on the Hampden Fields site is occupied. It is concluded that the earliest year that the money can be obtained from the Hampden Fields developer is 2025. So, the 2021 Jacobs Scenario 1/AECOM Scenario B (AECOM) which includes a completed SEALR, but with only 60 households at Hampden Fields, is not feasible, unless the necessary funding can be obtained from elsewhere.
7	2021 Jacobs Scenario 2/AECOM Scenario A - 2021 Stand Alone Assessment	The 2021 stand-alone assessment of SEALR (Jacobs Scenario 2/AECOM 2021 Scenario A), which excludes the ELR (South) and SLR, shows a reduction in flow at the Walton Street gyratory. However, this appears to be achieved at the cost of flows on Camborne Avenue, a section of Wendover Road and Wendover Way. These are likely to be unacceptable to local residents and will require mitigation. The reduction in flow at the gyratory will then be eroded if the mitigation measures are correctly modelled.
8	Trip Matrix Forecasting	TPP have concerns about the application of the matrix forecasting methodology. There are anomalies in the Jacobs forecasts which emerge in Appendix C of the Jacobs note. The 2021 Scenario 1 AM LGV matrices seem to show reductions in flow when compared with the 2017 Base Year. The 2036 AM and PM LGV matrices also show many reductions in sector-to-sector movements when compared with the 2017 Base Year. The matrix changes shown in the Jacobs report, which is an appendix to the AECOM TA, imply that there was an error in the matrix building or in the preparation of the report. This has not been identified by Jacobs, AECOM or BC officers, which causes concern about the accuracy of other information provided to support the planning application.
9	Traffic Growth at Walton Street Gyratory	The 2036 Do-Nothing forecasts show virtually no increase in traffic at the Walton Street gyratory between 2021 and 2036. This is inconsistent with recent analysis carried out for the Hampden Fields planning application and seems implausible. Background car traffic growth between 2017 and 2036 is forecast to be over 40%. Further explanation is required from BC or Jacobs (who prepared both sets of forecasts).

Ref	Issue	Conclusion
10	Impact on Walton Street Gyratory	<p>Following the Planning Appeal Inquiry relating to Hampden Fields, the Secretary of State's (SoS) 2015 decision demonstrated that even a minor increase in traffic on an already congested Walton Street gyratory, which is an Air Quality Management Area (AQMA), would be reason enough not to grant permission. To grant approval for the SEALR would go against the SoS decision. Appendix D shows the forecast Walton Street gyratory flows considered by the Inspector in 2015. In the latest 2036 forecasts, the reductions in flow at the gyratory are comparable with those considered at the Public Inquiry and marginal at best (-1.9% in the AM peak and -3.9% in the PM peak).</p> <p>In June 2020, the Highway Authority reviewed the SEALR TA and recommended that the capacity assessment of certain junctions will need further consideration. At the Walton Street gyratory apparently 'U' turns from Walton Street dual carriageway had been excluded by AECOM. TPP await the revised junction capacity assessment results with interest and expect that the level of congestion shown by the modelling will be increased.</p>

86. TPP conclude that the case for SEALR as a stand-alone transport improvement in the Transport Assessment is inconclusive. Based on the analysis presented in the TA, it is evident that the scheme objectives are not achieved. The scheme does not appear to contribute towards the Garden Town aims and objectives. It will encourage greater car use by residents. Consequently, it is concluded that the scheme should not be given planning permission on the basis of the transport analysis presented.

Appendix A: "Demand" and "Actual" Flows

Some congested assignment traffic modelling software - such as the software used for ATM which is called VISUM - incorporates procedures for estimating the effects of capacity restrictions on downstream traffic flows (sometimes referred to as flow metering). This is an important feature of many congested road networks. Failure to take it into account can lead to serious over-estimation of queues and delays at downstream junctions and poor estimation of overall network delays.

In applying the VISUM software it is possible to obtain two types of traffic volume output on links and at junctions. These can be defined as follows:

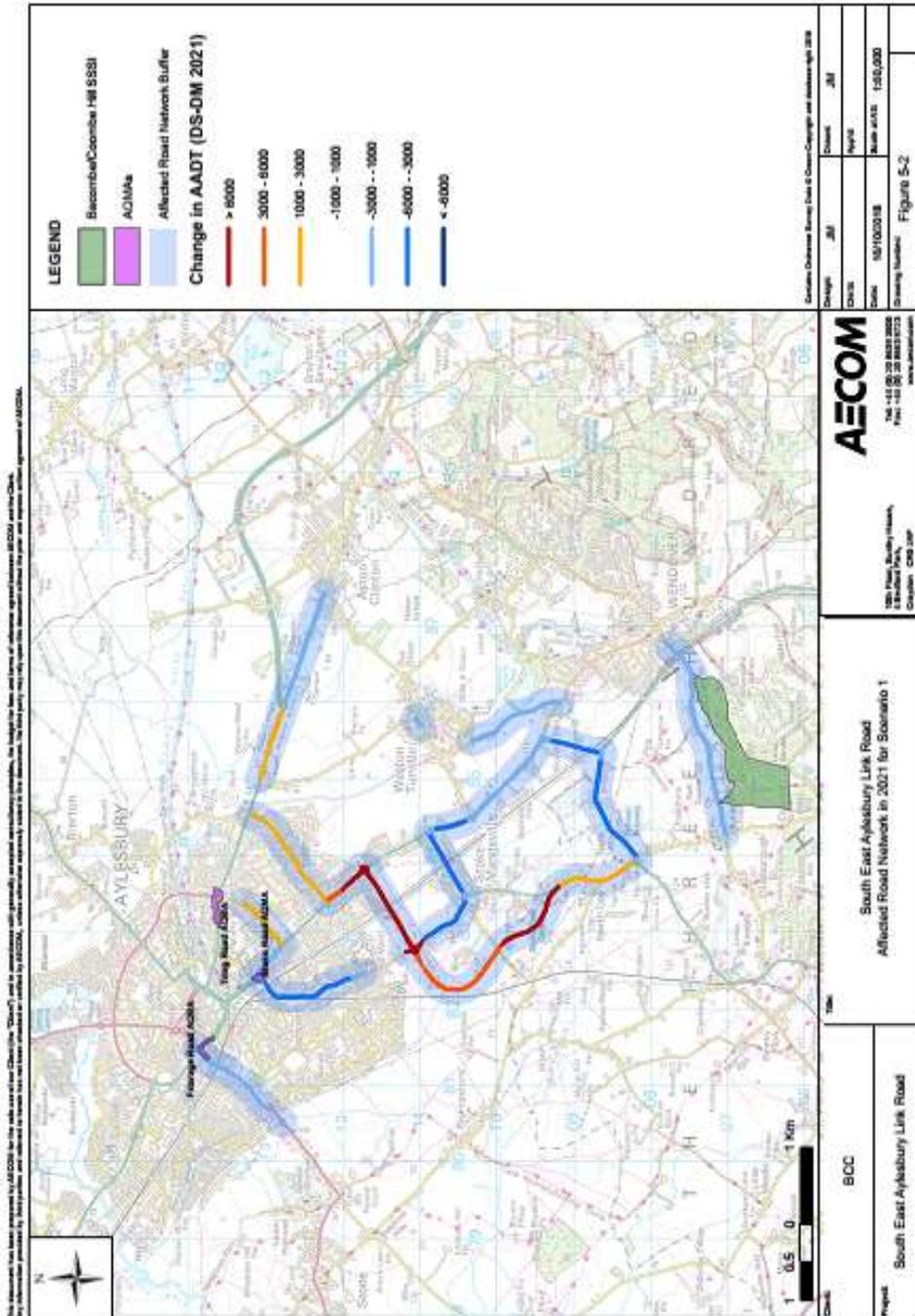
- "demand" flow – this is the traffic demand held in the trip matrix that is assigned to the network; (i.e. the flow that would exist if there was no upstream capacity restriction); and
- "actual" flow – this represents the traffic that can feasibly pass through the road network in the hour modelled.

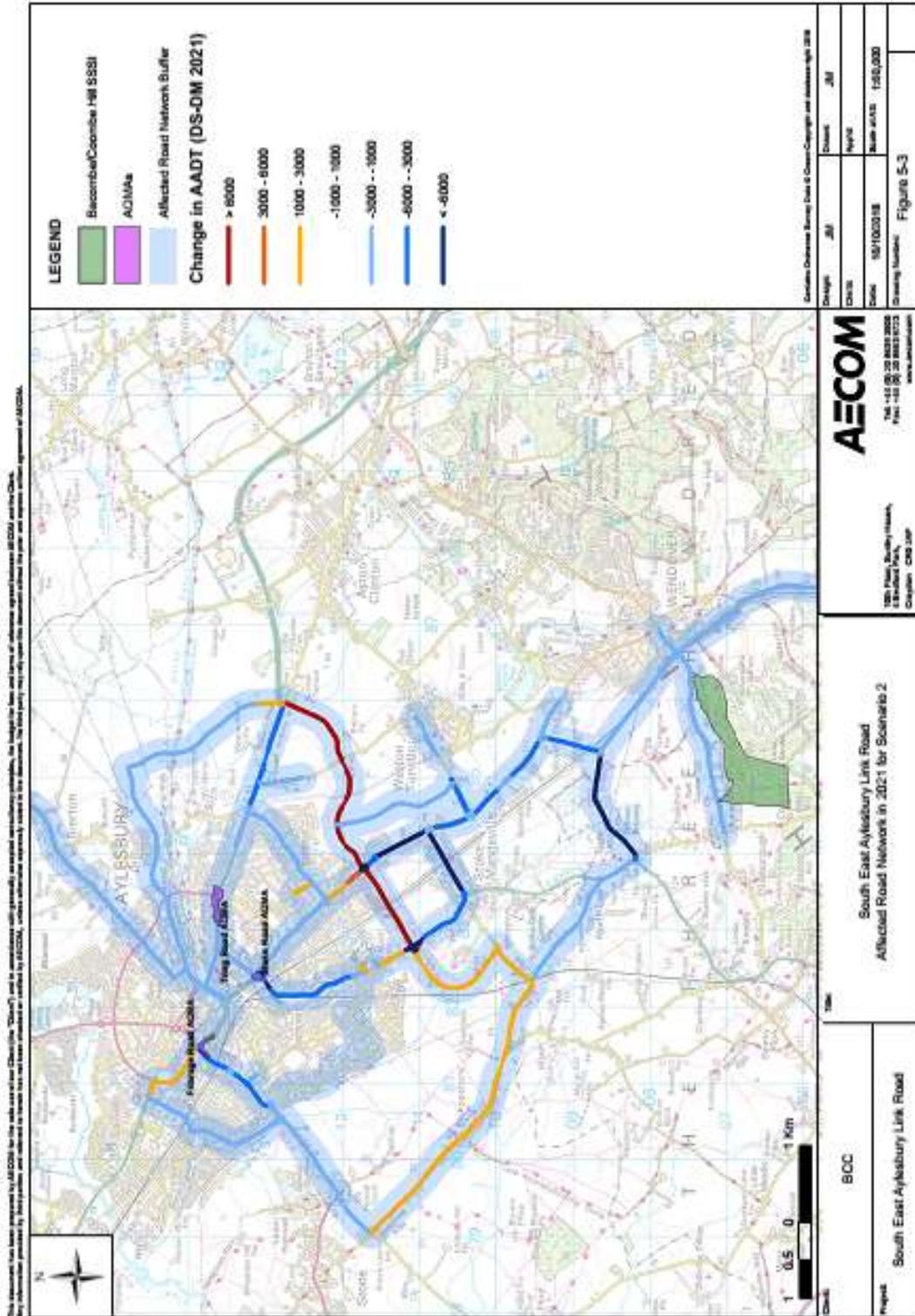
Where the demand flow exceeds the road capacity (e.g. at a traffic signal approach) the actual flow downstream will be constrained to the capacity of the junction approach. This can lead to significant differences between demand and actual flows in some cases. One interpretation of a large difference between demand and actual flows is that, in reality, the peak period would spread (say from one hour to two hours).

TPP assume that the ATM SEALR forecasts are given as "actual" flows, although a clear statement on this issue was not found in the available reports.

TPP recommend that BC's consultants provide some details of the demand and actual flows, particularly at the Walton Street gyratory. Without this information, the interpretation of the ATM model results can be difficult. This is particularly the case for the 2036 model runs, where a substantial increase in traffic (over 40%) is being modelled.

Appendix B: Traffic Forecasting Diagrams (from Environmental Statement)





Note the flow changes reported below are in “bands” (e.g. 1000-3000 AADT) and are taken directly from the SEALR Environmental Statement prepared by AECOM. It has not been possible for TPP to verify these numbers as the link by link AADT flows are not available in the documentation submitted with the planning application.

For the 2021 AECOM Scenario A the following changes, as shown on Figure 5-2 above, are forecast according to the ES:

- increases of more than 6,000 AADT are expected on the adjacent section of A413 Wendover Road, north of SEALR, and on the southern section of the SMBp, south of Stoke Mandeville.
- increases of 3,000 to 6,000 AADT are predicted on the northern section of the SMBp and a small section of A413 Wendover Road.
- increases of 1,000 to 3,000 AADT are shown on King Edward Avenue, Camborne Avenue / Bedgrove, A41 Aston Clinton Road, and the A4010 Risborough Road, south of the SMBp.
- decreases in flow of 3,000 to 6,000 AADT are expected on Station Road, a small section of A413 Wendover Road, Lower Road, A413, B4009 Nash Lee Road, Station Road, Mandeville Road and Stoke Road.
- decreases of 1,000 to 3,000 AADT are expected on High Street/ Ellesborough Road/Wendover Road, Main Street / Brook End and Worlds End Lane in Weston Turville, A413 Wendover Road, Lower Road, A418 Oxford Road, and Aylesbury Road near Aston Clinton
- traffic flows are shown to decrease on Stoke Road, within the Stoke Road AQMA by between 3,000 and 6,000 AADT and on the A418 Oxford Road, within the Friarage Road AQMA by between 1,000 and 3,000 AADT.
- traffic flows on King Edward Avenue, near the Tring Road AQMA, are expected to increase by 1,000 to 3,000 AADT.

For 2021 Scenario B (i.e. including the SLR and ELR (S)) shown in Figure 5-3, during the opening year of the Proposed Scheme the following flow changes are forecast according to the ES:

- increases of 3,000 to 6,000 AADT are expected on a short section of the A413 Wendover Road adjacent to the Proposed Scheme
- increases of 1,000 to 3,000 AADT are expected on the A413 Wendover Road, B4443 Lower Road, a small section of the SLR north of the A41, A41 Gatehouse Road, and a long section including Bishopstone Road/North Lee Lane/Marsh Lane/HS2 bypass.
- decreases of more than 6,000 AADT are shown for B4009 Nash Lee Road, Station Road in Stoke Mandeville, and A413 Wendover Road north of Stoke Mandeville.
- decreases of 3,000 to 6,000 AADT are shown for sections of A418 Oxford Road, B4443 Mandeville Road /B4443 Lower Road north of Stoke Mandeville, A413 Wendover Road south of Stoke Mandeville, and A41 Aston Clinton Road.

- decreases of 1,000 to 3,000 AADT are found on Portway Road/A418 Oxford Road, Coldharbour Way, Exchange Street/A41/Walton Road, A418 Aylesbury Road, Stocklake/Bellingham Way/SLR, A413 Wendover Road, Camborne Avenue/Bedgrove, New Road, Main St Weston Turville, New Road, B4009, A413 Nash Lee Road / London Road, Wendover Road/Ellesborough Road/Tring Road, and North Lee Lane.
- in the Stoke Road AQMA, traffic flows are expected to decrease by between 1,000 and 6,000 AADT.
- for the Friarage Road AQMA, traffic flows on A418 Oxford Road are predicted to decrease by 3,000 to 6,000 AADT, but are predicted to increase on the adjacent A41 Gatehouse Road by 1,000 to 3,000 AADT.
- traffic flows on the A41 through the Tring Road AQMA are shown to decrease by 1,000 to 3,000 AADT.

Appendix C: SEALR – Forecast Impact on Junction Flows (from SEALR Transport Assessment)

Table 12 – Proposed Development Impact (Junction Level)

Ref	Junction	Year of Assessment	Do Nothing		Do Something		Numerical Change		% Change	
			AM	PM	AM	PM	AM	PM	AM	PM
1	A41 Aston Clinton Road / Aylesbury Road	2021(a)	2792	2869	2846	2874	+53	+4	2%	0%
		2021(b)	3958	3301	4140	4071	+182	+770	9%	23%
		2036	5550	5253	5686	5006	+116	-247	2%	-5%
2	A41 Aston Clinton Road / New Road	2021(a)	3045	3045	3166	3166	+121	+121	4%	4%
		2021(b)	2239	2351	2025	1961	-214	-391	-10%	-17%
		2036	3059	3417	2668	2604	-391	-813	-13%	-24%
3	A41 Aston Clinton Road / Richmond Road / Bedgrove (incorporating Broughton Lane)	2021(a)	3367	3440	3470	3527	+103	+87	3%	3%
		2021(b)	2512	2560	2375	2234	-137	-326	-5%	-13%
		2036	3275	3580	2962	2895	-312	-665	-10%	-19%
4	A41 Aston Clinton Road / A4157 / King Edward Avenue	2021(a)	3077	3099	3039	3047	-37	-51	-1%	-2%
		2021(b)	2866	3018	2913	2895	+47	-123	2%	-4%
		2036	3201	3334	3332	3245	+131	-89	4%	-3%
5	A41 Aston Clinton Road / Park Street / Tesco / Walton Road	2021(a)	2745	2554	2810	2447	+66	-108	2%	-4%
		2021(b)	2633	2586	2514	2374	-118	-213	-4%	-8%
		2036	2921	2787	2884	2563	-38	-225	-1%	-8%
6	A413 Walton Street / A413 Wendover Road / Stoke Road	2021(a)	4103	4244	3899	3978	-205	-266	-5%	-6%
		2021(b)	3780	3871	3437	3538	-343	-333	-9%	-9%
		2036	4057	4093	3980	3935	-77	-158	-2%	-4%
7	A413 Wendover Road / Camborne Avenue	2021(a)	3452	3319	3723	3752	+271	+433	8%	13%
		2021(b)	2769	2719	2415	2879	-354	+160	-13%	6%
		2036	3142	3032	2250	2678	-892	-354	-28%	-12%
8	A413 Wendover Road / Silver Birch Way	2021(a)	2775	2455	2683	2504	-92	+49	-3%	2%
		2021(b)	2488	2186	1715	1593	-773	-593	-31%	-27%
		2036	2718	2523	1636	1549	-1082	-974	-40%	-39%
9	A413 Wendover Road / A4010 Station Road	2021(a)	3549	3264	3159	2965	-390	-299	-11%	-9%
		2021(b)	2905	2760	2158	2085	-747	-695	-26%	-25%
		2036	3449	3449	2382	2044	-1067	-1405	-31%	-41%

Ref	Junction	Year of Assessment	Do Nothing		Do Something		Numerical Change		% Change	
			AM	PM	AM	PM	AM	PM	AM	PM
10	A4010 Station Road / B4443 Lower Road / A4010 Risborough Road	2021(a)	1060	1057	764	691	-296	-366	-28%	-35%
		2021(b)	1151	1111	748	673	-404	-438	-35%	-39%
		2036	1605	1641	1066	799	-539	-842	-34%	-54%
11	B4443 Lower Road / Winterton Drive / Stoke Mandeville Hospital	2021(a)	2952	2629	2849	2531	-103	-99	-3%	-4%
		2021(b)	2934	2694	2817	2654	-117	-40	-4%	-2%
		2036	2666	2279	2800	2312	+134	+33	3%	1%
12	B4443 Lower Road / B4443 Mandeville Road / Stadium Approach / Churchill Avenue	2021(a)	2899	2902	2735	2756	-164	-146	-6%	-5%
		2021(b)	2899	2971	2645	2861	-253	-110	-9%	-4%
		2036	2557	2535	2616	2473	+59	-62	2%	-2%
13	A148 Oxford Road / Ellen Road / Thame Road South	2021(a)	0	0	0	0	0	0	0%	0%
		2021(b)	2761	2867	2505	2881	-257	+14	-9%	0%
		2036	2090	2868	1964	2703	-126	-165	-6%	-6%
14	A418 Oxford Road / Coldharbour Way	2021(a)	0	0	0	0	0	0	0%	0%
		2021(b)	3697	3862	3389	3101	-307	-762	-8%	-20%
		2036	4206	4489	4200	4449	-6	-40	0%	-1%

Appendix D: Hampden Fields Transport Assessment 2012

Scenario/Year	Traffic Flows		% Change from Ref Case (AM)	% Change from Ref Case (PM)	Notes
	AM Peak Hour	PM Peak Hour			
2010 ⁽¹⁾	3831	3985			Observed flows
2031 Ref Case ⁽¹⁾	4314	4460			
2031 Scenario 3 with Hampden Fields Development ⁽²⁾	4159	4323	-3.6%	-3.1%	note: Scenario 3 includes ELR
2031 with Hampden Fields Development ⁽¹⁾	4519	4471	+4.8%	+0.2%	note: main forecast (as used in TA and considered at Public Inquiry) appears to exclude ELR (S)

Sources:

- 1) Hampden Fields Transport Assessment, WSP, November 2012, Appendix J: Aylesbury Transport Model – Traffic Forecasting and Assumptions
- 2) Hampden Fields Transport Assessment, WSP, November 2012, Appendix V: Aylesbury Strategic Modelling - Hampden Fields Results Summary

14 January 2021

By email

Dear Helen Fadipe

PLANNING APPLICATIONS 16/00424/AOP, 16/01040/AOP & CC/0015/20

Environmental Assessment and Addendums, Transport Assessments and Addendums: Annual Average Daily Traffic (AADT) Figures

We write to ask for urgent clarification relating to critical information that forms the basis of both Environmental and Transport Assessments (and addendums) for these current applications. I am sending this letter to the case officers for all three applications.

As you will be aware often the start point for assessing the impact of development is to establish the forecast flows of traffic by producing Annual Average Daily Traffic (AADT) figures. This forms the basis for numerous assessments including not only of traffic impacts but also of, critically, Air Quality, emissions, Greenhouse Gases (GHG), noise and Severance, among others.

It is striking that despite a new Transport Model being introduced leading to the issuing of a Transport Amendment Addendum, in their assessments of the applications published on 13th January 2021 no mention at all is made of AADTs by the Highways Authority.

You will be aware that in our objection to Woodlands 16/01040/AOP sent to you on 9th January 2021 we raised several issues around these AADT's (paragraph 48 and on). We particularly highlighted concerns around errors and a lack of published data.

Since that time we have moved on to assess the Hampden Fields 16/00424/AOP application. Sadly, there appears to be even less published data in relation to Hampden Fields, with no Standalone AADT data at all appearing to be published. Cumulative data has been published for only 32 links (31 with the exclusion of the Southern Link Road).

We have compared the respective figures published for both Woodlands and Hampden Fields. There is unhelpful and confusing labelling e.g. The Woodlands TAA refers to the "2036 Do Cumulative 2" scenario whereas in the ES Addendum Appendix D, Table D.2.5 refers to 'Full Development Scenario (2036) With Scheme'. (In Table 5.7 of the ES Addendum page 61 it states "2036 % change" without even defining the scenario to which this applies). It appears these two scenarios are the same, because the only other *full* development scenario is the VALP sensitivity test which appears not have covered the amount of links referred to in the Woodlands AADT Tables.

In the case of Woodlands it appears that no "2036 Do Cumulative 1" AADT forecasts have been published so we are unable to make a comparison with the Hampden Fields "2036 Do Cumulative 1".

Therefore, the only comparison we have been able to make is with Hampden Fields "2036 Do Cumulative 2". However, even in this case, due the lack of published data, it is only possible to compare 20 links. This analysis can be found in the attached Annexe.

As you can see, when the like for like figures are compared they are markedly different. Yet as the Transport Cumulative Impact Assessment is promoted as a joint assessment one would expect these figures to be very similar, if not identical.

As examples, we have picked 3 of the most important Links below:

- 1) A41 Aston Clinton Road, West of the Woodlands roundabout is Link 1 in the Hampden Fields assessment and Link 1.5 in the Woodlands assessment.

The Hampden Fields ESA says the AADT is 25,446 vehicles per day (vpd) and the Woodlands ESA states this as 43503. A difference of 18,057 vpd.

HF Link Number	Woodlands Link Number	Description	Hampden Fields 2036 'Do Cumulative 2'	Woodlands 2036 'Full Development Scenario with Scheme'	Difference between Hampden Fields and Woodlands scenarios
1	1.5	A41 Aston Clinton Road West of Aston Clinton bypass between Woodlands and Holiday Inn	25446	43503	18057

- 2) Similarly on Link 21 (Hampden Fields) 1.7 (Woodlands) A41 Adams Garage to Bedgrove, the AADT is 21,284 (Hampden Fields) v 32,128 (Woodlands), a difference of 10,864 vpd.

HF Link Number	Woodlands Link Number	Description	Hampden Fields 2036 'Do Cumulative 2'	Woodlands 2036 'Full Development Scenario with Scheme'	Difference between Hampden Fields and Woodlands scenarios
21	1.7	A41 Adams Garage to Bedgrove	21284	32148	10864

- 3) Gyratory, Wendover Road Approach Link 16 (Hampden Fields) and Link 2.3 (Woodlands)

AADT's are quoted as 32,337 vpd in Hampden Fields and 24,685 vpd in Woodlands, a difference of 7652.

HF Link Number	Woodlands Link Number	Description	Hampden Fields 2036 'Do Cumulative 2'	Woodlands 2036 'Full Development Scenario with Scheme'	Difference between Hampden Fields and Woodlands scenarios
16	2.3	Gyratory/Wendover Road approach	32337	24685	-7652

Prima facie, such differences have far-reaching significance across the assessment of both the Transport Assessments and the Environmental Statements. They call into question their validity to objectively assess the impact on Air Quality, noise, Green House Gas (GCG) emissions, severance and, of course, traffic.

Whilst at this stage we have not spent a considerable amount of time in analysing the respective Cumulative 2036 Air Quality reports we have noticed some sharp discrepancies in consistency again. In fact, even the quoted flows on the Eastern Link Road are inconsistent between the two ES documents which requires explanation or correction. This leads to the undermining of public confidence in these documents and alas, even the whole process.

Leaving aside that expert consultants have had to spend significant amounts of time unravelling what is or isn't published, the public have no reasonable chance of scrutinising and inputting into a public consultation where the very basics of the information are misleading, erroneous, 'lost' in technical appendices or simply not there at all.

Concerning CC/0015/20 (South East Aylesbury Link Road), the planning officer will be aware of our submission to the initial public consultation on this application in June 2020. We made it very clear at that early stage that we had serious reservations regarding the AADT information. See paragraph 81 – 83 at which we state *"In order to enable people to better understand the SEALR impacts, TPP request that Annual Average Daily Traffic (AADT) flow forecasts are provided to HFAG for the six main scenarios considered in the TA. Base Year flows for 2017 will also be needed for comparison"*. In particular we were concerned that flows at the gyratory system showed unexplained and implausible flows at that important location in the key scenarios. In addition we provided a whole appendix dedicated to highlighting the issues with the AADT.

As this request had remained unanswered until now, we have revisited the ES and TA addendums published in late 2020. Again no AADT's appear to have been published. The diagrams in the Air Quality appendices (referenced in the TPP report) only show differences in scenarios not the actual data. They also appear to be limited to the standalone scenario.

In the promoter's response to public concerns (*"Applicant's response to public consultee comments received to application SEALR CC/0015/20 - December 2020"*) great weight is put on a revised Transport Assessment but no mention is made of the issue regarding AADT's. It was not the only issue that was not addressed and requests for information went unanswered. It leads us to wonder as to if this report from professional and independent Transport Consultants had actually been through the necessary quality assurance checks.

The public is again significantly prejudiced by this and it brings into question the data on which both the Environmental Statement and the Transport Assessment have been based.

These need to be published, or an explanation given to us where they are. Since it is our understanding that the 2036 Do Something Scenario B is very similar or identical to the Hampden Fields and Woodlands Cumulative Two, one would expect these figures to be identical or very similar to those AADT's and/or the differences explained.

Conclusions

1. The Council will be best placed to publish an immediate explanation of the issues raised in this letter, setting out where the public can find, or when they can expect, consistent and coherent information allowing them to input into the public consultation.
2. Failing this, the Environmental Statements and Transport Assessments across 16/01040/AOP Woodlands and 16/00424/AOP Hampden Fields applications need to be completely reassessed and republished.
3. It will not be lost on promoters, planning officers and the public themselves that one of the three schemes is indeed a public project and another a quasi-public project driven by a quango. Therefore, it is reasonable for interested parties to expect that

high standards of communication and presentation will be maintained at all times by the promoters.

4. We ask that you please carefully consider the issues raised in this letter. This may take some time and we therefore request that in the meantime the Council put the application process for all three of these applications on hold and inform the public accordingly.

Yours sincerely,

Dr Glynn P. White

Secretary, Hampden Fields Action Group

5 Brookside
Weston Turville
Aylesbury
Bucks
HP22 5YN



Annexe: Hampden Fields AADT comparisons

Hampden Fields AADT Review (vehicles per day)

HF Link Number	Woodlands Link Number	Description	Hampden Fields 2036 'Do Cumulative 2'	Woodlands 2036 'Full Development Scenario with Scheme'	Difference between Hampden Fields and Woodlands scenarios
1	1.5	A41 Aston Clinton Road West of Aston Clinton bypass between Woodlands and Holiday Inn	25446	43503	18057
2	1.4	Aston Clinton Bypass	43705	40950	-2755
3	7.1	Aylesbury Road (East of Woodlands Roundabout)	5844	6588	744
4	7.1	Aylesbury Road/Western Road, Aston Clinton (nr Shell Garage)	5844	6588	744
5	7.5	Brook End/Main Street Weston Turville	10424	not published	
6	13.8	Main Street (shops - Chandos)	13026	not published	
7	13.7/13.7a	Marroway	6413	not published	
8	13.5	A413 Wendover Road - South of Marroway Roundabout towards Wendover	29034	not published	
9	13.4	A413 Marroway to Stike Mandeville Roundabout	27897	not published	
10	13.6	Station Road, Stoke Mandeville	9632	not published	
11	13.3	A413 Wendover Road from Station Road to Hampden Hall	22597	21183	-1414
12	5.6	Camborne Avenue	10019	not published	
13	2.2	A413 Wendover Road Camborne Ave past Tennis/Squash Club	26251	25054	-1197
14	13.2	Wendover Way (by Grange School)	8943	9708	765
15	2.5	Stoke Road to Gyratory	22385	20373	-2012
16	2.3	Gyratory Wendover Road approach	32337	24685	-7652
17	3.9	Exchange Street	23014	not published	
18	1.9	A41 High Street past Vale Park	18096	not published	
19	1.8	A41 Tring Road from Tesco to Adams Garage	23486	24583	1097
20	4.1	Oakfield Road	18761	21100	2339
21	1.7	A41 Adams Garage to Bedgrove	21284	32148	10864
22	5.3	Broughton Lane	5276	4155	-1121
23	7.6	New Road, Hotel to Weston Turville	9117	9332	215
24	12.3	Eastern Link Road (South) Canal to Woodlands Roundabout	23123	24324	1201
25	15.5	Southern Link Road		48800	
26	11.8	Stocklake Link West- Town side	13957	15559	1602
27	11.7	Stocklake Link East - Kingsbrook side	2971	28558	25587
28	11.1	ELR from Kingsbrook to Berton	16722	19333	2611
29	11.2	ELRN from Kingsbrook to Canal	26275	17602	-8673
30	3.4	Berton Road (North)	27552	not published	
31	11.1/11.2	Eastern Link Road North	18368	19333	965
32	3.5	Berton Road South	16347	10099	-6248

Dear Helen Faldipe

16/00424/AOP

Response to RPS rebuttal of HFAG submission on Transport issues.

We thank RPS for their timely response. Please see our comments below – considerable issues remain and planning permission cannot be pursued at this stage.

- 1) RPS state *“any questions relating to the calibration and/or validation of the ATM are matters for Buckinghamshire Council (BC) to consider as creator and steward of the ATM”* .

We could not agree more, there are significant outstanding issues with the modelling, especially relating to the AM peak hour, yet Bucks Highways remain silent on this crucial issue. A response from the Highways Agency is required and the public must be given an appropriate amount of time to consider it.

- 2) RPS state, page one, *“In response, Jacobs has confirmed that the 07:00 to 08:00 period reported in the **Local Model Validation Report** should actually have referred to 08:00-09:00 for the AM peak.”*

Such a statement highlights the dilemma and disarray which surrounds this point. RPS have clearly not seen the response in the SEALR application which says the opposite that the peak period was “wrongly labelled” from 08.00-09.00 and the correct model period of 07.00 – 08.00 was used. There is complete confusion between highly trained professionals who compile these TA(A)’s, Jacobs and the Highways Authority. We are asking a very simple, but highly significant, question here but have got a different response from different places. This must alarm the case officer.

We have sought extensive advice around this point. In fact, we made our position very clear in our submission regarding the LMVR as long ago as June 2020.

Whatever way round the truth actually is there are serious repercussions for the TA’s. All concerned will realise the gravity of this point and the precarious position it potentially leaves the TA(A)’s and/or the Aylesbury Transport Model and the Environmental Assessment.

- 3) RPS state

“This therefore has no bearing on the traffic flows which have been inserted into the models as it is merely a labelling issue. The traffic flows which have been used in the

assessments relate directly to the peak hour traffic flow information extracted from the ATM.”

We do not doubt that the applicant has used the data sent to it by or on behalf of Bucks Highways. We submit though that either the data is 07.00 – 08.00 to match the LMVR or it is 08.00 -09.00 which is wrong against what is defined in the Aylesbury Transport Model. As point 2 above, either way it needs clarifying with the Highways Authority and the TA(A) needs to be corrected and republished for public consultation.

- 4) Cumulative Scenarios. We agree, our point was that what if Woodlands did not come forward, has a cumulative study been conducted of the effect of SEALR and Hampden Fields combined. However, this is more a point for Woodlands as the standalone scenario is completely flawed.
- 5) Regarding AADT's RPS state *“AADT traffic data is not generally a measure that is explicitly referenced in a Transport Assessment and, therefore, the value of in seeking to establish greater linkages between the scope of both assessments are unwarranted.”*

This is truly an astounding comment. Is RPS seriously suggesting that AADT's are not a reasonable measure to assess traffic changes around the network as a result of development? This is not to the authors credit and requires no further comment.

- 6) Further regarding AADT's RPS state *“potential for slight methodological departures that would have been agreed at the time of the original planning submissions.”*

We think that the Case Officer will agree that, as local residents, we are entitled to have access to estimates of the peak hour and daily traffic flows forecast for the roads around the proposed development where significant changes are anticipated. Presumably RPS would accept that AADT is probably the most easily understood output of this process. For that reason, it is usually presented within the ES.

The technical analysis for the Hampden Fields and Woodlands developments is relatively impenetrable when accessed through the BC website with thousands of pages to navigate.

The point is that they are not broadly comparable. As Stantec wrote in their response on a very similar issue (available on the 16/01040/AOP website) specifically stating that it is reasonable for there to be a 5-10% tolerance. However, the figures are still not within a tolerance of 5-10%. Out of the 22 links it is possible to compare 11 of the 22 links are over a +/- 10% difference. Thus, by the developers own standards it is unexplained.

We respectfully request that the traffic flow impacts are summarised in a more transparent way than that offered to date. We would also expect that the flows are referenced to a map base so that misunderstandings about the locations selected can

be avoided and much valuable time wasted by the public and our transport consultants.

- 7) RPS state “This would therefore call into question the value that could be drawn by HFAG from establishing a direct comparison between the two stand-alone planning applications”

The value is clear. The public want to know which assessment to believe as it would like to contribute to the consultation. Currently, it cannot because the data is so wildly different between the published AADT’s.

- 8) RPS state: *“Even if broadly similar in nature and application, the methodology to establish AADT flows will have been subject to decisions being taken relating to the calculation of expansion factors, as outlined in Chapter 9 of the revised ES submission for Hampden Fields. Slight variations in the range and choice of traffic data used in the derivation of expansion factor(s) will create entirely reasonable differences in the reporting of the corresponding AADT values.”*

We agree, as do our Transport Consultants, that a difference of +/- 5-10% would be reasonable but they are not “entirely reasonable” differences. They are unexplained differences that fall outside what is reasonable and reflect that the methodologies are so inconsistent that the public has no reasonable chance of assessing these matters. We are told by the Woodlands own Transport Consultants that a +/-5-10% difference would be reasonable. That is common ground. Applying that benchmark which figures is the public supposed to believe, the Hampden Fields or the Woodlands ones?

- 9) RPS state: *“Separately from this, it is also the case that Stantec, who act on behalf of the Aylesbury Woodlands applicant, have submitted a correction to a table referenced by HFAG in these representations of 14 January 2021. It is understood that this correction was required as a result of a ‘transposition error’ in the drafting of the relevant table in Appendix D.”*

Stantec corrected 5 out of the 22 links that were submitted. The logical conclusion is that the other 17 were as published by the applicant and our substantive point is therefore correct.

- 10) RPS state: *“Finally, it is noted that the cross-references adopted by HFAG do not appear to use consistent ATM links when its reported comparisons were made.”*

We note only two out of the 22 links are actually corrected by the applicant. Their use of the word “appears” is telling. The remaining 20 links appear that they can be compared to each other. RPS will note that the Woodlands application publishes a map of the exact location of the link. Hampden Fields appears not to have done so.

11) Hampden Fields Link 1 – Woodlands Link 1.5

RPS state: *“The HFAG response identifies a difference of 25,446 between the two revised ES documents at this location. Following submission of the Woodlands corrected information mentioned above, the difference between AADT at this location is 1,329.”*

We agree and accept this but what an error to make on regarding one of the most important junctions on the whole network.

12) Hampden Fields Link 21 – Woodlands Link 1.7

RPS state: *“The HFAG response identifies a difference of 10,864 between the two revised ES documents at this location. Following submission of the Woodlands corrected information mentioned above, the difference between AADT at this location is 3,299.”*

This is still outside the +/- 5-10% tolerance. In fact, significantly so. It demonstrates that the public cannot have confidence in these numbers.

13) Hampden Fields Link 16 – Woodlands Link 2.3

RPS state: *“The HFAG response identified a difference of 7652 between the two revised ES documents at this location. This difference is because links 16 and 2.3 are not comparable links and relate to different parts of the gyratory network”.*

We cannot substantiate this claim as it is not supported by evidence. We have checked the links thoroughly but would be happy to re-visit this should the applicant wish to publish which links are comparable. Until such time our point stands.

14) RPS state: *“Given the intention of the Regulation 22 request, the intended comparison can only be between previously and newly revised assessments, made by both applicants and not with each other.”*

We accept this point with regards to Regulation 22 but not to the TA overall. It is made clear from the outset that the TAA is to be read in conjunction with the full TA. The Do Cumulative assessment is a joint assessment it is therefore nonsense that comparison cannot be made with each other.

15) RPS state: *“Given HFAG’s own admission that it has not chosen to seek expert review of the junction models submitted.”*

This is untrue. We had ongoing discussion and review with our Transport Consultants who have heavily inputted into our submission. Given a fairer consultation period, in

non covid circumstances, a full report from our Transport Consultants would have been sent as well.

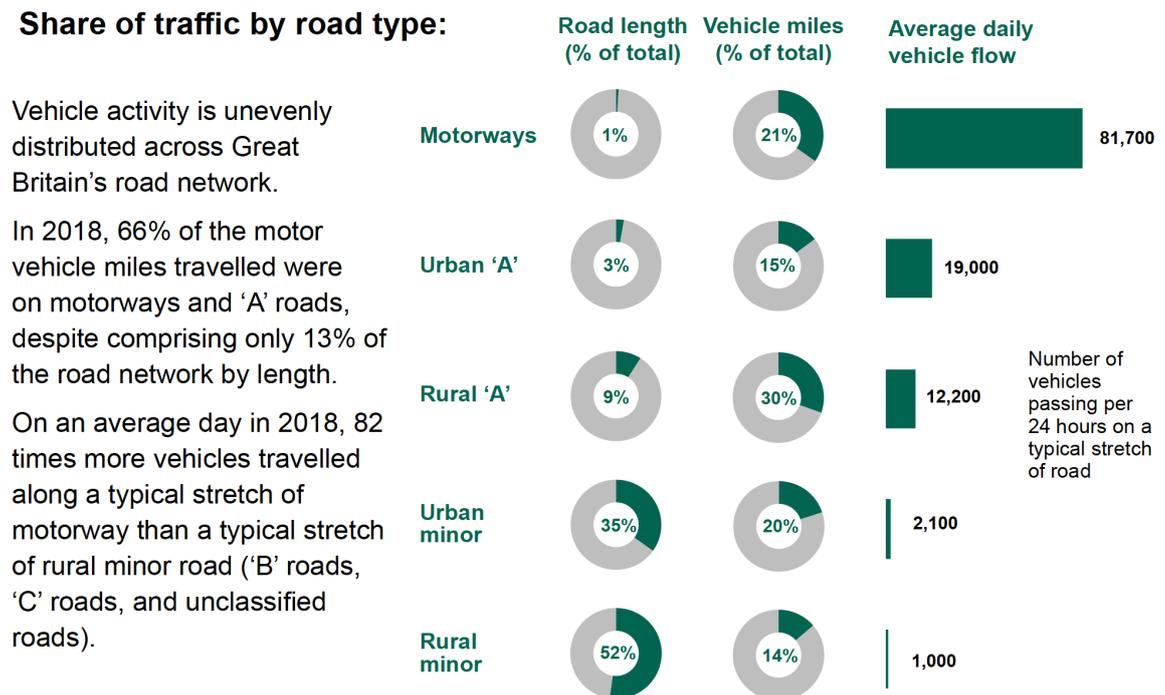
- 16) RPS state: *“It remains the applicant’s understanding that BC remains committed to the delivery of this scheme, and having sought legal advice, are reassured of the ability for it to come forward”*

We accept the “applicants understanding” but it does not make it true. This is not a committed scheme. It is up to the Highways Agency to answer this point as they would be subjected to any potential legal challenge, not the applicant. We encourage the planning officer to establish the legal position for herself and to publish the legal advice.

- 17) Regarding the Southern Link Road RPS state: *“The two-way road capacity of the SLR would therefore be 153,600 vehicles per day (vpd) when factored across a 24-hour period which is significantly in excess of the volumes predicted”.*

This is a theoretical and unfair comparison. One only has to look at DfT actual figures for flows on major roads in the country to get a fairer and objective comparison. The figure RPS suggest makes the road being capable of being twice as busy as motorway.

Share of traffic by road type:



The figure of 48,800, which is not disputed from the AADT’s published as part of Woodlands reflects a major A road with all the associated problems of severance that are very likely to occur. This must be of significant concern to the LPA, as it is to residents.

The applicant seems to suggest the road is capable of taking even more traffic. Whilst this may be theoretically possible, we disagree it will actually happen as in the ‘real world’ as the junctions at either end will be congested as their own junction analysis demonstrates.

However, it is clear that this road is certainly not a boulevard as claimed in the Aylesbury Garden Town documentation.

Conclusion

We have pointed out some of the areas where our points remain unanswered.

The amount of mistakes and errors in the modelling and presentation of the TAA misled the public.

The LPA will be well aware that many members of the public have already made it clear that they have been confused by the “mislabelling” of information and have sent representations that this has been the case.

The RPS letter does nothing to clear this up. In fact, as we have pointed out in the letter it makes it even more confusing in crucial areas.

Along with the other errors already acknowledged by RPS and indeed Stantec the TAA needs correcting and put back out for public consultation.

We, HFAG, also need more time to fairly and reasonably assess this evolving TAA once corrections have been made.

APPENDIX H : Appropriate Assessment Application Ref. 16/00242/AOP

Proposal: Outline planning application (with all matters reserved) for a mixed-use sustainable urban extension comprising: up to 3,000 dwellings and a 60 bed care home/extra care facility (Use Class C2/C3); provision of land for a Park and Ride site; a total of 6.90ha of employment land (comprising of up to 29,200 sq.m. B1c/B1/B2/B8 uses); provision of two primary schools (one 2 form entry and one 3 form entry); a mixed use local centre (3.75ha) with provision for a foodstore of up to 1,200 square metres (GFA), further retail (including a pharmacy), restaurant and café units, a doctor's surgery, gym, public house with letting rooms, professional services, multi-functional community space and a day nursery, and live work units; multi-functional green infrastructure (totalling 109.01 ha) including parkland, sports pitches, sports pavilions, children's play areas, mixed use games areas, including a skate park/BMX facility, informal open space, allotments, community orchards, landscaping; extensions to domestic gardens at Tamarisk Way (0.22ha); strategic flood defences and surface water attenuation; vehicular access points from New Road, Marroway, A413 Wendover Road and A41 Aston Clinton Road; a dualled Southern Link Road between A413 Wendover Road and A41 Aston Clinton Road and a strategic link road between the Southern Link Road and Marroway; internal roads, streets, lanes, squares, footpaths and cycleways and upgrades to Public Rights Of Ways (PRoWs); and car parking related to the above land uses, buildings and facilities.

Land Between Wendover Road And Aston Clinton Road Weston Turville

Summary

Buckinghamshire Council, as Local Planning Authority and 'Competent Authority', has carried out a Habitats Regulations Assessment (HRA), as required by The Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitat Regulations'), to assess whether there are likely significant effects on the Chiltern Beechwood Special Area of Conservation (CB SAC) arising from this development, either alone or in combination with other plans and projects.

An HRA report was produced by the applicants in March 2012 and amended November 2012 to support the original outline planning application, reference : 16/00242/AOP The HRA 'screened in' recreational disturbance and air quality from the net new homes and additional traffic on the A41 as having the potential to result in likely significant effect on the integrity of the conservation purposes of the CB SAC.

Natural England's response, as 'the appropriate nature conservation body' under the Habitat Regulations concluded (2013) that either stand alone or in combination with other plans or projects, the proposal would not be likely to have a significant effect upon this SAC from recreational disturbance and air quality effects and agreed with the findings of the

HRA report that an Appropriate Assessment was not required. This application was dismissed on appeal.

However, the current 2016 application and accompanying ES and addendum, and HRA updated November 2020 ES addendum considered the impact on air quality arising from additional traffic on the A41 in combination with other plan or project has the potential to result in likely effects on the SAC, and air quality modeling was undertaken. This concluded for the purposes of Environmental Impact Assessment (EIA) that the effects to be not significant and that no mitigation was required. The HRA 'screened in' recreational disturbance from the net new homes and as having the potential to result in likely significant effect in combination on the integrity of the conservation purposes of the CB SAC.

In light of this, under the Habitat Regulations air quality impacts and recreational pressure are 'screened in' and as such a Stage 2 'Appropriate Assessment' has been carried out by Buckinghamshire Council as 'Competent Authority'. This has concluded that the impacts can be adequately mitigated to ensure that there will be no significant adverse effects on the CB SAC.

Informing individual Appropriate Assessment of Planning Applications and Permitted Development.

Buckinghamshire Council's supporting documentation to the emerging Vale of Aylesbury Local Plan VALP included a Habitats Regulations Appraisal report which stated that Natural England supported the conclusions reached. This was updated in November 2020 as part of the Further Main Modifications, in response to the updated county-wide road traffic modelling predicted AADT. This concluded that VALP as proposed to be modified is not predicted to adversely affect the Chilterns Beechwoods SAC as a result of air pollution, either alone or in-combination with other plans or projects.

In addition, a Habitats Regulations Assessment Report was produced in March 2012 to support the original outline application. Natural England response concluded that either stand alone or in combination with other plans or projects, the proposal would not be likely to have a significant effect upon this SAC and that an appropriate assessment was not required.

The ES was updated by way of an ES addendum November 2012 and HRA accompanying this application considered the impact on air quality arising from additional traffic on the A41 in combination with other plan or projects has the potential to result in likely effects on the SAC, and therefore further scrutiny is required as part of an appropriate assessment. Air quality modeling was undertaken. This concluded that the effects to be not significant and that no mitigation was required.

The HRA also considered the impacts on recreational activity and human presence on the SAC arising from the development either stand alone or in combination with other plan or project accompanying this application when mitigation measures in the form of natural greenspace were considered. The applicant consulted Natural England on their approach.

The applicant's HRA report submitted in support of the current 2016 application with accompanying ES and addendum, updated November 2020 recognises that a likely significant effect cannot be ruled out and therefore further scrutiny is required as part of an appropriate assessment on recreational pressures. This concludes that the impact avoidance and mitigation measures in the form of the public open space design and accessibility would be successful in addressing any net increase in visitor numbers and recreational pressure on the SAC and would not contribute towards any adverse effect in combination with other developments.

1. The Conservation of Habitats and Species Regulations (2017)

In accordance with Regulation 63 of The Conservation of Habitats and Species Regulations (2017), a competent authority (in this case Buckinghamshire Council), before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—

a. is likely to have a significant effect on a European site...(either alone or in combination with other plans or projects), and

b. is not directly connected with or necessary to the management of that site

must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.

A person applying for any such consent, permission or other authorisation must provide such information as Buckinghamshire Council may reasonably require for the purposes of the assessment or to enable it to determine whether an appropriate assessment is required.

Buckinghamshire Council must, for the purposes of the assessment, consult the Conservation Body, NE, and have regard to any representations made by that body. It must also, if it considers it appropriate, take the opinion of the general public, and if it does so, it must take such steps for that purpose as it considers appropriate. In the light of the conclusions of the assessment, and subject to Regulation 64 (Considerations of overriding public interest), Buckinghamshire Council may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site.

In considering whether a plan or project will adversely affect the integrity of the site, Buckinghamshire Council must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given.

2. Stage 1 'Screening'

Buckinghamshire Council, as 'Competent Authority' accepts that this proposal is a 'plan or project' which is not directly connected with or necessary to the management of the Chiltern Beechwood Special Area of Conservation (CBSAC). The potential likely significant effects on the integrity of the CB SAC is from recreational disturbance and air quality. A net increase in homes is likely to result in additional visits to the CB SAC with consequential erosion and pollution within the CB SAC.

At this stage Buckinghamshire Council cannot rule out the likely significance effects on the CB SAC (alone or in combination with other plans or projects) because the proposal could undermine the Conservation Objectives of the SAC. This is because the proposal lies within 5 kilometres of the boundary of the CB SAC and represents a net increase in homes within this zone which will lead to an increase in local population and a likely increase in recreational disturbance and air quality, from additional traffic on the A41, within the SAC.

As the likely significance effect cannot be ruled out at this stage, a Stage 2 'Appropriate Assessment' must be undertaken.

3. Stage 2 Appropriate Assessment

Based on the information proposed by the applicant, Buckinghamshire Council must decide whether or not an adverse effect on site integrity (alone or in combination with other plans or projects) can be ruled out. Mitigation may be able to be provided so that the proposal can reduce adverse effects.

The ES addendum and HRA accompanying this application considered the impact on air quality arising from additional traffic on the A41 in combination with other plans or projects has the potential to result in likely effects on the SAC. As such, air quality modeling was undertaken to assess the likely significant effects. The nitrogen deposition contributions acting in either as stand alone or in combination with other plan or project would not undermine the conservation objectives for the SAC and overall the site integrity would not be adversely affected. The Council concludes that the effects to be not significant and that no mitigation was required.

The HRA also considered the impacts on recreational activity and human presence on the SAC arising from the development either stand alone or in combination with other plan or project accompanying this application when mitigation measures in the form of natural greenspace were considered. The applicant consulted Natural England on their approach.

The Council concludes that the impact avoidance and mitigation measures in the form of the on-site public open space design (including semi rural green space) and accessibility would be successful thereby not resulting in any significant adverse effects from recreational pressures for the CB SAC either alone or in combination with other plans and projects.

4. Conclusion

An Appropriate Assessment has been carried out for this development in accordance with the Habitats Regulations 2017. With mitigation measures for recreational disturbance the Appropriate Assessment concludes that the development would not have any significant adverse effect upon the integrity of the SAC..

Buckinghamshire Council considers, subject to consultation with NE, that the above measures will prevent a likely adverse effect on the integrity of the BB SAC. Pursuant to Article 6(3) of the Habitats Directive (Council Directive 92/43/EEC) and Regulation 63(5) of the Conservation of Habitats and Species Regulations (2017), and permission may be granted subject to any other planning considerations.

Provided that the applicant has entered in to a S106 agreement to secure the public open space on the site the planning application will be in accordance with the SAC mitigation requirements.