

Job Name: **NW Bicester Appeal**

Client: **Cherwell DC**

Date: **May 2023**

Job N^o: **IMA-23-000**

Town and Country Planning Act 1990
Appeal by Firethorn Trust
Land at North West Bicester, Charlotte Avenue, Bicester
Local Planning Authority Ref no: 21/01630/OUT
Planning Inspectorate Ref no: APP/C3105/W/23/3315849

Proof of Evidence of Patrick Moss BSc (Hons) Dip TP MRTPI
on behalf of Cherwell District Council

Introduction

1. My name is Patrick Moss, I am a consultant planner and transport planner with IMA Transport Planning of Bath. I am a member of the Royal Town Planning Institute and eligible for membership of the Chartered Institute of Transport and Logistics. I hold a degree in City and Regional Planning and a postgraduate Diploma in Planning and Transport from the University of Wales, Cardiff having graduated in 1987/89. Through my career of over 30 years, I have been involved in land use planning and urban regeneration England and Wales, in particular the interface between land use planning and transport planning. My clients have included private businesses, local authorities, parish councils and voluntary organisations and I have represented many of these at appeal inquiries and local plan examinations.
2. I have been commissioned to present this evidence on behalf of Cherwell District Council, the planning authority within which the application site sits.

Scope of Evidence

3. My evidence will cover matters relating to transport and the interface of transport with the built environment within the proposed application. I will be referring to the following:
 - a. Existing development - character and quantum
 - b. Existing highways
 - c. Description of development
 - d. Review of TA and TP proposals

Statement of Truth

4. All factual information provided in this proof of evidence is true to the best of my knowledge. Where opinion is offered it is my own based on the evidence before me and is identified as opinion. Where forecasts are quoted these are identified as forecasts.

The existing development and highway

5. The proposal forms part of a proposed Eco-Town in NW Bicester and sits adjacent to an exemplar development that forms the first stage of the whole NW Bicester development. This exemplar development is intended to lead the way in terms of urban design and sustainable development principles including drainage, transport, net-zero carbon energy provision and habitat creation.

6. The exemplar development included consent for 393 dwellings served by two access roads from the local highway network, Charlotte Avenue and Braeburn Avenue. These access roads serve a series of parking areas and dwellings are grouped in different formations around them with a mix of apartments and houses, some facing the main avenues and some facing side roads, courtyards or car parks. The main avenues are heavily traffic calmed to enforce the 20mph speed limit and feature wide footways on both sides that include both trees in tree pits and drainage channels at the kerbside containing shrubs and vegetation to increase absorption rates and reduce run-off during periods of heavy rainfall. The trees and vegetation are not just for aesthetic affect but form a functional part of the public realm along the highway.
7. Both Charlotte Avenue and Braeburn Avenue (collectively referred to as the Elmsbrook spine road) connect the development to the B4100, which runs from the A41 to the SE of Bicester to Adderbury via Aynho. To the south of the exemplar scheme the B4100 crosses the A4095, which in turn links to other radial routes serving Bicester including the A41 leading to junction 9 of the M40. Heading north along the B4100 to Adderbury the route joins the A4260 Banbury to Oxford Road. En route the B4100 crosses the A43 just north of the latter's junction 10 with the M40 thus giving access to the Motorway and the Principal Road Networks.
8. Charlotte Avenue and Braeburn Avenue are connected to each other via a short length of highway that is restricted to buses and cycles only. This bus gate enables public service buses to route through the development but ensures that private cars and delivery vehicles cannot do so, thus maintaining and enforcing low traffic levels through the absence of through traffic.
9. Towards Bicester on the B4100 are cycle lanes and footways leading from the exemplar development into Bicester. There are toucan crossings for the A4095 both east and west of the B4100 and also on the B4100 near the junction of Charlotte Avenue. These connect the internal cycle and pedestrian network of the exemplar development to the pedestrian and cycle network serving Bicester.
10. The consent for the exemplar development has since been amended to include an extra three dwellings as part of the main development and a further 16 apartments above a café and community centre which is under construction. The consent also includes an Eco-Business Centre. As of 6th February 2023, there has been 335 completions and thus the exemplar development is approximately 90% complete.

The development proposal:

11. The appellant proposal as identified in the application and tested in the Transport Assessment is for 530 dwellings, these are in addition to the exemplar development at Elmsbrook that is largely already developed as described above and in the process of being built out. The appellant proposal will have access to the B4100 at two points, via Braeburn Avenue to the north and via Charlotte Avenue to the east - both these roads and access points already exist as part of the exemplar development. Significantly travel by private vehicle between the two access points will not be possible, as there is a bus gate, also available to cyclists, midway that divides the exemplar development in two for car traffic. Those dwellings served by Braeburn Avenue must gain access and egress to the north, and those that are served by Charlotte Avenue must do so via the East.

12. The Travel Plan indicates that the Western Area of the site will host approximately 75% of the 530 dwellings proposed, or up to 400 dwellings, whilst the Eastern part of the site will host around 25% or up to 130 dwellings. This indicates that the majority of the development will be served via Braeburn Avenue.
13. In the statement of common ground, it is agreed that no more than 138 dwellings (the eastern parcel of the proposed development) would gain access via Access A and no more than 69 dwellings (part of the western parcel) would gain access via Access B. These two access points are served by Charlotte Avenue and the remainder of the development via Braeburn Avenue. This leads to 60/40 split between those dwellings served by Braeburn Avenue and those served by Charlotte Avenue

Traffic generation:

14. The Transport assessment (TA) covers traffic generation and distribution in section 7 (CD ref 1.27.1) and gives some detail on the development of traffic generation forecasts for the development. Using census data and National Travel Survey Data the person trip generation is broken down into journey type and mode (tables 7.1 to 7.5). This is then further broken down to provide peak hour traffic forecasts. Of particular interest here is the use of census data, which is the usual and accepted method of gaining an initial figure for vehicle trip generation before any mitigation is applied via travel plan measures. In this instance the local census figures from the 2011 census show that 71.6% of work/employment trips (that is, commuting) occur as car or van driver. This category of travel is particularly relevant as it is the key factor in calculating how many additional vehicles will be on the roads following the development.
15. In tables 7.6, 7.8 and 7.9 of the TA forecasts are made as to how many trips would be made by each mode for work, education and other purposes. These are summarised in the table 7.10 of the TA.
16. In paragraph 7.4.13 the TA quotes from the SPF para 4.119 *that planning applications should include travel plans which demonstrate how the design will enable 50% of trips originating on the development to be made by non-car means with the potential to increase to 60% by 2020*. The TA then states that as this application was being made in 2021 then, along with other factors, car drivers are assumed to make up 40% of the total person trips, however no evidence is provided in either the TA nor the Residential Travel Plan (RTP) to demonstrate that this target has been achieved in the Exemplar Development and thus that the targets in the SPF are being met at present. As a result, the assumed modal split in the TA is not supported by any evidence base.
17. From Table 7.10 of the TA it can be seen that in the AM peak there are forecast to be 746 person trips generated by the development and 671 trips generated in the PM peak. Of these, without mitigation then 359 will be made as car driver in the AM peak and 467 in the PM peak, this gives the car driver a modal share of 48% in the AM peak and 70% in the PM peak. This is skewed as education travel coincides with the morning peak but not the PM peak, and education travel has a much lower mode share by car.
18. Nevertheless, the TA then goes on in Table 7.13 to apply a blanket 40% modal share to car-driver mode in both peaks, (298 and 268 vehicles two-way respectively) which needs a considerably greater modal shift in the evening than in the morning. This is

impractical as it would entail some commuters travelling by car in the morning but returning by another mode in the evening. However, the evening shift needs to be achieved otherwise the subsequent modelling using PICADY and LINSIG will be based on traffic figures that are too low. Thus, we must assume that the objective is to reduce car use in the evening peak by 42.6% from 467 trips to 268.

19. We need to look at the travel plan to ascertain whether and how this shift is achieved.

Travel Plan

20. The Framework Residential Travel Plan (RTP) sets targets in section 7 (CD ref 1.27.2), these are contained in 7.3.9 to 7.3.10 of the RTP and are noted as follows.
21. Target 1 - 60% of all trips originating from the development will be made by non-car modes of transport following occupation (i.e. from the outset)
22. Target 2 - 60% of all trips originating from the development will be made by active modes of transport (walking and cycling) by one year following occupation.
23. Target 3 - 10% of all trips originating from the development will be made by bus by one year following occupation.
24. There are also targets for containment of travel, that is the aim of promoting travel to destinations in NW Bicester and Bicester as a whole.
25. I have not listed the targets for containment as these are subservient to the targets for modal split: that is, they are not material themselves but achieving them should assist in the achieving targets 1-3 cited above. In turn targets 1-3 should be subservient to an overall unstated target, that is to contain traffic generation to that given in the TA and used within the capacity forecasts.
26. If the above targets are achieved (and assuming that the person trip generation is correct) then the overall target of limiting traffic generation will be met. It is worth assessing the modal shift required to achieve these.
27. Target 1 is that 60% of journeys are NOT by car-driver mode, in the PM peak this requires a shift from the forecast modal share for car-driver trips of 70% without mitigation (467 trips) to 40% share achieve the target of 268 trips as car-driver. The 199 trips would be transferred across all modes including bus and car passenger.
28. Target 2 is that one year after opening 60% of trips will be by active travel modes, that is walking and cycling. Referring once again to table 7.10 we can see that the unadjusted forecast for the evening peak is for 101 person trips to be made by these modes, this target would require 402 trips to be made by walking and cycling, an increase of 298%.
29. Target 3 is that one year after opening 10% of trips would be by bus. This would require 67 trips to be made by bus whereas the unadjusted forecast is for 29 journeys in the PM peak. This is an increase of 131%. Until April 2023 the E1 bus served the exemplar development every half hour linking the site to Bicester Centre and Bicester village, however the contract to run that service ceased at the end of April and since then a temporary contract (to May 2025) is in place to provide an hourly service. The

present bus service operated by midi-buses with a capacity of approximately 30 seats and thus target 3, if it were achieved, would totally overload the existing service and would even stretch the previous half hourly service. It is noted in the OCC compliance statement for the S106 agreement that contributions are sought for the bus service, IF the target in the RTP is to be achieved then the service will need to be enhanced above that operating *prior* to April 2023 (when it was half hourly). This appears unlikely and suggests that the travel plan target is unrealistic.

30. To assess whether the travel plan can achieve these targets this it is necessary to look at section 9, Measures and Initiatives.
31. Section 9 identifies a number of hard and soft measures that will be taken, in summary these are;

Hard Measures

- Containment of land uses
- Cycle provision
- Journey Planning
- Broadband (to facilitate working from home)
- Car club/car sharing

Soft Measures

- Welcome Travel Pack
- Promotion of cycle groups and clubs
- Working from home
- Travel awareness
- Promoting Public Transport

32. There is very little detail within each section, and some of the detail that is present doesn't inspire confidence - for example the cycling groups listed appear to promote cycling as a leisure activity rather than as a mode of transport [*The three groups are Cycling UK Oxfordshire, Bicester Millenium Cycle Club and Bicester Social Cycling Group - PDF's of their home webpages are appended to this proof - Appendix 1*]. Both hard and soft measures are discussed in general terms rather than in the specifics of what will be provided. In short there is nothing here to indicate that the targets can be met. In the paragraphs above I have indicated what these targets mean in terms of numbers (something that travel plan fails to do), As can be seen the increase in uptake of non-car modes required to meet these targets is dramatic and in the absence of any quantitative evidence that such a shift can be achieved it appears these targets are aspirational rather than realistic. This has implications for the operation of the highway network as discussed below.

Capacity Assessment

33. In the TA chapter 9 "Junction modelling" the outputs from two capacity assessments are carried out using PICADY and LinSig: these model the junction of Charlotte Avenue and B4100 post development, with an assessment of the junction as a priority junction with Charlotte Avenue as the minor road (the existing arrangement) and then as a signalised junction. In these assessments the forecast development traffic (mitigated to 40% by car driver) has been added to baseline traffic from the Bicester Traffic Model (BTM).

34. The outputs from these models are shown in tables 9.2 and 9.3 of the TA. In table 9.2 it can be seen that, in the PICADY model, the RFC (ratio of flow to capacity) for Charlotte Avenue is 0.87 in the AM peak and 0.77 in the PM peak, with delay times of 80 seconds and 56 seconds respectively. The delays and RFC on the B4100 are virtually zero as, except for any delay from the vehicle ahead turning there is no interruption to traffic flow.
35. The first thing to note is that the normal maximum accepted RFC is 0.85. There can be significant day to day variations in traffic and also there are spikes within the peak which use up any spare capacity for a short period; this means that with an RFC above 0.85 then queues and delays can be unpredictable. It should also be noted that the problem arises as the flow on the B4100 is close to saturation during the peak and thus pulling out onto it can take time, hence a typical queue of five vehicles has a delay of 80 seconds in the morning peak.
36. On the LinSig model (table 9.3 of the TA) all arms are signalised and thus the capacity is shared more evenly across the junction rather than the B4100 having absolute priority. In this model the measure is DOS (degrees of saturation) rather than RFC - Charlotte Avenue has a DOS of 82.5 (100 would be complete saturation) and the B4100 (north) has a DOS of 86.9. Normally a DOS of 90 is regarded as the cut-off point beyond which the arm might be regarded as over-capacity. Delays are not quoted in table 9.3 but queues are, the queue on mean maximum queue on Charlotte Avenue in the AM peak is stated as being 7.9 vehicles. One would expect a queue this length to clear in one phase of the signals. There are also queues recorded on the B4100.
37. The problem with both these models is that they are very dependent upon the accuracy of the traffic generation forecast, and as I have described above this is suspect because there is little detail on how such large modal shifts are to be achieved. If, for example, 50% journeys are made by car-driver, rather than the 40% figure used, then an extra 75 vehicle-trips will be generated in the AM peak.
38. Assuming if we take these figures at face value then it is now time to look at the impact of the queues and delays that are forecast. The PICADY model assumes the existing junction layout, which is a priority junction with a solid island for right turning traffic off the B4100. The Bellmouth is very wide so that the largest vehicles that might turn left can do so without being impeded by the island protecting the right turn lane. The mean maximum queue is 5 vehicles which would reach approximately 30m into the site, or approximately to the end of the ghost markings west of the pedestrian island at the bell mouth. A queue this length is not, of itself problematic but the delay of 80 seconds is a concern given that the bus route, which is part of the offer to attract people from their cars, is also caught up in this. A half hourly bus service pattern relies on the same bus making the round trip twice within the hour and thus this bus service will actually be subject to a 160 second delay in the hour at this junction.
39. The traffic signals are based on a possible layout shown on drawing 4600-1100-T-016 in appendix 2 of the Stage 1 Road Safety Audit, which is itself in Appendix B of the TA. This shows the junction modified with the stop line for the signals set some 15m back from the junction as the bell mouth width makes a stop line at the bell mouth unsuitable for signals and the signals themselves make the original location unnecessary as visibility is no longer an issue. The forecast mean maximum queue is 7.9 vehicles which would extend 42m back from the stop line. The combination of the

set back of the stop line and the queue length would extend past the entrance to a small car park that currently serves the marketing suite but that will eventually serve the residential units that replace this. A vehicle turning into Charlotte Avenue may find itself unable to turn into this car park and would then block traffic behind it until the signals change and released the queue.

40. In considering the above it is necessary to consider also the optimistic modal split that has been assumed. The LinSig model is approaching the threshold of a DOS of 90%, whilst the PICADY model is over the threshold of 0.85. At this level, especially for the PICADY model, small increases can have a dramatic effect on queue length and delay. Thus, if the traffic generation figures used are underestimated the queue length and delay could increase significantly.

Charlotte Avenue Improvements

41. Improvements have been proposed to Charlotte Avenue on the length between Gagle Brook Primary School and the bus gate. The identified problem is that this length of approximately 45metres is only 4.1m wide which is just wide enough for two cars to pass but not wide enough for a car to pass a larger vehicle such as a bus. The increase in traffic from the development (all the extra traffic that will use Charlotte Avenue will use this length, as both access points are adjacent to the bus gate) is thought to be problematic given that this is a bus route and thus cars will at some point encounter a bus coming towards them.
42. The issue here is the solution chosen; the developer is seeking to widen Charlotte Avenue from 4.1m to 4.8m by moving the kerb line on the eastern side 0.7m towards the frontage of the buildings. This is illustrated on drawing number 4600-1100-T-073 as appended to Technical Note 09 “Response to OCC Comments” prepared by Velocity Transport Planning.
43. The street vernacular for Charlotte Avenue is described in general terms in the introduction to this proof, in particular at this location there are trees within each footway mounted in tree pits with grills around the trunk and then sectioned slabs matching the footway surfacing placed over the root ball - these sectioned slabs allow for access to the root ball and also allow heave without this tearing up the surface. On the western footway the trees and their pits are set back but on the eastern footway the tree trunks are only just over a metre back from the kerb line. The eastern footway overall is around 3.7m wide at this location with the usable route (unobstructed by trees) approximately 2.5m in width from the property frontages. Extending the carriageway by 0.7m will extend the carriageway over these slabs and thus over the tree pit. Cherwell’s Landscape Architect, Tim Screen, has advised on the implications of this and his advice is appended to my proof. (Appendix CDC2 of Mr. Webster’s Proof of Evidence)
44. The summary of this advice is that the proposed alterations will extend the kerb line over the root ball of the trees, and this has implications for the health of the tree and the relationship of the tree to the carriageway, not least in the spread of the canopy over the carriageway in the fullness of time. The advice states, in effect, that these tree locations have been carefully planned in relation to the carriageway and for the health of the tree and the protection of the carriageway the spatial relationship should not be altered.

45. These trees are not only intrinsic to the street scene but are part of the eco-town identity and ethos as described in the North West Bicester Supplementary Planning Document. In particular para 4.192 states that *“sufficient space should be allocated for tree planting... to integrate with the streetscene and adjacent street furniture”*. At present this length of Charlotte Avenue achieves this (as it was intended to when planning consent were granted. Without these trees the street loses the identify and also loses the tools of carbon capture and improved air quality. As the Landscape Officer has commented, even if these trees aren’t lost their future health and their relationship to the street scene is compromised. Any such loss to the street scene is almost by definition a severe impact.
46. Further to the above the presence of trees so close to the kerb presents other issues, especially given the reasons for widening which is to allow a car to pass a larger vehicle such as a bus. In this scenario both vehicles will be close to the kerb and thus close to the trees and, given this measure is to accommodate buses passing cars, will put taller vehicles under or even within the canopy as the trees grow. Given this is a residential street this will create blind spots near the kerb where, for example, view of a child might be obscured. At the very least such a scheme would need a safety audit, and none has been presented by the appellant.
47. Other solutions such as widening the carriageway on the other side are not practical even though they would avoid tree roots as this would have a direct impact on available footway width.
48. In addition, it has to be questioned whether this change is needed: the length in question is 45m with good visibility from one end to the other and, subject to suitable signage, a priority one-way working scheme should resolve this issue. Only a relatively small portion of the existing development is served by this section of road, the appellant proposal will add 207 dwellings which even without any travel plan measures would be expected to generate around 150 trips in the evening peak or 2.5 vehicles a minute. At 20mph it would take less than ten seconds for a vehicle to traverse this narrow length and cars can pass each other on this length anyway. The proposed widening is to resolve cars meeting a bus coming the other way once every quarter of an hour at most, the bus will be in the narrows for only 10-15 seconds and cars can pass each other. This should be capable of resolution using a suitable traffic management scheme. In short a better (and cheaper) scheme than that proposed is possible but the Appellant has chosen to present a heavy-handed scheme that damages the eco credentials of the existing development.

Summary and conclusion

49. I have addressed the findings of the Transport Assessment and Travel Plan submitted by the Appellant as part of the application that is subject to this appeal. In doing so I have also addressed other documents submitted by the Appellant, in particular Technical Note 009 in which widening of Charlotte Avenue to the north of Gagle Brook Primary School is discussed.
50. In examining the analysis I have found significant flaws in the assumptions regarding modal split and traffic generation. In particular the modal split is based on a policy statement without any evidence that it can be achieved, the pre-mitigation modal split is different in the AM peak to the PM peak and yet a global factor has been used which cannot represent a future reality, and as a result the targets stated in the

travel plan are not so much ambitious as aspirational. In addition, if the target for bus use were achieved then the bus service would be over-capacity.

51. The capacity analysis for both junctions is based on these traffic forecasts. For the Charlotte Avenue/B4100 Junction the model results from PICADY are above the normal threshold for capacity and in LinSig are close to it. When close to capacity small increases in traffic flow (in this case because of errors in the forecast) can have a significant impact on queue length and delay.
52. Even with the forecasts given the junction of Charlotte Avenue and B4100 is close to capacity and this may cause problems in terms of delay for bus services. With the traffic signals solution there is the potential risk of a vehicle being blocked from turning right into the first car park of the development and thus blocking any other vehicles that have turned in, causing a tailback to the B4100.
53. The road widening proposed for Charlotte Avenue is simply not acceptable as it will damage trees that are integral to the eco-town concept and the urban design of the area. Further it is not necessary to make this change to address the problem that has been identified.
54. Paragraph 111 of the NPPF stipulates that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be “severe”. I conclude that the cumulative impacts in this case are severe, indeed the impact of the road widening alone is severe, and for this reason the appeal should be refused.