



**LAND TO THE SOUTH OF RINGWOOD ROAD,
ALDERHOLT**

APP/D1265/W/23/3336518

TOPIC PAPER: HIGHWAY IMPACT

June 2024

Dudsbury Homes (Southern) Ltd
Dorset Council

1. INTRODUCTION

- 1.1 This topic paper has been prepared by Paul Basham Associates on behalf of Dudsbury Homes (Southern) Ltd and agreed with representatives of Dorset Council (DC).
- 1.2 As requested by the planning inspector, the purpose of the topic paper is to set out the evidence relating to the transport impact of the appeal scheme, and whether this would be suitably mitigated by the off-site highway works and sustainable transport measures.
- 1.3 The topic paper does not directly cover the issue of whether development would be appropriate in this location, given the inspector wishes to hear evidence in relation to that matter.
- 1.4 The topic paper concludes with details of matters that are agreed, and those that remain in dispute.

2. INFORMATION SUBMITTED IN RESPECT OF HIGHWAY IMPACT & OFF SITE HIGHWAY WORKS

Local Plan Evidence

- 2.1 Dorset Council's Draft Local Plan Options Consultation document includes two visions for Alderholt, with either limited or significant expansion. Dorset Council produced supporting transport evidence, developing a calibrated and validated microsimulation model of the area in accordance with DfT's Transport Analysis Guidance to test the impact of various scales of development.
- 2.2 The Alderholt Traffic Modelling Report (May 2021) outlines the development of the model, whilst the Alderholt Traffic Forecasting Report (September 2021) considers the highway impacts of notional developments of 500, 1000 and 2500 dwelling developments. The appellant commissioned Dorset Council to undertake a further assessment on the basis of 1750 dwellings, summarised in the Alderholt Traffic Forecasting Report – 1750 dwellings update (September 2021).
- 2.3 The assessments quantify the number of vehicle trips likely to be generated by the proposed development using observed trip rates from Pine Road, Alderholt. The assessments assume that the hypothetical developments would be solely residential, with no other uses.
- 2.4 The assessment of development impact is presented in terms of congestion heatmaps and journey time analysis.

- 2.5 For the 1750 dwelling scenario (DS 1750), the assessment shows congestion on Provost Street at the bridge over Sweatfords Water (figures 5.4 & 5.5). However, average journey times through Fordingbridge increase by a maximum of 8.7 seconds compared to the 2033 Do Minimum scenario (tables 5.3 & 5.4).
- 2.6 The heatmaps also show congestion at Presseys Corner and at the existing Ringwood Road/Hillbury Road/Harbridge Drove junction for the DS1750 scenario (figures 5.14-5.17). Average journey times through Alderholt itself along the B3078, Ringwood Road and Hillbury Road are contained in Appendix A of the report. The modelled changes in journey time between the 2033 DM and DS1750 scenarios are small, except on approach to the Ringwood Road/Hillbury Road/Harbridge Drove junction. The model assumes for DS1750 that the existing priority junction is retained, whereas the proposed development would provide a large roundabout to replace the existing junction.
- 2.7 The model does not forecast any other congestion hot spots in the DS1750 scenario, nor does it forecast a material change to average journey times in other locations, including through Cranborne and Alderholt Mill.

Transport Assessment

- 2.8 Pre-application discussions were held with Dorset Council in order to calculate the likely trip generation of the proposed development, taking into account the specifics of the proposal including the non-residential uses, i.e. employment space and village centre. The principle of the trip internalisation methodology was agreed with Dorset Council as part of those discussions.
- 2.9 The approach is set out in the Trip Internalisation Report (TIR) dated May 2022. It sets out the number of overall trips for the residential and employment uses, and proportions the residential trips into different journey purposes. For each journey purpose, internalisation factors are applied to reflect the provision of non-residential uses and the trips then assigned to a mode to calculate the external vehicle trips generated by the proposed development. The TIR follows a similar process to quantify the number of existing vehicle movements arriving or departing Alderholt that would no longer be necessary, given the provision of additional facilities within Alderholt.
- 2.10 These trip generation forecasts formed the basis of the modelling assessment presented in the Transport Assessment. The modelling scenarios, TEMPRO growth factors and distribution used are set out in the TA, as is the scope of the junction assessment.

- 2.11 The TA uses modelling software to forecast the performance of five junctions:
- 1) Site access – Hillbury Road roundabout
 - 2) Station Road / Ringwood Road
 - 3) Hillbury Road / Station Road
 - 4) Provost Street / Shaftesbury Street / High Street
 - 5) Verwood Road / A31 Eastbound
- 2.12 TRL report LR942 sets out that the standard error of prediction for a typical junction modelling site is approximately 15% of the entry capacity. For this reason, whereas a junction approach has a theoretical ratio of flow to capacity of 1.0, a figure of 0.85 is generally used as a threshold to account for possible prediction error and is considered to indicate satisfactory performance.
- 2.13 The TA shows the first three junctions would operate within theoretical capacity in all scenarios. A mitigation scheme is proposed at Provost Street / Shaftesbury Street / High Street, in the form of widening of the Provost Street approach to provide separate right and left turn lanes. Once this is taken into account, the modelling shows the junction would operate within theoretical capacity. The TA references the possibility of an alternative mitigation scheme in the form of a one way system. No Road Safety Audit was submitted for these proposed highway works as part of the TA or TAA but are being undertaken.
- 2.14 The TA also contains details of a mitigation scheme at the Verwood Road / A31 Eastbound junction, where the modelling forecasts the junction would be over capacity before the addition of development traffic. The mitigation scheme consists of the signalisation of the eastbound off slip and Verwood Road, with amendments to the eastbound on-slip. The signalisation also enables provision of signalised pedestrian crossings. Once the scheme is taken into account, the modelling shows the junction would operate within capacity. No Road Safety Audit was submitted for these proposed highway works as part of the TA or TAA, but is being undertaken.
- 2.15 The TA considered the existing safety record on the road network, concluding it generally operates safely, with accidents likely to be a result of driver error rather than deficiencies in the road layout. The TA reviewed necessity for widening of links on approach to Alderholt to support passing vehicles, based on OS mapping. The TA contained drawings to demonstrate widening being achievable within the public highway boundary and proposed a financial contribution to provide warning signage on approach to sharp bends on Batterley Drove.

Transport Assessment Addendum

- 2.16 The Transport Assessment Addendum dated May 2024 includes revised assessments, following post determination discussions with Dorset Council, Hampshire County Council and National Highways.
- 2.17 These assessments take into account the revised education strategy for the proposed development, following the same methodology as the TIR. This is detailed in the Education Trip Generation Technical Note appended to the TAA. Additional junctions were modelled in Fordingbridge at the request of HCC:
- 1) Salisbury Street / Bridge Street / High Street
 - 2) Station Road / Normandy Way
- 2.18 The TAA also includes modelling using sensitivity test assessments, with lower rates of development internalisation and therefore higher external development trip generation. The sensitivity tests of Hampshire and Dorset junctions retain reductions in existing vehicle movements due to the provision of additional facilities to meet daily needs within Alderholt. The sensitivity tests in Hampshire and Dorset include additional committed development traffic flows at HCC's request, as well as TEMPRO growth.
- 2.19 The modelling in the TAA shows that the site access – Hillbury Road roundabout, Station Road / Ringwood Road and Hillbury Road / Station Road junctions would all operate within capacity under all scenarios. The Ringwood Road access is not modelled as it is a continuation of the carriageway. Stage 1 Road Safety Audits of the two proposed access points have been undertaken, with the remaining points matters for detailed design stage.
- 2.20 The proposed mitigation scheme at the Provost Street / Shaftesbury Street / High Street junction would operate within theoretical capacity, even in the sensitivity scenario. The TAA includes further detail of the alternative mitigation scheme of a one-way system, using Provost Street as southbound only, and West Street as northbound only, which would remove conflict over existing narrow bridges. Modelling shows that the junctions of Provost Street / Shaftesbury Street / High Street, Church Street / West Street and West Street / Shaftesbury Street would operate within theoretical capacity if operating in a one-way manner. The proposed highway works in Fordingbridge require a Stage 1 RSA, which is being undertaken, and a financial contribution would be provided to cover the TRO process.
- 2.21 The modelling of the two additional junctions requested by HCC shows that they would operate within capacity under all scenarios.

- 2.22 As a result of the revised assessment requested by National Highways, the proposed mitigation scheme at the Verwood Road / A31 Eastbound junction evolved, whilst retaining the general principles outlined in the TA. The modelling of the revised design in the TAA shows that the junction would operate within capacity. The highway works at the junction are subject to a Stage 1 RSA.
- 2.23 The TAA also contains details of revised link widening proposals, now based on a LIDAR survey to a greater degree of accuracy than OS mapping. The TAA contains forecasts of the number of large vehicles likely to be generated by the proposed development once fully occupied, and shows that a car would be able to pass a large vehicle in the majority of locations along the links, except for the locations detailed in paragraph 7.7 of the TAA. The proposed widening is within the public highway and would not significantly change the existing highway layout. The TA does not include an assessment of construction vehicle movements on these road links.

3. INFORMATION SUBMITTED IN RESPECT OF SUSTAINABLE TRANSPORT MEASURES

- 3.1 The details of the proposed off-site sustainable transport measures are contained within the TAA and can be categorised according to whether they would promote sustainable transport within Alderholt, or in terms of travel to other settlements. Unless otherwise stated, the intention is for the measures to be delivered by S278.
- 3.2 The proposed measures to promote sustainable travel within Alderholt are:
- Footway extension on Ringwood Road
 - Footway extension on Hillbury Road
 - Improved connections to Birchwood Drive & recreation ground (via financial contribution)
 - Traffic calming & active travel corridor along existing Ringwood Road alignment, once spine road operational
 - Advisory cycle lanes and removal of centre line on Station Road & Ringwood Road
 - Funding to extend 30mph speed limit on Hillbury Road
 - Financial contributions to improve PROWs
- 3.3 The measures to promote sustainable travel outside of Alderholt are:
- A financial contribution for a public bus service between Cranborne – Alderholt – Fordingbridge – Ringwood that is half hourly in the peak periods and hourly in the interpeak period. This would also provide sustainable transport to Cranborne Middle School.
 - A financial contribution to enable home to upper school transport
 - Provision of bus stop infrastructure within the site and contributions to provide additional bus stops in Alderholt
 - Financial contributions to improve PROWs in Dorset and Hampshire generally, and specifically PROW E34/6 between Hillbury Road and the B3078
 - Provision of a footway / cycleway alongside the B3078 between BOAT E34/42 and Ashford Road
 - Provision of signalised crossings for pedestrians and cyclists at the A31 / Verwood Road junction

- 3.4 PROW E34/6 runs between two property boundaries, and according to OS mapping, is 2.8m at its narrowest part. On site measurements suggest the existing usable surface within the PROW corridor is 0.5m at its narrowest, and that widening to c. 2 – 2.5m is achievable with clearance of low level vegetation. Additional width could be achieved if boundary vegetation were pruned. In this area, the PROW is straight with good forward visibility.
- 3.5 A Stage 1 Road Safety audit of the cycle facilities towards Fordingbridge is being undertaken.
- 3.6 A Framework Travel Plan was submitted with the planning application that commits the developer to promote sustainable transport to site users, via Travel Plan Coordination. This includes providing Travel Information Packs to all households / employees with personalised travel planning, sustainable travel incentive, and a travel plan website. Monitoring fees would be paid to Dorset Council.

4. AGREED MATTERS

Highway Impact

- 4.1 The key planning policies relevant to consideration of transport effects are:
- NPPF (Dec 2023) paragraph 115
 - Policy KS11 of the Christchurch and East Dorset Local Plan Part 1 – Core Strategy (2014), particularly, *‘Development will be permitted where mitigation against the negative transport impacts which may arise... is provided’*
- 4.2 If outline planning permission is granted with all matters reserved except for means of access from the Hillbury Road roundabout, an appropriate condition would be required to secure a minimum of two points of vehicle access and safe and appropriate means of access for pedestrians and cyclists.
- 4.3 The provision of employment space and village centre would reduce the need for existing and future residents to travel outside of Alderholt, reducing the number of external vehicle trips generated. The methodology to quantify this was agreed with Dorset Council at pre-app stage.
- 4.4 Dorset Council’s outstanding query over total people trip rates has been resolved. Alternative calculations have been provided to enable sensitivity testing of the junction models. The alternative calculations include higher residential trip rates and lower levels of internalisation.
- 4.5 The modelling of junctions with Hampshire and Dorset include committed development flows and allow for TEMPRO growth, such that there is an element of double counting within the total forecast flows. The scope of the junction modelling presented in the TAA is appropriate.

- 4.6 Dorset Council's microsimulation modelling demonstrates that a development of 1750 dwellings would not have a significant impact on congestion. The individual junction modelling undertaken as part of the TA and TAA show different results to those in the microsimulation model.
- 4.7 The capacity of a roundabout or priority junction is measured in terms of the Ratio of Flow to Capacity (RFC). The theoretical capacity of a junction or approach arm is 1.0; however, an RFC of above 0.85 indicates that the modelled junction may operate unsatisfactorily. When interpreting junction modelling outputs, it is also necessary to consider forecast queues and delays.
- 4.8 The modelling undertaken for the planning application demonstrates the existing junction layouts would operate within capacity and therefore the residual cumulative highway impact of the development would not be severe at:
- Site Access – Hillbury Road roundabout
 - Station Road / Ringwood Road
 - Hillbury Road / Station Road
 - Salisbury Street / Bridge Street / High Street
 - Station Road / Normandy Way
- 4.9 The modelling undertaken for the planning application demonstrates that the existing layouts of the Verwood Road / A31 and Provost Street / Shaftesbury Street / High Street junctions would operate over capacity in future assessment years, and the development would further worsen the performance of the junctions.
- 4.10 However, with the proposed mitigation scheme at the Verwood Road / A31 junction in place, the junction would operate within capacity, such that the residual cumulative impact at this junction would not be severe. The preliminary scheme design is acceptable and would address an existing safety issue at the eastbound entry to the A31. National Highways consider there to be no outstanding matters.
- 4.11 With the proposed mitigation scheme of widening the Provost Street approach at the junction with Shaftesbury Street / High Street in place, the junction would operate within capacity. Moreover, the TA and TAA show the junction performance would be improved in comparison to a future scenario without the development and associated mitigation, such that the residual cumulative impact at this junction would not be severe.

- 4.12 If deliverable, the alternative mitigation scheme in Fordingbridge of a one-way system would remove conflict over narrow bridges on Provost Street and West Street. With this mitigation scheme in place, the Provost Street / High Street / Shaftesbury Street and Church Street / West Street junctions would operate within capacity, with negligible queuing and delay. The West Street / Shaftesbury Street junction would operate within theoretical capacity, with some queueing and delay in the AM peak. The junction would however perform better than the existing Provost Street junction in a future scenario without the development and associated mitigation, such that the residual cumulative impact at this junction would not be severe.
- 4.13 The proposed mitigation schemes at the A31 / Verwood Road junction, Provost Street / High Street / Shaftesbury Street, and one way system in Fordingbridge will require a Stage 1 Road Safety Audit, which is being undertaken.
- 4.14 The existing road network generally operates safely, with accidents attributable to factors such as driver error, rather than deficiencies in the road layout. Cars, buses, HGVs and cyclists all safely navigate the road network. The proposed development traffic and proposed mitigation measures are unlikely to significantly worsen the existing highway safety of the highway network, subject to the findings of the Road Safety Audits.
- 4.15 The majority of the vehicle movements generated by the proposed development would be cars. The number of large vehicles generated would not result in a significant increase in the chance of two large vehicles meeting. The proposed widening would help vehicles to pass, and a car would be able to pass a large vehicle in most locations.
- 4.16 The proposed widening is minor in any one location and is within the public highway. The widening would not significantly change the existing layout, such that the impact of the widening on highway safety is likely to be negligible. Given the minor nature of the works, an RSA is not necessary to form a view on safety at this stage, however, the highway works will be subject to independent Road Safety Audits in due course. Dorset Council consider the principle of the widening is acceptable, and the drawings are based on accurate surveys. Further details would be provided at S278 stage.

Sustainable Transport Measures

- 4.17 The proposed development would form a permeable extension to the existing settlement, with various pedestrian and cycle connections to Ringwood Road, Hillbury Road and Birchwood Drive. Safe and suitable access to the development site for all modes from Hillbury Road has been demonstrated to be achievable.
- 4.18 Pedestrian and cycle improvements are proposed within Alderholt beyond the site access. This includes traffic calming and active travel corridor along the existing Ringwood Road alignment, once the new spine road is operational. A typical pedestrian walking speed is 1.4m/s, and at this speed a walk of 15 minutes would cover 1260m.
- 4.19 Other proposed highway works in Alderholt include the provision of advisory cycle lanes and the removal of centre line on Station Road and Ringwood Road. Financial contributions towards general improvement of PROWs can also be secured through S106.
- 4.20 A financial contribution is proposed to facilitate a significantly improved bus service which if delivered would provide existing and future residents with an alternative to use of the private car to travel to Cranborne, Fordingbridge and Ringwood. Additional public transport connections are available in Fordingbridge and Ringwood. This would decrease reliance on the private car. The contribution has been calculated by one bus operator on the basis of an hourly service, with half hourly service in the peaks. The service would also enable travel to Cranborne Middle School, whilst a separate contribution will be made to enable travel to QE Wimborne upper school. The contributions can be secured through the S106.
- 4.21 A new cycling route is proposed between Fordingbridge and Alderholt which, if deliverable, would provide an alternative to cycling on the carriageway. The scheme consists of the provision of cycle facilities at the Hillbury Road / Station Road junction, a financial contribution to improve PROW, a new footway / cycleway alongside the B3078, and connection to Ashford Road which meets the criteria for cyclists to share the route with vehicles. The scheme requires a Stage 1 Road Safety Audit, which is being undertaken.

- 4.22 If delivered, the scheme would encourage use of sustainable transport modes and provide a further alternative to use of the private car for some journeys, particularly for commuting purposes between the two settlements. The route along the PROW and shared footway/cycleway would generally be 3m in width, reducing to 2-2.5m at pinch points such as the western end of the PROW. The scheme would represent a safer route of greater amenity for cyclists, compared to the alternative of cycling on carriageway, subject to the findings of a Road Safety Audit. Pedestrians would also benefit from the improved facilities.
- 4.23 Safe and suitable access to the development site has been demonstrated for all modes from Hillbury Road. Walking and cycling improvements are proposed in neighbouring areas, details of which can be secured through condition, S106 or through S278. A public transport contribution could enable a choice of modes for travel to nearby settlements, decreasing reliance on the private car. The provision of a cycle link towards Fordingbridge would provide an alternative to the private car for some journeys.

5. MATTERS IN DISPUTE

- 5.1 Whether sufficient information has been provided to demonstrate whether the residual cumulative effects on highway capacity would not be severe.
- 5.2 Whether an appropriate level of detail has been provided to demonstrate the proposed widening of the carriageway is deliverable. The highway authorities' concerns relate to passing of vehicles, potential impact on vegetation, third party features, forward visibility and access visibility where widening is proposed, the suitability of the route for buses, and consideration of construction traffic.
- 5.3 Whether an appropriate level of detail has been provided to demonstrate the cycling and pedestrian link between Alderholt and Fordingbridge can be delivered to an acceptable standard. The highway authorities' concerns relate to the width available along the PROW, the width available alongside the B3078, , the attractiveness of the proposed routes for pedestrians and cyclists, impact on ecology & arboriculture, passing of HGVs and that Ashford Road would not be suitable for all cyclists.
- 5.4 Whether pedestrian and cycle movements are prioritised within the scheme and in neighbouring areas. Whether an appropriate level of detail has been provided to demonstrate the proposed footway along Ringwood Road is deliverable.
- 5.5 Whether it is appropriate for details of pedestrian and cycling facilities within Alderholt to be secured via S106 agreement or left to the S278 stage.

- 5.6 The highway authority has concerns over the available carriageway width of Station Road and Ringwood Road to deliver advisory cycle lanes.
- 5.7 Whether the sensitivity test flows used in the modelling of junctions within Fordingbridge are appropriate due to reductions in existing vehicle movements. Related, whether the committed development flows used in the model of the Salisbury Street / Bridge Street / High Street junction are appropriate.
- 5.8 Whether proposed vehicle trip distribution and assignment is appropriate in respect of Fordingbridge.
- 5.9 Whether the one-way mitigation scheme option in Fordingbridge would be appropriate. HCC's specific concerns are that the scheme would reduce the width of the footway, large vehicles turning right would overhang the footway, an existing parking bay blocks visibility and that large vehicles may not be able to traverse West Street.
- 5.10 Whether the proposed financial contribution value towards public transport services is sufficient and therefore whether the proposed public transport improvements are deliverable and viable.

Signed by James Rand on behalf of the appellant

James Rand

21.06.24

Signed by Richard Fitter on behalf of Dorset Council
