Development Management

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MEMORANDUM

From :	**To** :
Jethro Punter Principal Highways OfficerHighways Dev. Management Team LeaderHighways Dev. Management Team LeaderHighways Dev. Management Team LeaderHighways Dev. Management Team Leader	Stuart Robinson Principal Planning Officer

Please Contact :	**Our Reference** :	**Your Reference** :	**Date** :
Jethro Punter	**CB/18/01969/OUT**		14 December 2022

Application No: **CB/18/01969/OUT**
Location: **Land between Brogborough, Lidlington and Marston Moretaine**
Proposal: **Outline Application: development for up to 5,000 new homes specialist residential accommodation, up to 30ha of employment land, retail, community, open spaces, leisure and sport uses, hotel uses, four lower schools, two middle schools, one upper school, woodland planting, waterbodies and waterway links, ecological areas, accesses, cycle and pedestrian routes, supporting infrastructure, ground remodelling, landscaping and demolition works.**

Report Refs:

- Updated Transport Assessment (March 2022) and associated Appendices.

Plan Refs:

- Fig 1.1. Site Location
- Fig B3 – Speed Limit Assumptions

- C94 Brogborough Hill Site Access Roundabout – ref. 332310149/5513-101
- C94 / Sheeptick End Site Access Signalised Junction – ref. 332310149/5513-102
- C94/Employment Access Site Access Roundabout – ref. 332310149/5513-103
- C94/Employment Access Site Access Signals – ref. 332310149/5513-104
- C94 Thrupp End Site Access Signalised Junction (Bus Only) ref. 332310149/5513-105
- C94 Eastern Site Access Signalised Junction ref. 332310149/5513-106
- C94 / Woburn Road Signalised Junction ref. 332310149/5513-107
- C94 / Marston Road Site Access Junction ref. 332310149/5513-109
- Station Lane / Site Access Roundabout ref. 332310149/5513-110
- Station Lane / Site Access (Waterway) ref. 332310149/5513-111

Thank you for consulting with Highways Development Management with regards to this application.

Context and background

Central Bedfordshire Council have been engaging with the applicant with regards to the Martson Valley development over a substantial period of time, following the submission of an original planning application in 2018.

The current set of information received and reviewed by the Highways Development Management team represents an update to that original application.

The application in question is expected to provide approximately 5,000 residential units and a mix of other uses including significant employment, schools (primary and secondary), retail and other ancillary development, spread over a number of 'village' areas, forming the wider Marston Valley Development.

The site is subject to a Development Brief, which was endorsed by CBC in March 2022, and which outlined a number of the principles associated with the development. Particularly relevant to matters of transport and highways were the following:

Access, Movement and Connectivity (page 18)

'Consideration of the impact from the development on the local road network and how this can be mitigated, limited, or prevented is a principal development consideration.'

Key Development Influences and Opportunities (Pages 30/31) –

'Resolve existing highways issues such as the impacts from large vehicles moving through the centre of Marston Moreteyne and large vehicles accessing Millbrook Proving Ground from the strategic road network via Millbrook Village. Protect the local highway networks serving existing villages but support connectivity for those communities to the MVNV offer.'

'Maximise connectivity for all non-motorised modes of sustainable transport.'

'Deliver an integrated and coordinated public transport network and capitalise on the unique opportunity to imbed public transport as the primary choice for longer distance trips through the delivery of East West Rail infrastructure. Establish a range of direct, safe and convenient pedestrian and cycle links to public transport to maximise first/last mile connectivity.

Primary Access and Movement (Pages 65-70)

'Changes to the design of the C94 should redefine its role in the highway network, and ensure that through the introduction of appropriate design measures, it can become a multi-modal transport corridor prioritising walking, cycling and access to employment uses and lower vehicle speeds than currently possible. In addition to providing a primary route for cycling, the C94 will also become the main point of access to the strategic road network for those vehicular trips into the wider area.'

With regards to the strategy for local and strategic vehicular movement the brief states that:

'Considering the issue at this stage of the planning process can also take account of the benefits of the development including investment in highway infrastructure at M1 J13 and the wider strategic and local road network in order to mitigate the impacts of the development. This can ensure that routes to key destinations via public transport, active travel modes, or via the strategic road network are the most efficient options.'

Development Tests: Test 5 – Connecting Places and People (Page 81)

'Sustainable movement networks will be a priority for the MVNV so that these modes of travel can be the first choice for residents. Investment in new infrastructure must mitigate transport impacts of the development'

As such, whilst not a fully prescriptive document, the Development Brief does set down a number of key principles which form part of the context against which the updated Outline Planning Application has been reviewed, specifically that it should be a development which:

- Promotes sustainable transport
- Encourages the use of strategic rather than local infrastructure for vehicular traffic
- Provides mitigation where necessary
- Protects the surrounding villages
- Changes the nature of the C94 corridor

The following response does not represent the final position of CBC Highways Development Management with regards to this application but rather provides a current position with regards to the review of various elements of the submission related to transport and access.

Modelling, Trip Generation, and Trip Distribution

Forecast Background

Due to the scale of development and the potential wider impacts of mitigation work at Junction 13

of the M1 (as well as other works across the network), the Marston Valley development Transport Assessment was based upon the use of a bespoke Saturn Model, which was developed to support the original 2018 application.

At the time of the original submission of the application in 2018 the base model was reviewed and considered to be an appropriate tool for the assessment of development impacts. However, as with all Strategic Models, whilst it would provide a means of forecasting growth on the highway network, and of distributing and assigning traffic related to the proposed development, it would not provide sufficiently accurate data in terms of individual junctions to allow for detailed junction modelling. As such the applicant's approach is to apply the amount of growth within the model, (between the base year and forecast years) to observed traffic counts, rather than take flows directly from the model.

This is considered to be a reasonable approach, but subject to appropriate checks in terms of the amount of growth predicted within the transport model.

Due to the age of the application, submitted in 2018, the survey data upon which the Marston Vale Transport Model was built dates back to 2016. This would generally be older than would be considered representative, however it is acknowledged that for much of the period during which the transport work for the development was being progressed, traffic flows were impacted by COVID restrictions on travel, meaning updated and representative surveys could not be undertaken.

Whilst **Appendix C** of the submitted TA does provide some comparative assessment between the 2016 data and pre-COVID data from 2018 and 2019, this is predominantly focused upon the Strategic Road network and a small sample of local roads. As such CBC remains of the view that a wider cross-checking exercise is necessary to confirm the acceptability of the Marston Vale Transport Base Model.

As COVID restrictions have now been lifted for some period of time, allowing travel patterns to settle, the applicant is advised to undertake a series of validating counts to demonstrate that the base data upon which the model was constructed remains representative and robust. In the event that the validation exercise shows a reasonable variance from the counts used to construct the model, then further work will be required.

Overall Model Growth – The model has vehicle trips loaded into the network for each of the assessment periods in question, with forecast years of 2029, 2035, and 2042. A check comparing the number of total trips in the network for each assessment period for the reference case scenarios (i.e.: those which exclude Marston Valley Traffic), against the comparable level of growth if TEMPRO growth factors were applied was carried out and is tabulated below.

	Model Growth		TEMPRO	
	AM	PM	AM	PM
2016-2029	11.2%	11.6%	13.0%	13.4%
2029-2035	3.2%	3.3%	3.9%	4.3%
2035-2042	3.8%	3.7%	4.3%	4.3%

In each case the level of growth within the model is lower than that which would be the case if TEMPRO were directly applied, however its acknowledged that TEMPRO would also include Marston Vale as a Local Plan allocated development, and as such the TEMPRO growth factors would also

include an allowance for Marston Valley development traffic.

As a further check, a comparison of overall growth was therefore carried out in which the alternative planning assumptions option within TEMPRO was applied, and within which the housing and employment associated with the Marston Valley development was removed. This assessment showed the overall level of growth within the model being higher than the alternative TEMPRO assessment, and therefore provides some confidence that the model is predicting a robust level of background growth.

Trip Generation

By the final 2042 assessment year, the Marston Valley Transport Modelling work predicts a total of 8,543 person trips in the AM peak hour, of which 2,994 are predicted to be external vehicle trips. In the PM peak the model predicts a total of 6,568 person trips, of which 3,538 are predicted to be external vehicle trips.

CBC have consistently expressed the view that the number of trips in the AM Peak hour are lower than would be expected when comparing to sites within TRICS. It is appreciated that there will be a degree of internalisation (where trips will take place within the site, due to the scale of the development and the number of local facilities and employment opportunities provided), however CBC remain of the view that the AM external trip totals remain low, potentially related to the assumption within the modelling that residential to educations trips (and vice-versa) will all take place within the development and not impact upon the wider network.

Appendix K of the submitted Transport Assessment includes a 'Sensitivity Test' which considers the impacts of uplifting the AM peak hour flows to a level closer to CBCs expectations, however it is unclear how the additional trips have been assigned to the network, which would need to be clarified.

There also appear to be a number of reporting errors or anomalies within the note, with Table 2.9 (for example) providing one set of results as DoS (Degree of Saturation) and the other as RFC (Ratio of Flow to Capacity), one of which would apply to signal controlled junctions, whilst the other would relate to non-signal operation.

The results in Table 2.17 (Bury Ware / A507) also appear to be incorrect, with apparently substantial differences between the 'Test' (excluding the additional school trips) and 'Sensitivity' (including the additional school trips) results, with delay increasing from less than ten seconds on the Bury Ware left turn, to over 217 seconds in the sensitivity test. This does not appear to relate back to the Assessment contained within the Completion of Development Assessment provided as **Appendix J**, which you would expect the 'Test' assessment to directly reflect.

The same appears to be the case with regards to the results summarised in Table 2.19 (A507 / Ampthill Road / Flitwick Road), in which the operation of the junction appears to be substantially different between the two scenarios.

Bearing the above in mind, I would not currently consider that I could place reliance upon the content or conclusions of the Sensitivity test provided as **Appendix K** and remain of the view that the uplift in AM vehicle trips should form part of the core assessment.

The way in which these additional trips have been applied to the network should be outlined clearly. In addition, any mitigation should be based upon the revised and uplifted flows.

Transport Modelling

A review of the details of the modelling work is ongoing, including, but not limited to, the following:

1. Checks that all development trips are being accounted for within the modelled network.
2. Confirmation of the number of existing trips which may be re-routing as a result of adding Martson Vale development traffic to the network. This appears to particularly be the case on the C94, where the net change in trips between the with and without development scenarios are more limited than would be expected, although trip displacement also appears to be taking place elsewhere on the network.
3. Reviewing the balance of trips forecast to use the strategic and local road networks. At present there appear to be a disproportionate number of trips using the local road network.

It has also been identified that there are some coding updates that will need to be carried out by the applicant, associated with the assumed infrastructure around junction 13, and the assumed speeds limits through Marston Moreteyne.

Notwithstanding the findings of the wider review of the modelling work, these coding changes would also need to be addressed within an update to the assessment work.

I am aware that there have been representations made by adjacent authorities following the submission of the update with regards to specific developments that they wish to see accounted for, and I would advise that the applicant therefore addresses the above, in conjunction with any other agreed updates to development assumptions in a further model run.

Post Mitigation Modelling

There remains the need to confirm the validity of the base modelling work. When the base modelling is agreed, the view of CBC was that an assessment of the network with core elements of mitigation in place would be necessary to determine wider traffic impacts, and that this should then form the basis of agreeing a final scope of assessment.

The applicants **Appendix N: Post Mitigation Modelling Assessment** makes it clear that changes to the network will result in the further re-routing of traffic, even when based upon the currently proposed package of mitigation. For example, two-way flows on the A507 are predicted to increase (over and above the increase already predicted) by circa 250 trips west of the Bury Ware Junction in the AM peak following the introduction of mitigation works at M1 J13, with increased flows also predicted on the B530 further to the east. Further increases in the numbers of trips through Salford (in the order of 80 trips) are also predicted, as are reductions in the numbers of trips through Church End, south of the M1. It is important to note that these are all relative changes, i.e.: the additional difference caused purely by the mitigation package, and so are additional to any changes reported within the Transport Assessment.

Assessment of impacts and mitigation

In light of the ongoing review of the modelling work, no commentary has been made upon the wider off-site traffic impacts of the development in terms of either highways mitigation work, or the Transport Chapter of the Environmental Assessment, as these may be subject to change as a result of the wider transport modelling review, both in terms of location and quantum of impact, and also

the related mitigation.

Notwithstanding the above, and the need for any final extent of assessment to be determined after these modelling queries are addressed, at present the with development 'test' scenario is showing impacts to the west of the A421 (with a two-way trip increase of 120 vehicle movements west of the A421 on Beancroft Road in the 2042 PM peak) and to the south of the M1 (with a two-way trip increase of 242 vehicles on Bedford Road south of the M1 in the 2042 PM peak). There are also increases of 242 two-way movements on the A421 towards Milton Keynes during the same period, upon which Milton Keynes Council have previously made representations. Similar levels of increase are also predicted on these routes during the AM peak hour.

Whilst the updates to the modelling work outlined previously may result in changes to these routing patterns, should these levels of traffic movements continue to be forecast, then further and more detailed assessment would be required.

Modelling Summary

In summary, at present CBC Highways Development Management have a number of outstanding queries that require addressing before further and more detailed comment can be made. These can be summarised as:

1. The need to carry out a validation exercise to confirm that the model base remains appropriate and robust.
2. The need to update the model forecast assumptions, including committed development and infrastructure.
3. The need to update the AM development external vehicle trip numbers.
4. That the degree of rerouting is then assessed, to determine whether the access strategy is meeting the requirements of Local Plan Policy and the site Development Brief, to provide a deliverable scheme of improvements to J13 of the M1 and improvements to the strategic and local highway network as necessary, to mitigate the impacts of development, to encourage traffic to use the strategic road network, and to protect the surrounding villages and local road network.
5. In the event that significant re-routing or significant use of the local road network continues to be identified, that further consideration is given to the mitigation package proposed.
6. The scope of any assessment can then be finalised and based upon the revised flows resulting from the above exercise, including the development of any mitigation package of works.

The applicant is undertaking further work in discussion with CBC to respond to the queries outlined above.

Development Phasing

The phasing of development and related infrastructure is considered to form an essential element of the overall transport strategy for Marston Valley, with the timing and availability of infrastructure and facilities, both on and off site having a potential significant impact on traffic routing and modal choice.

The timing of the development Spine Road is of particular importance, as it will provide connections

between the residential and other elements of the development, including the secondary school, provide a key bus route within the site, and is also expected to include the LTN 1/20 compliant 5.0m footway / cycleway.

At present the modelling assumptions exclude the delivery of the full Spine Road until the final 2042 assessment year, with the 2035 scenario assuming a significant buildout but without the Spine Road in place. It has consistently been the view of CBC that the Spine Road should be delivered as early as possible in the phasing of infrastructure for the reasons outlined above, and that the need for the Spine Road at a given point in time should not be driven purely by issues of highway capacity.

Notwithstanding the above, **Appendix N: Post Mitigation Modelling Assessment** of the submission does provide some further assessment with regards to the delivery of the Spine Road.

The review of the flows through Lidlington included within the Appendix looks at the level of flow through the Church Road / The Lane / High Street junction, with 600 trips predicted through the junction in the PM peak by 2029, 1003 by 2035 and 1048 by 2042 (with the 2042 assessment including the assumption that the Spine Road is in place). The case is then made that, as there is limited difference between the 2035 (no Spine Road) and 2042 (with Spine Road) assessment, the provision of traffic calming measures within Lidlington would mean that the Spine Road may not be required by 2035. For clarity CBC do not support this view, and would not consider that the predicted levels of increase in traffic through Lidlington are acceptable.

In addition, the approved Development Brief makes reference to limited / controlled access to and from Lidlington via Sheeptick End and Thrupp End. However, at present the Transport Assessment only considers the end case, in which the Spine Road is fully constructed. It is unclear how the various connections to, from, and within Lidlington will be provided for in advance of the Spine Road being fully delivered, with the potential for a heavier use of unsuitable routes such as Sheeptick End prior to the upgraded Sheeptick End junction and access road being delivered.

As such CBC would be looking to the applicant to provide further details with regards to the phased development and infrastructure delivery.

Public Transport

At present it is understood that the development proposes the delivery of two bus services, one running north-east to south-west, between Bedford and Milton Keynes (bus route 1) and the other running north-west to south-east), between Cranfield and Flitwick (bus route 2). Whilst the detailed timing and phasing of the proposed services is not confirmed, the Transport Assessment provides the following broad assumptions.

- 2029 – Bus route 1 delivering an assumed frequency of 2 buses per hour in each direction.
- 2035 – Bus route 1 delivering an assumed frequency of 3 buses per hour in each direction.
- 2042 – Bus route 1 delivering an assumed frequency of 3 buses per hour in each direction.

It is however noted that there is no specific commitment to the timing of the second proposed service, in terms of either initial delivery, or phased build-up of service. Following the submission of the reserved matters planning application for Wixams Station, further consideration of potential connections may also be appropriate in terms of the potential for public transport interchange at the proposed station.

With regards to routing, CBC also continue to have concerns over intensifying the use of the Bury Ware / A507 junction, which is currently assumed to form part of the routing for the second proposed bus service.

There also appears to be some discrepancy between the proposals detailed in the Public Transport report Technical Note 018 – Public Transport Strategy and Viability (associated with the 2018 application) and the text of the Updated Transport Assessment, with the report referring to an initial hourly service and / or early phases being served by a demand responsive service. As such further discussion and clarity on the bus service proposals is required.

The current phasing proposals for the development detail the full completion of the Spine Road not taking place until the final phase of development, i.e.: post 2035. Notwithstanding the Council's more general concerns with regards to the delivery of the Spine Road at such a late stage in the development, the related implications with regards to the main bus route proposed (bus route 1) are also unclear. As such, further clarity on how the bus routes proposed will operate prior to the completion of the Spine Road is required. The level of site penetration by bus services will also need to be discussed further, with the expectation of the Council being that the majority of users should be within 400m of the nearest bus stop, enabling a 5-minute maximum walking time to the nearest available stop.

In terms of the delivery model for the public transport proposals, it is noted that the Updated Transport Assessment refers to bus service funding being included within the proposed overall Transport Cap for the site, which is detailed as covering a range of measures, not limited to public transport. For clarity, CBC are not supportive of this approach, and are of the view that public transport should be considered as a separate and ring-fenced provision. Whilst the delivery model remains to be discussed and agreed, at this point in time it is expected that this would be most appropriately secured via either a Service Level Agreement, in which the applicant is fully responsible for the delivery of an agreed, phased level of service, or via a ring-fenced contribution. In both cases further discussions with the Council's public transport team will be required to determine the appropriate means of delivering the service and the phased levels of service to be secured and delivered. It is suggested that an update to the service viability work carried out for the 2018 application is carried out, taking into account the points raised above, to help inform those discussions.

With regards to bus stop infrastructure, at present there is no obvious provision for bus stops on the C94, which as one of the key corridors serving the development, including the employment sites to the west of the road, would be considered an important element of any scheme. As such CBC would be seeking further information within the package of proposed works to the C94 to cater for buses. In the first instance these would be expected to be in the form of bus stop laybys.

Walking and Cycling

The current application proposes two main areas of walking and cycling provision, these being related to the route proposed alongside the C94, predominantly in the form a 3.0m shared footway / cycleway, on which more detailed comment is provided later, and a LTN 1/20 compliant route within the site, expected to run alongside the development Spine Road. With regards to these two major routes, it is accepted that the provision of a fully LTN 1/20 compliant route alongside the C94 would not be achievable due to existing constraints, however this does highlight the importance of the timely delivery of the fully compliant route proposed within the site. It would not, for example,

be considered appropriate for the phasing of the route within the site to reflect the proposed timing of the Spine Road, which would result in the major pedestrian and cycle corridor linking key destinations within the development not being fully opened until the final phases of development. As such further clarity on the timing of onsite pedestrian and cycle infrastructure is required.

At present, whilst the walking and cycling proposals within, and adjacent to, the site are broadly welcomed, including the detailed work associated with developing or enhancing connections to the wider public footpath and bridleway network, there should also be a wider consideration of connections outside of the site, providing for longer distance pedestrian and cycle journeys. CBC would be looking to the development to provide a contribution towards a scheme allowing for pedestrian and /or cycle crossing in the vicinity of M1 J13 and providing for onward connection to the A421.

Concerns have been raised with regards to the current standard of pedestrian provision within Millbrook, in particular due to the increase levels of traffic that are forecast as a result of the proposed development. Whilst the submitted ES addendum does not consider development impacts on Sandhill Close, on the basis that the increase in traffic falls just below the 30% threshold for assessment (at 28%), I would be of the view that Sandhill Close should be considered as sensitive in terms of additional traffic, with regards to the nature of the pedestrian routes adjacent to the carriageway and should therefore be brought within the scope of the ES (with a 10% threshold being recommended for locations considered to be specifically sensitive).

I would further advise that the applicant consider a pedestrian improvement scheme within Millbrook to address the forecast impacts of development traffic.

The walking and cycling strategy associated with the 2018 application is referenced within the updated TA as remaining largely unchanged, with that document highlighting the importance of links to locations including:

- Marston Mortaine;
- Lidlington, Millbrook, and Ridgmont Rail Stations;
- Millenium County Park;
- Cranfield;
- Milton Keynes; and
- Flitwick Rail Station

Whilst these routes are shown at a high level on plans appended to the 2018 Transport Assessment, I would consider it appropriate for the applicant to review these routes, identifying any gaps in provision or improvement works required to enable those sustainable links to be used by people travelling to and from the Marston Vale development.

Signage Strategy

Whilst this will be matter for further discussion and agreement, I would consider it appropriate for a development of the scale proposed to be supported by a comprehensive signage strategy. This would include both the consideration of changes to directional and information signage directly related to the access to and from development, with supporting signage to discourage inappropriate

routing through the surrounding villages.

Construction Management

A development of the scale proposed will reasonably be expected to be constructed over a prolonged period, and as such there will be a need for a comprehensive and phased approach to managing the impacts of construction traffic. Whilst I appreciate that the details related to the development will come forward at the appropriate stage in the planning process, and as such the full construction impacts for each phase are not known, it would be appropriate for a comprehensive outline construction traffic management plan to be provided, which will set the framework within which future and more detailed construction traffic plans will be developed and delivered.

Marston Vale Access Comments

As the ongoing review of the modelling works may have a subsequent and related impact upon individual junction modelling, including site access junctions, I have not made any comments on individual junctions in terms of capacity modelling within this initial response. I have however provided some commentary with regards to a number of the site access plans and proposals submitted for the applicant's attention, referenced against each individual plan for convenience.

I am also mindful that the applicants access strategy is reliant in part upon changes to the local road network, in particular the C94, with related changes to the nature and speed limit of the road. Considering the nature of some sections of the C94, it is the view of CBC that further measures would be required (such as the introduction of hard strips or other measures to reduce the running carriageway where appropriate) to reinforce the changes in speeds proposed, as any changes in speed limit would have to be considered to be appropriate for the nature of the road and self-enforcing. At present the scheme proposals exclude these supporting measures and as such, whilst I have reviewed on the basis of the applicant's speed limit assumptions, the scheme will require further consideration to help support any changes in speed limits. Whilst I am mindful of the outline nature of the application and would therefore not be seeking the agreement of a fully detailed scheme, it is considered appropriate for indicative proposals to be developed to a sufficient level to demonstrate that the speed reductions proposed are practicable. The applicant team should also be aware that changes in speed limit are subject to a separate consultation process, the outcome of which cannot be pre-determined.

General points

Notwithstanding the outline nature of the application, there are a number of high-level checks which I would advise the applicant to carry out to demonstrate the deliverability of the access proposals. I note that whilst access is not being determined, the submitted 'Development Specification Report' which provides a summary of the planning permission being sought, includes a parameter plan which shows the location (if not the form) of access serving the site. As such, in the case of accesses where the location is considered likely to be relatively fixed, due to the need (for example) to interface with existing junctions or access/es, or where the extent of highway land would limit the scope to either move or significantly revise any proposed junction arrangement, I would wish to see the following:

- A high-level design check to identify any relaxations or departures from standards.
- Swept paths for the largest expected design vehicle type.
- A Stage One Safety Audit.
- Preliminary vertical alignment information, particularly taking into account the vertical alignment of some sections of the C94 where access/es are proposed.

I would also advise that the applicant considers carrying out the same exercise for the remainder of the proposed access points.

The same level of detail would also be required (when there is sufficient certainty) for any off-site highway mitigation works proposed.

With regards to more general points:

- There is no obvious provision for bus stops on the C94, which would be particularly relevant to the employment uses to the western side of the road. It is likely that any such provision would need to be located within offline bus laybys. The applicant should review and provide details of how bus provision will be accounted for within the overall design approach to the C94.
- Where specific bridleway or PROW improvements or amendments are proposed, including bridleway crossings, I would advise that the PROW team provides specific advice on these matters.
- The proposals generally provide a 3.0m width shared cycleway / footway, stating that this level of provision is the best possible facility that can be delivered within the land available. It is acknowledged that there are constraints on this route, and that LTN 1/20 does allow for shared facilities in some circumstances (such as alongside arterial roads where there are few pedestrians), with a 3.0m width being acceptable for up to 300 pedestrians and 300 cyclists per hour. Notwithstanding this, the level of provision alongside the C94 would not be considered sufficient in isolation and would have to be supported by a fully segregated and LTN 1/20 compliant route within the site.
- Where works impact either a hedge-line or ditch, the applicant should confirm that wider implications of delivering the scheme, in terms of other interested parties, have been considered, including gaining any necessary agreements or approvals (for example where a ditch may require culverting or re-aligning.

I have carried out an initial (high-level) review of the access proposals, summarised below. This should not be considered to replace the need for the requested design check and Safety Audit and is intended purely to highlight a number of initial pertinent issues to the applicant team for their further attention. All of the comments made are predicated upon the future design speeds assumed by the applicant, and so should be considered in conjunction with the wider comments related to the future treatment of the C94 and any proposed changes in speed limit. Should the changes in speed limit proposed not be progressed, then the design standards to be applied would have to be amended accordingly.

C94 Brogborough Hill Site Access Roundabout – ref. 332310149/5513-101

The scheme includes a shared 3.0m footway / cycleway with a 1.5m verge separation which is

considered appropriate for a roadside provision within a 50mph limit.

The scheme provides for 160.0m approach visibility, which is considered appropriate for 50mph.

However, I would raise concerns over the proximity of the proposed junction to the crest of Brogborough Hill, which is likely to have a sub-standard crest curve. It is understood that the proposed junction is 220m from the crest of the hill, with DMRB standards not allowing for substandard crest or sag curves within 1.5 times the SSD (Stopping Sight Distance) for the design speed of the road from a roundabout. The proposed scheme is based upon an assumed 50mph design speed, with an associated SSD of 160m. 1.5 times this would be 240m, i.e.: the proposed junction location appears to be closer to the crest curve (assuming it is substandard) than DMRB standards would permit. As such this appears to represent a departure from standards and therefore appears likely to require further assessment and possible amendment in terms of junction location and/or design.

C94 / Sheeptick End Site Access Signalised Junction – ref. 332310149/5513-102

The scheme provides a 3.0m footway / cycleway on western side of C94 with 1.5m verge separation, which is considered appropriate for 50mph.

The scheme also provides for 1.8m verge separation to the shared Bridleway, which is considered appropriate.

The scheme provides for 160.0m approach visibility, which is considered appropriate for 50mph.

I note that there is currently no service bay for signal maintenance. The scheme will need to identify and provide for a suitable service bay.

No reference has been made to the removal of the Road Restraint System on the eastern side of the C94. This would have to be agreed, and the appropriate processes followed to determine whether the barrier can be removed and / or what alternate provision is required, as it appears that the bridleway scheme detailed could not be delivered with the road restraint system as currently exists.

C94/Employment Access Site Access Roundabout – ref. 332310149/5513-103

The scheme provides for a 3.0m footway / cycleway with 1.0m verge separation, which is considered appropriate for 40mph.

The scheme provides for 120.0m approach visibility, which is considered appropriate for 40mph.

I note that the splitter island on the eastern arm is too narrow to accommodate cyclists, this will need to be amended to provide a minimum depth of 3.0m.

The southern footway / cycleway appears that it may require works to the ditch, or that the ditch may need to be realigned within the site to accommodate the proposed works. The applicant should confirm that they have the relevant agreements required to carry out works impacting the ditch.

C94/Employment Access Site Access Signals – ref. 332310149/5513-104

The scheme provides for a 2.0m footway on northern side of C94 with 1.0m verge separation, which is considered suitable for 40mph.

The scheme provides for 120.0m approach visibility, which is considered appropriate for 40mph.

There is currently no service bay for signal maintenance (although it is assumed that this could be

provided for within the employment parcel).

The proposals result in the loss of two existing laybys – the applicant should confirm whether they have undertaken any assessment of current use of the laybys and confirm any proposals for re-provision.

C94 Thrupp End Site Access Signalised Junction (Bus Only) ref. 332310149/5513-105

The scheme will require traffic orders to alter the use of the road and restrict non bus movements, the outcome of which cannot be guaranteed.

The scheme provides for a 3.0m footway / cycleway with 1.0m verge separation, which is considered appropriate for 40mph.

The scheme provides for 120.0m approach visibility, which is considered appropriate for 40mph.

Signal intervisibility appears achievable.

I note that there is currently no service bay for signal maintenance. The scheme will need to identify and provide for a suitable service bay.

It appears that the access to Escheat Farm falls within the signals and does not appear to have been accounted for within the proposed design. The applicant will need to address how access to this property will be maintained, and how it will operate safely following the introduction of the signal junction.

C94 Eastern Site Access Signalised Junction ref. 332310149/5513-106

The scheme provides for a 3.0m footway / cycleway with 1.0m verge separation, which is considered appropriate for 40mph.

The scheme also provides a section of route with 0.5m separation, this represents the absolute minimum acceptable.

Crossing the bridge includes no separation from the carriageway, which would not meet standards. If this was to be progressed it would have to be agreed as a departure.

The scheme provides for 120.0m approach visibility, which is considered appropriate for 40mph.

Tapers should be developed at 1:5, which appears to be achieved for the northern but not southern approach.

Signal intervisibility appears achievable.

I note that there is currently no service bay for signal maintenance. The scheme will need to identify and provide for a suitable service bay.

The southern footway / cycleway appears that it may require works to the ditch, or that the ditch may need to be realigned within the site to accommodate the proposed works. The applicant should confirm that they have the relevant agreements required to carry out works impacting the ditch.

C94 / Woburn Road Signalised Junction ref. 332310149/5513-107

The scheme provides for a 3.0m footway / cycleway with 1.0m verge separation, which is considered appropriate for 40mph.

The scheme provides for 120.0m approach visibility, which is considered appropriate for 40mph.

Signal intervisibility appears achievable.

I note that there is currently no service bay for signal maintenance. The scheme will need to identify and provide for a suitable service bay.

The holding area for the equestrian crossing is detailed as being substandard. The degree to which this provision is substandard should be qualified and may require the agreement of a departure from standards.

I would advise the inclusion of a turning area, for vehicles unable to continue east on Woburn Road, in particular ahead of an alternative route through the development being available for traffic to re-join the C94.

C94 / Marston Road Site Access Junction ref. 332310149/5513-109

The right turn provides for a 25m deceleration length, 10m turning length and 5m taper, which appear appropriate for a 30mph design speed.

Whilst the current assumed design speed is 30mph, and CBC highways would support such a speed on the Primary Street, this would have to be designed to be self-enforcing with appropriate measures, treatments and frontage activity.

The right turn lane is 3.0m in width. Whilst this represents a permissible relaxation within DMRB, as an unconstrained site I would expect to see the desirable width of 3.5m provided.

The central refuges providing for pedestrian / cycle crossings would also need to be widened to allow for a depth of 3.0m.

The eastern radius of the junction appears to be very large, and it is unclear what the rationale for this radius is.

The provision of a 5m segregated footway / cycleway running alongside the primary street is welcomed. Whilst I appreciate that this remains an indicative scheme at present, with all matters reserved, I would also highlight the advice from Government that all streets should be tree lined. As such I would advise that consideration is given to an overall cross section which allows for planting alongside the primary street. I would refer the applicant to figure 6.3 of LTN 1/20 in terms of the standard of provision and associated cross section that we would seeking.

Station Lane / Site Access Roundabout ref. 332310149/5513-110

Design speed for this roundabout junction is proposed at 30mph, however based upon the location of the junction, I would have significant reservations about such a speed being achievable and self-enforcing. The section of Station Road in question is predominantly a straight road which could encourage relatively high speeds. It appears from the plans submitted that forward visibility can be achieved for higher design speeds and in the first instance I would advise that the applicant considers the implications of a higher design speed (potentially 50mph) and that this is supported by speed surveys to show current 85th %ile speeds. Dependent upon the final design speed, there may still remain the need to provide supporting measures to maintain any revised speed limit between the roundabout and the current extent of the 30mph limit to the west.

The central island on the southern arm of the roundabout junction will need revising to provide a

minimum depth of 3.0m to allow for safe cycle crossing.

The scheme provides for a 3.0m footway / cycleway with 1.0m verge separation, which is considered appropriate for speeds of up to 40mph, however if a higher design speed is applied then there would be a need for a greater degree of verge separation.

Station Lane / Site Access (Waterway) ref. 332310149/5513-111

Visibility splays of 43m are provided which are appropriate for a design speed of 30mph.

The central island for the informal cycle crossing to the north of the junctions will require widening to provide a minimum depth of 3.0m.

The right turn lane for the southern junction appears to be substandard in length and may represent a departure from standards.

I will be in a position to provide further comment when the applicant has sought to address the queries outlined above.

Comments and advice in this memo are based on the information supplied in the planning application and accompanying documents/plans and no liability is accepted for any inaccuracy therein.