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

11th August 2023

F.A.O. John Fannon

Dear John

Application Number:	**22/06443/FULEA**
Proposal:	**Full planning permission for production space and supporting buildings for screen-based media and associated services/industries – Transport Assessment Addendum 2 Comments.**
Location:	**Land Adjacent South Side Marlow Road and A404 Junction Westhorpe Park Little Marlow Buckinghamshire**

The Highway Authority (HA) has provided a number of previous consultation responses in relation to this application, the latest being in a letter dated 5th May 2023 that responded to the information contained within the Transport Assessment Addendum, dated March 2023, submitted by the applicant.

That previous response concluded that a number of issues were still outstanding and these were listed as bullet points at the end of the response. I will repeat those bullet points below for confirmation.

- The updated VISSIM modelling is required so that it can be reviewed by Atkins on behalf of the Council.
- Swept path analysis plans for the internal layout showing the largest vehicles travelling through the site is required.
- The applicant's response to the HA comments on the RSA Designers Response is required.
- A response to the comments made by the Council in relation to the Cycle and Pedestrian Strategy document is required.
- A response to the comments made by the Council in relation to the Sustainable Travel Strategy: Handy Cross Park & Ride Opportunity document is required.
- Further consideration of the parking within the site is required on the basis that the 60% vehicle mode share is not considered to now be realistic due to the Council's position on the reliance of the Handy Cross P&R site.
- Further clarification on the parking accumulation exercise is required.
- The Mode Share Incentive Scheme needs to distinguish between sustainable trips, vehicle trips to off-site locations and vehicle trips to the site.
- Reconsideration of trip distribution for the managed flow scenario to take into account any changes in the modal share targets and provide information to confirm the distribution assumptions.
- Further consideration of the development traffic impact on the wider network base on the need to carry out further detailed assessments of junctions that show greater than a 5% traffic flow impact on any one arm.
- Reconsideration of the impact of the development traffic on the Parkway arm of the A4155 Little Marlow Road/Parkway roundabout junction and appropriate mitigation measures.

- Reconsideration of the standalone assessments of the three identified junctions once the VISSIM modelling review has been finalised by the Council.

Following consideration of the points raised in the previous response the applicant has submitted a Transport Assessment Addendum 2 (TAA2) dated June 2023 and I will provide comments on that information below.

Resurvey and VISSIM Modelling

As mentioned in my previous response, the applicant took the decision to rebuild the VISSIM model provided to them by the Council and in order to do this they carried out new traffic surveys in March 2023 to inform the rebuilt model.

The applicant has provided the Council with the rebuilt base model, which has been subject to review by Atkins on behalf of the Council. The base model has now been confirmed as suitable for use as a reference case against which the proposed development model impact can be compared. Currently the applicant is making amendments to the future year model following a further review by Atkins in order to be in a position where they can test the development traffic impact. The applicant provided the updated model with associated information on 11th August 2023 and Atkins have started to undertake a further review. At this stage I am therefore unable to provide any further comments on the VISSIM modelling at this stage or confirm that it presents an acceptable assessment of network operation with the inclusion of the development.

Sustainable Travel Strategy

Travel Plan

As referred to in the original consultation response from the HA, dated 21st September 2022, a Framework TP, dated May 2022, has been prepared which will be upgraded to a Full TP upon occupation of the Site. Since the submission of the original Framework Travel Plan (FTP) there have been a number of changes to the application. The HA is not currently aware that an updated FTP has been provided which reflects the current proposals. I would be grateful if the applicant could please confirm whether an updated FTP has been prepared and submitted for consideration. Once I have received an up to date FTP I will finalise my comments in this respect.

Public Transport

The applicant has previously set out their proposals for public transport provision in the original TA and TAA. The applicant is still proposing to include a new north-south bus service between High Wycombe and Maidenhead which will connect with the site; however previously there was a suggestion that the site could rely on a number of parking spaces being available at the Handy Cross Park and Ride site, to effectively act as off site parking for the development. A number of discussions relating to this have taken place between the applicant and the Council, which has led to this suggestion being removed from the application proposals.

The applicant has suggested that a new 30-minute interval service with three vehicles will provide quick access between the urban areas and railways stations in High Wycombe and Maidenhead, including the Elizabeth Line. It is proposed that operational times will be centred on employee start/finish times whilst also providing a public service.

The applicant is also proposing an east-west ‘hopper’ style local bus between Marlow and Bourne End which they state would cover both employee requirements and local movements within the immediate vicinity of the Site. Buses will be used flexibly to provide local ‘staff only’ commuter bus services in the 06:00 - 08:45 and 16:15 - 19:05 periods as well as public ‘hopper’ services.

The Councils Passenger Transport section have been asked for up to date comments on the current proposal and I will update the HA's position once the new comments have been received.

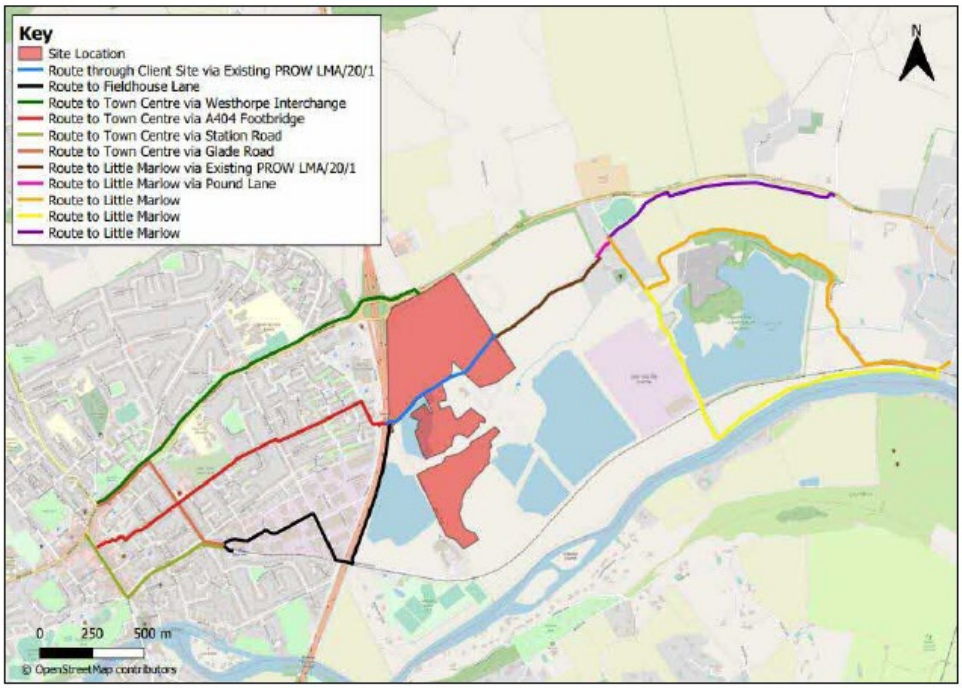
Active Travel – Cycle and Pedestrian Strategy

The HA has previously provided comments on the cycle and pedestrian links to the site, especially with regards to the physical and psychological barrier for pedestrians and cyclists, travelling between the site and Marlow, that is created by the A404.

The HA had also previously highlighted the need for a pedestrian and cycle audit to be carried out in order to demonstrate the suitability of the existing pedestrian and cycle network and identify where improvements are required. In previous responses the HA also highlighted the need for plans to be provided that show any improvements proposed so that the HA can be satisfied that they can be delivered by the applicant on land within either their control or land that forms the adopted public highway.

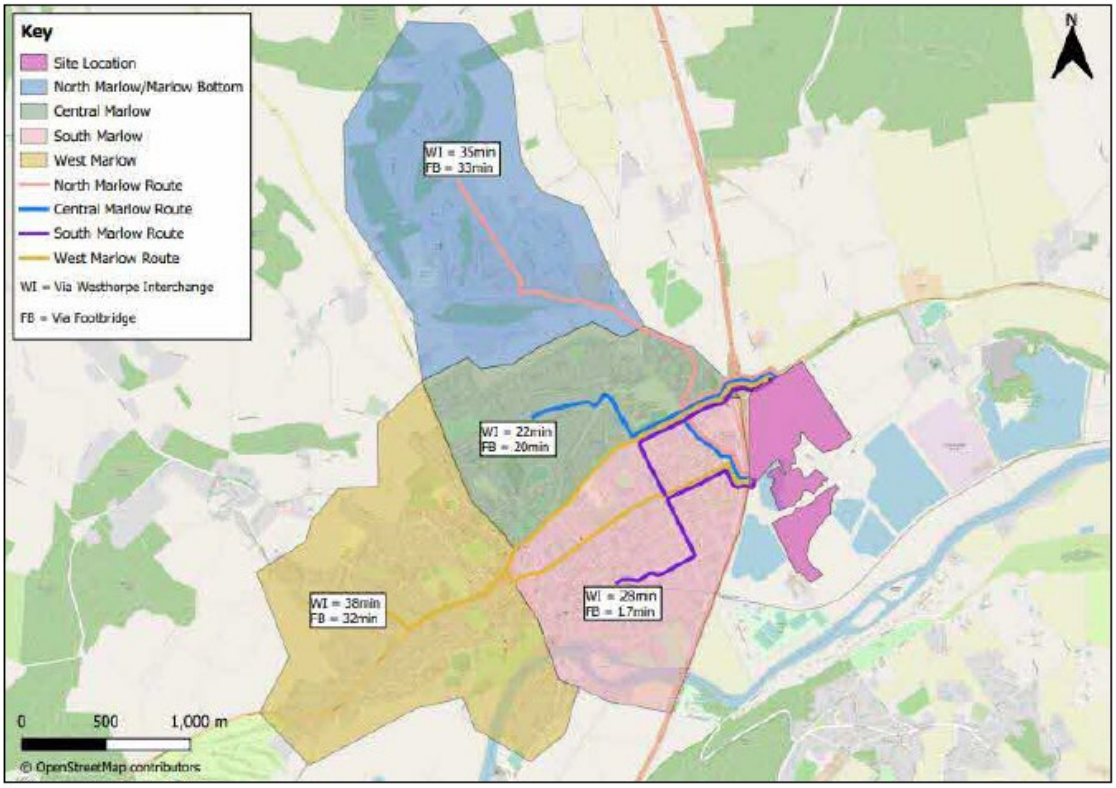
As part of the further investigations into the walking and cycling routes to/from the site, the applicant has considered the main walking and cycling routes into Marlow to the west of the site and towards Little Marlow and Bourne End towards the east of the site. The applicant has advised that an audit of each route has been undertaken in order to identify where improvements are needed. The principal routes that have been identified are included in Figure 4 on page 22 of the TAA2, which I include below for confirmation.

Figure 4: Principal Pedestrian and Cycle Routes Plan



The applicant has considered the walking and cycling journey times from different zones within Marlow and the site via the proposed links to the west of the site. Three main routes have been identified, the first being from the northern part of the site via the main site access and across the Westhorpe junction and into Marlow. The second is towards the centre of the site and utilises the existing Volvo Footbridge to cross the A404, and the third is to the south of the site via Fieldhouse Lane. Figure 5 in the TAA2 shows the walking time comparisons between the identified routes, which I have included below for confirmation.

Figure 5: Pedestrian Journey Times from Marlow via Proposed Access Points

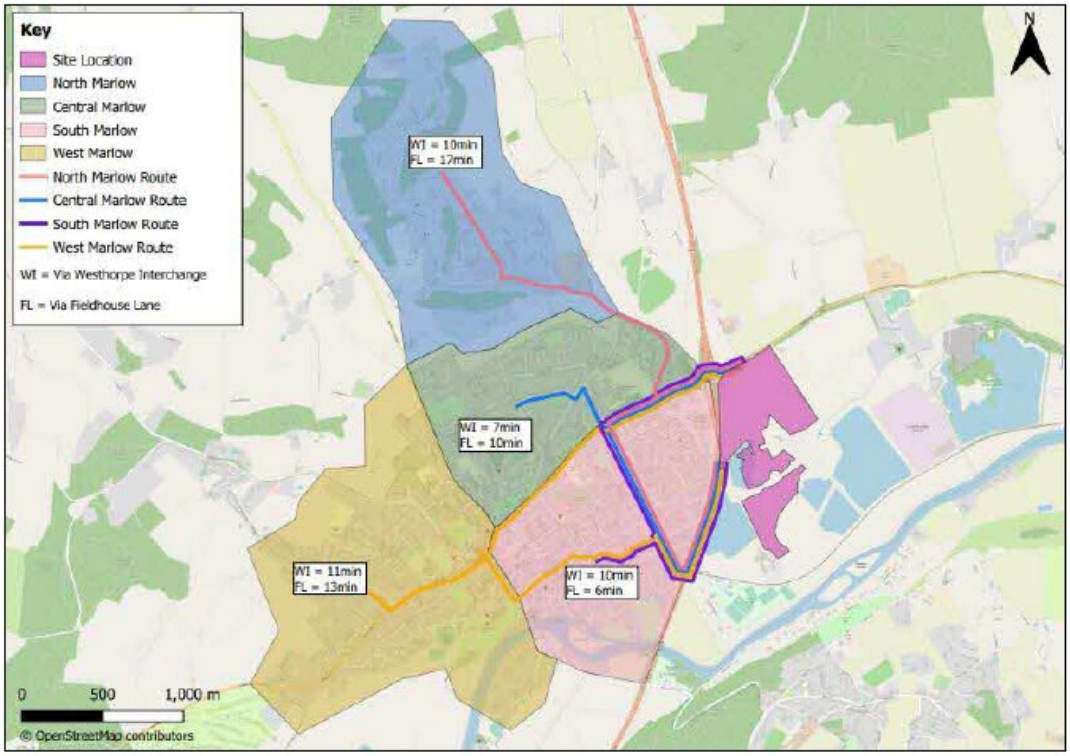


I have reviewed the routes and associated journey times and I have the following points to raise:

- Journey times appear to have been taken from the edge of the site. There is no appreciation of how travelling from different parts of the site to different parts of Marlow would impact on walking/cycling time.
- If a pedestrian was in the north eastern part of the site and wanted to travel to the north of Marlow but the only option to them would be to use the Volvo footbridge or the Fieldhouse Lane link then this would appear to have a detrimental impact on the journey times and is unlikely to be seen as convenient or attractive to sustainable forms of transport.
- If an improved safe and convenient option is not available to pedestrians/cyclists then this may result in them trying to use an option which is not safe (i.e. across the Westhorpe junction without any improvements). This could either result in safety issues or result in people not wanting to use sustainable forms of transport and just using the private car instead.
- It would seem that the route via A4155 and Westhorpe Interchange is always going to be a desire line.

The applicant has also carried out a similar exercise for cyclists, however the route via the Volvo Footbridge has not been included as this is not suitable for cyclists. The information is contained in Figure 6 on page 24 of the TAA, which I include below for information. It should be noted that the title of Figure 6 refers to pedestrian journey times, however it is assumed that this has been written in error and the information actually refers to cycling journey times.

Figure 6: Pedestrian Journey Times from Marlow via Proposed Access Points



I have reviewed the routes and journey times provided and have the following points to raise:

- Similar issues are observed for cycling as highlighted for pedestrians.
- The assessment provided shows that if Fieldhouse Lane was the option for cyclists, then in order to travel from this link to the north of Marlow there would be a 7 minute increase (or roughly a 70% increase) in journey time compared to if the cyclist was to use a route across the Westhorpe junction.
- If someone was looking to travel to the north of Marlow from the north eastern corner of the site via the Fieldhouse Lane link then the difference in time between using either a link via Fieldhouse Lane or the Westhorpe junction would be even greater.
- Currently the route across the Westhorpe junction is not safe or convenient for cyclists and therefore, if no improvements were carried out (i.e. this was not the applicant's chosen route to improve) and cyclists tried to utilise it as a much quicker option then this would unnecessarily increase their chances of conflict with vehicles on what is a very busy part of the network. Either that or they will simply choose to drive rather than use sustainable forms of transport.

The information contained within paragraph 2.30 of the TAA2 suggests that the applicant considers a route via Fieldhouse Lane may present the more attractive and safer route choice for pedestrians and cyclists. The Council does not agree with this position and I shall give further reasoning for this below.

The applicant has reviewed each of the highlighted routes in more detail in paragraph 2.31 onwards in the TAA2 and I will provide comments on information provided for those routes below.

Route to Marlow via Fieldhouse Lane

- This is cited as the applicant's preferred route, however, there has not been any confirmation that this route can actually be delivered due to third party land. The Council is aware that these issues are outstanding and have not yet been resolved and the applicant stated at a recent meeting that they are not able to deliver or rely on this route at this stage but were willing to contribution to its improvement should it become available.

- It is noted that in the event that the route is secured, it would be as a minimum private and accessible only for future employees and users of the site.
- It is noted that on the western side of the route is the A404 and on the eastern side of the route are trees and a lake. The route is therefore isolated and not overlooked. No assessment has been provided of how attractive this route would be when taking this issue into account.
- In darker winter months it is questionable as to how many people would consider this to be a safe and attractive route. No details are provided to show how the applicant intends to deal with this issue, therefore as presented the Council does not consider this route as an appropriate route to provide the main pedestrian/cycle link between the site and Marlow.

Route via Volvo Footbridge

- It is recognised that this route is not suitable for cyclists and it does not allow for safe and convenient access for people who are mobility impaired. There are currently no detailed proposals to show how access for these people is to be achieved via this option.

Route to Marlow Town Centre Via Westhorpe Junction and A4155 Corridor

- A significant concern regarding this route is getting pedestrians and cyclists across the Westhorpe Roundabout in a safe and suitable way.
- It is noted that the applicant states a preliminary design has been drafted of a proposed potential improvement scheme to cater for pedestrians and cyclists crossing the Westhorpe Interchange. It is also noted that the applicant states that the principle of these improvements needs to be discussed with National Highways and Buckinghamshire Council.
- It is stated that the scheme includes the part signalisation of the interchange including controlled pedestrian crossings on the northern slip arms of the junction. The Council is aware that the pedestrian crossings have now been built into the model and form part of the information that is currently under review by Atkins on behalf of the Council.
- It is also proposed to increase the height of the parapet on the northern circulatory arm to cater for cyclists, however there is concern about the width of footway/cycleway across the junction and whether this is adequate in order to accommodate the pedestrian and cycle movements from the development. A plan containing these improvements has recently been received by the Council and is currently under review.

Concerns remain that the applicant is stating that the route via the Westhorpe Interchange and any improvements to the Volvo footbridge to allow it to cater for cyclists and people with mobility impairments, would be fallback positions should the route via Fieldhouse Lane not be secured. The Council is concerned over the reliance on the Fieldhouse Lane option as the main option and remains of the opinion that all three routes should be improved and available as attractive, safe and convenient options to access the site via sustainable means of transport.

Following a recent meeting on 10th August 2023, the applicant has now confirmed that the principal route for peds/cycles is now proposed to be via improvements to the A4155 route across Westhorpe, with a second pedestrian only route via Volvo footbridge. Given the size of the site and desire lines it seems to the Council that there must be multiple routes available to both pedestrians and cyclists to make this mode of travel an attractive proposition and to meet the aims of the sustainable transport strategy for the site.

I will also now include initial comments on the Pedestrian and Cycle Audit carried out by the applicant, which for confirmation is contained within Appendix C of the TAA2.

Pedestrian and Cycle Audit

Route 1 – Existing Route from Marlow Station to Fieldhouse Lane

- At a meeting on 10th August 2023 the applicant confirmed that they cannot deliver this route as it stands so cannot rely on it for the purposes of the application
- The route has been described, however there are no details on widths of footways, whether they are adequate in order to cater for additional pedestrian movements and how the conditions compare to the requirements of LTN1/20.
- There is a section of footway that passes under the bridge of the A404 and it is noted that this limits pedestrians to single file and may force pedestrians onto the carriageway when passing. This does not appear to be an acceptable situation and while it is stated that the removal of overgrown vegetation may improve the situation there is no detail on what this may improve the width from and to and whether this is an acceptable width when taking into account footway widths cited in Manual for Streets and LTN1/20.
- Part of the highlighted route passes through the Globe Business Park, which is a private development. How is the applicant going to guarantee that pedestrians/cyclists associated with the site can use a route through what is a private area that does not form part of the public highway?
- It is stated that signage along the route maybe required to guide pedestrians/cyclists. There is no detail of what signage might be used and where it would be located. It is also not clear how the applicant would provide signage on the private land within the Globe Business Park.
- It is stated that the applicant is committed to upgrading the section of the route adjacent to the A404 in order that it is suitable for both pedestrian and cyclist use in line with LTN1/20, however no details of these improvements have been provided to allow the Council to Condition them as part of any permission and as it stands the land is not within their control.

Route 2 – Proposed Route through Applicant Site via PROW (LMA/20/1)

- It is recognised that this PROW is not currently suitable to provide a safe and suitable route to the site, therefore improvements are mentioned. However, no plans of these improvements have been provided which would allow the Council to secure them as part of any permission.
- It is noted that the applicant states resurfacing of the existing path and the provision of low level lighting will deliver a secure and safe connection at all times. However the Council has concerns over the attractiveness of what is essentially a PROW, which is not overlooked and is remote from built up areas, as a main link to provide safe and suitable access to the site.

Route 3 – Existing Route to Town Centre via A404 Footbridge

- As with Route 1, a written description of this route is provided, however no widths of any footways or carriageways have been provided to inform the Council on their suitability to be used by pedestrians and cyclists associated with the site.
- Information on widths would allow the applicant/Council to identify areas where improvements need to be considered. This has not currently been provided.
- It is noted that the Volvo footbridge provides a route for pedestrians, however this is not an attractive or convenient route for cyclists or people with mobility impairments. No improvements to address this have been proposed.
- A route has been highlighted that passes adjacent to an allotment which appears to have a high hedge on one side and a high wall on the other. This part of the route is not overlooked and is not likely to be attractive or convenient for pedestrians or cyclists to use, especially in darker winter months.
- It is stated that this is the preferred pedestrian route, however there is insufficient detail provided for this route to allow the Council to reach this position. Given the scale of the development and desire lines and the fact that the Fieldhouse Lane route cannot be delivered or relied on, it means that this route and the Westhorpe Roundabout route have much greater importance and multiple

safe and suitable routes should be achieved to ensure that walking and cycling is a realistic and attractive choice.

Route 3 – Alternative routing for cyclists

- Two further routes to avoid the footpath adjacent to the allotments are discussed.
- No details are provided on widths of footpaths that are intended to be part of the cycle route so it is not possible at confirm their appropriateness.
- If the route contains a footpath, are cyclists allowed to use it and if so, is there sufficient width to accommodate the cyclists as well as any pedestrians that may be using it? No details have been provided.
- The alternative routes also highlight a number of roads for cyclists to use. Are conditions along these roads suitable for cyclists, in terms of the environment being as attractive as possible? Are there any improvements that could be made to make drivers more alert to the presence of cyclists? This comment would apply to all other on-carriageway routes currently highlighted for cyclists.

Route 4 – Existing Route to Town Centre via the Westhorpe Interchange

- It is noted that this route does benefit from existing shared walking and cycling facilities along Little Marlow Road (A4155) heading into Marlow, however the applicant suggests that this route is unfavourable due to the need to cross the Westhorpe Interchange.
- The Council considers that the route along Little Marlow Road into the centre of Marlow should be high priority for focussing improvements to aid the movement of pedestrians and cyclists as it provides a useful 'spine road' along a more central alignment through Marlow, which pedestrians and cyclists can use to then travel to the north and south to access different areas of Marlow.
- The applicant is urged to further consider improvements across the Westhorpe Interchange to aid the safe and convenient route of pedestrians and cyclists in order to facilitate the use of this route into Marlow.
- No detail has been provided to highlight any other areas of this route that may need improvements and previous correspondence from the Council has suggested that improvements could be made where the route along the A4155 passes over side road junctions. An image of a LTN1/20 compliant crossing of side road junctions has previously been provided to the applicant; however such improvements are not evident in the submitted information.

It is understood that the applicant is currently preparing a further Audit that considers these routes in further detail and the Council is currently awaiting the submission of this further information for consideration.

Car Parking

It is noted that a managed parking regime will be implemented across the site where most of the vehicles arriving at the site will be pre-registered with spaces pre-booked. It is stated that unauthorised vehicles will be turned away from the site. The Council assumes that the vehicles that are turned away will park locally within Marlow and there is concern that this could cause issues within Marlow and beyond as there is no control over how many vehicles might actually do this.

The applicant has stated that in the event that parking restrictions are required offsite to deal with any issues resulting from the parking of vehicles associated with the Film Studio, a contribution will be made to enable the introduction of parking restrictions. However, it is not clear how the applicant would identify any offsite parking issues and the extent of the area that any additional restrictions would need to cover. The applicant is therefore required to provide more information in relation to areas that would be affected within a reasonable walking and cycling distance of the site and put forward proposals for mitigation

measures to give the Council confidence that this would be adequately dealt with should overspill parking occur.

Mode Shift Targets

As detailed in previous responses, and as recognised by the applicant, the mode shift targets that the applicant is aiming towards are ambitious. In order to hit the targets the applicant is going to have to achieve a significant shift away from the private car and towards the use of sustainable forms of transport. One way they are proposing to achieve this is by the footway and cycleway connections that I have detailed above notwithstanding their current limitations. The other ways are through a robust parking strategy within the site and reliable and convenient public transport links and control of parking off site. I have detailed the new bus services that they applicant is proposing, which are currently being considered by the Council's Passenger Transport Section with comments to be provided in due course.

With these measures in place the applicant is aiming to achieve a 16.7% uptake in sustainable transport modes and a 24.2% reduction in the use of private cars and vans. They are also targeting a 7.5% uptake in walking and cycling. The full targets are detailed in Table 2 on page 29 of the TAA2, which I will include below for information.

Table 2: Method of Travel to Work – STS Targets

Mode	Mode Share (%)		Change in Mode Share
Underground, metro, light rail, or tram	0.2%	Public Transport Mode Share 20.0%	+16.7%
Train	4.8%		
Bus, minibus, or coach	15.0%		
Taxi	0.5%		-
Motorcycle, scooter, or van	1.0%		-
Driving a car or van	60.0%		-24.2%
Passenger in a car or van	3.3%		-
Bicycle	7.1%	Active Travel Mode Share 15.1%	+7.5%
On foot	8.0%		
Other method of travel to work	0.1%		-
Total	**100.0%**		

Mode Share Case Studies

The applicant has provided case studies of what they consider to be schemes in which similar sustainable transport strategies to the proposed Monitor and Manage approach have been implemented and have been successful, measured by a shift in mode share to increased use of sustainable modes. Comments are provided below on each of the case studies;

Wellcome Genome Campus Development, Cambridgeshire

- In terms of the location of this site, it is further away from more significant residential areas when compared to the MFS site, but it is in close proximity to the existing strategic road network.
- This site comprises scientific uses, residential homes for Campus staff, Hotel and Conference, Genome Discovery and associated land uses including Nursery Care, Sports Centre. Community Facilities and Healthcare.
- The operations on the site are not comparable with the film studio activity, therefore it is difficult to determine whether any success in terms of mode shift to sustainable forms will be replicated at the MFS site.

- It is noted that the site includes high quality cycle parking across the site including a cycle/mobility hub which includes a mixture of short and long term parking as well as cycle maintenance facilities.
- A number of off-site improvements to walking and cycling connections have been referred to, however, apart from the footway/cycleway link to the north of the site along the A1301, it has been difficult to locate these.
- Facilities for cyclists and active travellers, such as changing rooms and showers, are provided for on site.
- Improved cycle connectivity to the local rail station, including signalised (Toucan) crossings on the A505. Other contributions to cycle connectivity improvements have been highlighted.
- The site utilises a dedicated shuttle bus service to the local rail station, with a demand responsive element being referred to, although it is not clear whether this currently operates.
- There is also reference to on-going discussions with nearby business parks to explore opportunities for combined services.
- The site wide Travel Plan seeks to achieve a reduction in single car occupancy vehicle trips to achieve a 40% modal share for Campus workers undertaking external trips.

A table has been included that shows the existing Campus modal share compares to the South Cambridgeshire average.

Table 3: Travel to work modal share comparison – Wellcome Tust Campus

Main Mode of Travel	South Cambridgeshire average	Existing Campus (2017)
Walk	7%	0.9%
Cycle	7%	6.0%
Motorbike /Scooter	1%	0.7%
Train	1%	1.5%
Bus	3%	32.2%
Car Driver Alone	69%	44.2%
Car Share Driver	4%	10.9%
Car Share Passenger	4%	3.4%
Taxi	0%	0.2%
Total	100%	100%

- The table does show that there is much greater bus usage for the site than that shown for the average in south Cambridgeshire. The initiatives to reduce car usage also appear to be working, however the walking and cycling share for the campus is shown to be less that the average for the area.
- The table does not provide confirmation on whether or not the mode share targets set out in the Travel Plan have been achieved.
- As mentioned above, it is difficult to determine whether a different use such as the MFS site would be equally as responsive to similar bus service provision.
- Does the applicant know whether the site is relying on a reduction in car movements in order to mitigate capacity issues on the network that would otherwise result from the development or whether the targets of the Travel Plan are purely to achieve a more sustainable development in line with government policy.

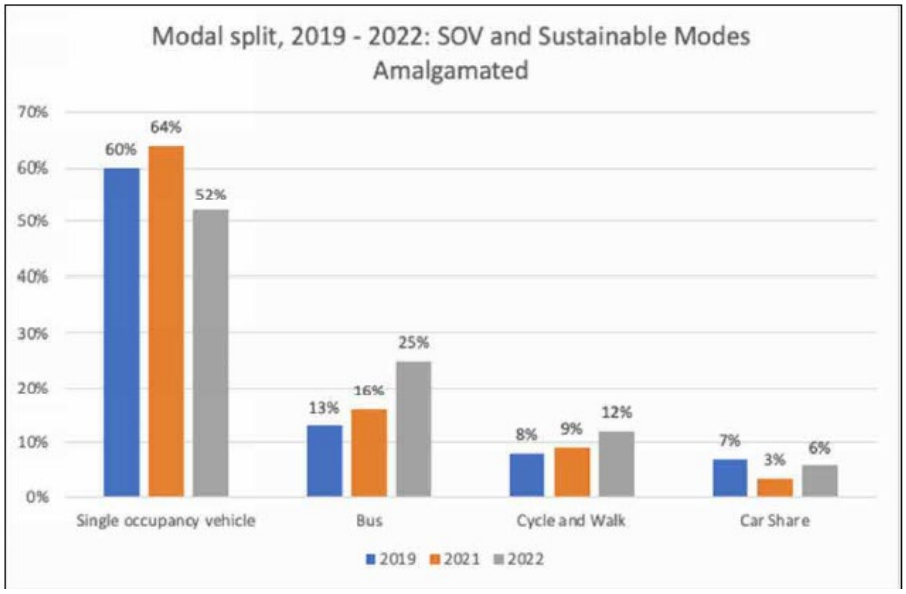
Milton Park, Oxfordshire

- This is described as a mixed use business park located in Oxfordshire, comprising high specification science, technology, office and industrial space, with 250 different employers.
- It is evident that the use of Milton Park is different to the potential use of the MFS site as this appears to be more office based employment that does not require the transport/movement of set equipment or tools, which may be more reliant on vehicle usage.
- The close proximity of the site to the strategic road network is noted.

- It is noted that the site provides frequent bus connections to local areas with cheap use of buses for people travelling from Didcot using any of the Thames Travel and Oxford Bus Company buses.
- It is stated that the site is located on the Science Vale Cycle Network with excellent connections around Oxfordshire, making cycling the mode of choice for a significant proportion of occupiers.
- The MFS site does not benefit from good cycle network connections at the moment, which is not likely to have the same impact as the cycle connections provided for Milton Park. This shows the importance of good cycle links which is why it is vital for them to be provided for the MFS site.
- It is also noted that the Milton Park site does not have a barrier like the A404 for pedestrians and cyclists to cross to access the site from the main residential area of Didcot, which may make walking and cycling a more attractive option for Milton Park when compared to the MFS site where pedestrians and cyclists would have to cross the A404 to access the main residential areas within Marlow.

A table has been provided to show how the sustainable transport measures have impacted on mode share since 2019.

Figure 11: Modal Split (2019 – 2022): SOV and Sustainable Modes Amalgamated – Milton Park



- The table does show that single car occupancy has risen and then fallen, but by only 8% and the use of sustainable forms of transport has risen. However this doesn't really show any long term patterns.
- Due to the difference in usage of this site when compared to the MFS site it is difficult to determine whether such measures would have a similar impact for the MFS site.
- Does the applicant know whether the Milton Park site is relying on the success of the sustainable transport measures to mitigate what would otherwise be an unacceptable impact on the highway network or whether the measures are purely aimed at achieving a sustainable development, consistent with government policy.

Pinewood Studios, Buckinghamshire

- This is another film studio site located in Buckinghamshire so is likely to have uses that are consistent with the proposed uses on the MFS site.
- Key measures of the sustainable transport strategy for the site have been identified as:
    - Internal street designed with appropriate footways and crossing points.
    - 3m wide footway/cycleway improvements on the highway network.
    - Use of pool bikes for employees to use around the site.

    - Free buses operating Monday to Friday between Pinewood Studios, Uxbridge underground Station, Gerrards Cross Station, West Ruislip and Slough Station.
    - Shuttle Busses to and from Uxbridge Station available to staff, production, tenants, visitors and also the local community.
    - Use of pool cars for staff to use for business travel.
    - Guaranteed lift home scheme.
    - Staff travel incentive scheme where staff using sustainable modes are awarded points which can be redeemed on site for exchange for goods or services.

- The applicant has referred to the recent approval at Pinewood Studios for the hybrid application (Ref: PL/22/2657/FA) where the Sustainable Transport Strategy included localised footway and cycleway improvements and a pro-rata expansion of the frequent high quality shuttle bus services connecting the studio with nearby rail stations.
- Reference has been made to the Travel Plan targets where they are looking to achieve 71.3% single occupancy car use by Centre Stage Staff within 5 years (10% reduction on the 2011 Census mode share), a 73% single occupancy car use by staff for the Studio Production floorspace within 5 years (10% reduction from car driver mode share identified by the 2016 Travel Plan surveys). It would appear that these targets are not as great as those proposed at the MFS site and are maybe therefore more realistic.
- Figures for the use of the shuttle bus services have also been provided which does demonstrate that they are used by a significant number of people but no information provided to show whether this meets intended targets.
- Information on whether or not the travel plan targets have been achieved is not currently available so it is not possible to determine how successful the measures have been.
- It is however evident that the Pinewood site does provide significant sustainable transport measures to promote the use of buses and trains to access the site. It also provides footway and cycleway improvements to promote walking and cycling.
- Pinewood does not have the issue of the A404 providing a significant barrier between the site and the nearest residential areas and the station meaning that walking and cycling from local areas to Pinewood is likely to be a more attractive option as it stands when compared to the situation in Marlow.
- Does the applicant know whether the Pinewood Studio site is relying on meeting TP targets in order to mitigate an unacceptable traffic impact on the local highway network?
- Again whilst this information sets out the measures in place and the targets that are intended to be met, it does not provide any evidence of whether the measures have been successful in meeting targets.

Cambourne, Cambridgeshire

- This site is described as a ‘free-standing community’ of 4250 dwellings, in addition to education, retail, community and leisure uses.
- In terms of uses within the site, it is evident that they do not really compare to those proposed on the MFS site, therefore travel characteristics are likely to be different and sustainable transport measures are likely to have a different impact.
- While the measures referred to by the applicant do appear to have resulted in a positive shift away from single occupancy car usage to more sustainable forms of travel, the fact that this site is effectively a self-contained community to some extent, means that it may be significantly easier to convince people to use sustainable transport when compared to a standalone employment site with a significant barrier to cross in order to access local residential areas, the town centre and the station.

JP Morgan, Bournemouth

- This site is home to more that 4,000 employees and has evolved into a strategic hub for Operations, Technology, Client Services and Corporate groups with worldwide reach.
- Again, it is evident that the uses on this site are not comparable to the uses at the proposed MFS site, therefore they may not react the same to the sustainable travel measures proposed.
- The applicant has stated that the site has well established facilities and measures at the site to support staff commuter travel.
- A table has been provided that shows the impact of the Travel Plan measures.

Table 5: Travel to work modal share comparison (Staff Surveys & Questionnaires) - Bournemouth

Main Mode of Travel	2002	2017	Change	Cumulative
Public Bus	3%	1%	-2%	+12%
JP Morgan Shuttle Bus	0%	14%	+14%	
Train	1%	1%	0%	
Cycle	4%	12%	+8%	+10%
Walk	7%	9%	+2%	
Car Driver	72%	48%	-24%	-26%
Car Passenger	12%	10%	-2%	
Motorcycle	1%	2%	+1%	+1%
Other	0%	3%	+3%	+3%
Total	100%	100%		

- The table shows that measures to encourage sustainable travel have been successful, however it is unclear whether the objectives that have been set have been met.
- The location of the site is adjacent to substantial residential areas and other facilities within Bournemouth to the south of the site, with no real barrier issues to overcome for cyclists and pedestrians. It would therefore appear to be less of a challenge to attract pedestrians and cyclists from these areas to the site when compared to the challenges that pedestrians and cyclists currently face at Marlow.

The case studies provided by the applicant do show that providing good quality sustainable transport measures can result in a positive modal shift away from the private car and towards sustainable forms of transport. However, it is not clear whether the measures cited in the examples would have such an impact at the MFS site due to the differences in the uses at the sites and the specific challenges faced at Marlow in terms of walking and cycling connectivity to the site.

The case studies do show that good quality bus services that provide convenient travel to a number of locations do have a positive impact on modal shift. The examples also highlight the importance of excellent pedestrian and cycle links to improve travel to the site by walking and cycling. This also reinforces the Council's position in relation to the walking and cycling improvements at the MFS site, including the provision of a number of routes to allow convenient travel between the site and different areas of Marlow.

There remains concern that the mode share targets proposed by the applicant are still ambitious, which is especially concerning as there is a reliance on these targets in order to mitigate development impacts on the road network and to achieve sufficient parking provision on site.

Further consideration is required when the modelling work currently underway has been finalised and the impacts of the development are fully understood, in order to investigate appropriate mitigation measures should model shift targets not be achieved.

The Council would also like to again point out the requirement for additional information on how the applicant is going to manage the potential for any offsite parking issues on the surrounding highway network as a result of the proposed development. This is an important consideration as if people who are associated with the site drive to the site without the intention, or permission to park on site, are unable to park in the vicinity of the site it will discourage them from driving to the area in the first place and at the same time encourage them to use sustainable forms of travel.

Junction Impact Assessment

Section 4 of the TAA2 looks at the static modelling of three junctions on the network in close proximity to the site. These include the following:

Junction 1: A4155 Little Marlow Road / Parkway Roundabout;

Junction 2: A404 / A4155 'Westhorpe Interchange' Roundabout; and,

Junction 3: A4155 Marlow Road / Pump Lane South / Site Access Crossroads.

Due to the close proximity of these junctions and the coinciding interaction between them, they have all been included in the VISSIM modelling work that is currently under review. I will not therefore provide any further comment on the assessment of these junctions at this stage.

The VISSIM modelling is covered in Section 5 of the TAA2, however as stated near the beginning of this response, the applicant has recently provided the Council with the VISSIM modelling work and associated technical documents that are currently under review by Atkins on behalf of the Council. Further comments will therefore be provided in due course.

Wide Area Network Impact

Following discussions between the applicant, National Highways and the Council, it has been agreed that the applicant carries out detailed junction impact assessments on 11 further junctions on the local highway network. The junctions subject to further assessment are as follows:

A404 Junctions

- M40 Junction 4 - Handy Cross Roundabout
- Bisham Roundabout

Marlow Junctions

- Wiltshire Road
- Newtown Road
- Glade Road
- Dean Street
- High Street

Little Marlow / Bourne End Junctions

- Winchbottom Lane
- Sheepridge Lane
- Blind Lane
- Cores End Road

The applicant has very recently provided a Technical Note to the Council that contains the detailed impact assessments of the development traffic at the junctions listed above and this document is currently under review. Further comments will be provided once the Council's review of this document has been finalised.

Site Layout and Vehicle Tracking

As part of the information included in TAA2, the applicant has provided further details of the internal site layout and the tracking of HGV's through areas of the site. While the Council notes that the internal site is to remain in private ownership, it is still considered that the site layout should be safe and suitable, therefore it is considered appropriate for comments on the layout to be provided. This is supported by paragraph 130 of the NPPF, which states the following:

> 130. Planning policies and decisions should ensure that developments:
>
> a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;
>
> b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
>
> c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);
>
> d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;
>
> e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and
>
> f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users[49]; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.

Initial comments on the site layout and vehicle tracking provided are as follows:

- Following a review of the internal site layout and the tracking provided it is evident that further clarification on how the internal layout will operate and how vehicles will travel through the site is required.
- It is noted that the site is to remain private, however the LPA wishes to be satisfied that the layout is safe and suitable, and as this is a full application, there needs to be adequate information submitted for consideration to allow this to be determined. At present it is considered that the information lacks sufficient detail.
- It is currently unclear whether all types of vehicles are able to access all parts of the site? This should be clarified on the plans.
- It is unclear what parts of the site are intended to accommodate two-way traffic flows and what parts are intended to be one-way. This should be clarified on the plans.
- There are cul-de-sacs shown in the eastern section of the site that appear to terminate without any turning area for vehicles. How is it intended for vehicles to turn once entering these cul-de-sacs?
- There are a number of 'large access doors' to many of the buildings shown on the Masterplan drawing (01841-WEA-MP-00-DR-A-0200) and it assumed that materials would be taken into the buildings via these doors. No information has been provided to show how HGV's will service the buildings in terms of where they will stop in order to gain access to these doors.
- The tracking of an HGV exiting the site and onto the new roundabout access junction shows that the vehicles will accommodate much of the carriageway through the bend leading to the roundabout. This has the potential to impact on the ability of other vehicles to utilise the full two lane approach. Has this been taken into account in the VISSIM modelling?

- The turn from the main access spine road through the junction to travel down to Westhorpe Park Homes does not look appropriate. What other vehicles are likely to need to utilise this route? If it is intended for a bus to travel this route to the south and into the existing housing area to provide a bus service, has any consideration been given to the appropriateness of this route for buses?
- There is tracking of a number of internal junctions that shows conflict between vehicles. There are comments on the plans to highlight these areas. The layout should be amended so that it better accommodates the movement of HGV's through these junctions.
- There does not appear to be any tracking associated with the western section of the ground floor of the northern car park. This should be provided.
- In the south car park, the ground floor layout appears to show two spaces adjacent to the Car Park Pavilion area, there has been not tracking submitted to show vehicles accessing these spaces. The position of the spaces directly adjacent to the car park wall could make accessing them difficult so tracking should be provided.
- In the same location it is also noted that the Car Park Pavilion doors open out into the car park area, which will have the potential to conflict with cars manoeuvring within the car park. This should be addressed.
- There remains large areas of the site where no tracking of vehicles has been provided, and it is unclear how it is intended for vehicles to use these areas in terms of servicing the site. Further clarification in this respect should be provided.

These points have been discussed with the applicant and it is understood that the applicant is currently preparing a response. Further comments in relation to the internal site layout will therefore follow the receipt of the applicant's response.

It is evident form the contents of this letter that issues relating to traffic impact, car parking, layout, sustainable travel and connectivity and mitigation remain unresolved and outstanding. As such the Highway Authority cannot conclude at this stage that the development is acceptable, well connected with safe and suitable access and would not lead to an unacceptable impact on road safety and network operation. The Highway Authority would welcome the submission of additional information to address the outstanding concerns. However, should the LPA wish to determine this application as submitted then the Highway Authority would recommend refusal of planning permission for reasons that can be advised.

I trust that these comments have been of some assistance.

Yours sincerely

Tim Thurley

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

29th September 2023

F.A.O. John Fannon

Dear John

Application Number:	**22/06443/FULEA**
Proposal:	**Full planning permission for production space and supporting buildings for screen-based media and associated services/industries – Supplementary Transport Assessment Comments.**
Location:	**Land Adjacent South Side Marlow Road and A404 Junction Westhorpe Park Little Marlow Buckinghamshire**

The Highway Authority (HA) has provided a number of previous consultation responses in relation to this application, the latest being in a letter dated 11th August 2023 that responded to information contained within the second Transport Assessment Addendum (TAA2). The applicant has now submitted a Supplementary Transport Assessment (STA) that seeks to deal with the issues that were not fully covered within TAA2.

To confirm, the issues that were considered to be outstanding following the review of the TAA2 documents related to traffic impact, car parking, layout, sustainable travel, connectivity and mitigation. The information contained within the STA documents seeks to deal with some of these issues and I will therefore provide comments on that information below.

Paragraph 1.3 of the STA confirms that the document updates and provides additional information with respect to transport and presents the outputs of additional technical work and supplementary traffic modelling in support of the development proposals. Conformation of what the STA provides is as follows:

- Additional information to support the internal layout design.
- An updated Travel Plan.
- Updates to the proposed improvements for pedestrians and cyclists including the completed WCHAR assessment.
- An explanation of how offsite on-street parking will be monitored and the measures taken if there is an increase in on-street parking associated with the proposed development.
- An update on 2023 traffic surveys undertaken.
- Presentation of the updated modelling of the site access and proposed improvements to the Westhorpe Interchange using the approved VISSIM model.
- Details of the modelling of the identified junctions on the wider highway network in Marlow and Bourne End, and on the A404 (M40 Junction 4 Handy Cross, Bisham Roundabout).
- Details of the assessment of identified areas on the wider highway network.

I will now provide comments on the specific detail contained within the STA and I will include these under the same headings used in the document for ease of reference.

Internal Layout

The internal layout has been previously discussed with the applicant and comments relating to the latest site layout, included in TAA2, and the associated tracking provided are in included in my response to TAA2. In that previous response I raised a number of concerns relating to the tracking of vehicles through the site and how vehicle movements within the site would be managed.

In paragraph 1.11 of the STA the applicant has confirmed the following:

> "*The position with respect to the internal layout of the Site, as set out in Section 1 of TAA2, remains current and is materially unchanged. This STA does not therefore seek to replicate that information other than to reiterate that the internal layout of the site will remain within the private ownership and control of the Applicant*."

The HA has previously confirmed its position in relation to the site remaining in private ownership and still considered that the site layout should be safe and suitable. This is supported by paragraph 130 of the NPPF, which states the following:

> 130. Planning policies and decisions should ensure that developments:
>
> a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;
>
> b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
>
> c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);
>
> d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;
>
> e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and
>
> f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users[49]; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.

As the applicant has confirmed that the internal details submitted have not materially changed when compared to the details submitted as part of TAA2, the HA's comments given in the response to TAA2 remain applicable.

The applicant has provided some additional information on a few of the points raised. The main comment is that the applicant states that a Site Management Plan will be prepared to outline how vehicles are expected to operate whilst on site, including the use of supervised manoeuvres. The HA confirmed that it would expect to see a Site Management Plan to detail how the internal workings of the site will operate, however one is not provided as part of this application. As this is a detailed application, the HA and LPA should have the opportunity to consider this information to ensure that adequate detail is provided and the proposed operation of the site is safe and suitable. Without this information the HA is not in a position to confirm that this is the case.

In paragraph 1.13 of the STA the application refers to comments that they have received from the HA, which were given during a meeting following an initial review of the vehicle tracking details submitted with TAA2. I would just like to cover a few of these points here.

Firstly, the applicant refers to comments made in relation to the ground floor of the western section of the northern car park. The response to TAA2 highlighted that no tracking had been provided for this section of the northern car park, and the applicant has confirmed that this part of the car park is for the electrical substation and a flexible space, therefore it does not accommodate vehicle parking. However, the details of the plan submitted for this part of the car park, shown on drawing number 60654980-ACM-XX-XX-SK-HW-000055, would suggest that vehicles would at least pass through the car park. Details have not been provided to show how this would occur.

Another comment the applicant has responded to relates to the tracking provided for the ground floor of the southern car park. The previous plans submitted did not show how the two spaces adjacent to the Car Park Pavilion would be accessed, with the drawing also showing that the Pavilion door opened outwards into the car park. The latest version of plan number 60654980-ACM-XX-XX-SK-HW-000055 Rev P03, shows the door that did open into the car park removed. The plan also provides tracking of vehicles accessing the places adjacent to the Pavilion, however the tracking of the standard parking space in this location appears to show the vehicle only being able to park right up against the southern edge of the parking space, resulting in possible difficulties for people to utilise the doors on whichever side of the car is located on that side of the parking space. It is evident that this part of the car park may require further adjustment.

One further point raised in the HA comments for TAA2 related to the tracking of an HGV exiting the site and onto the new roundabout access junction which showed that an HGV would accommodate much of the carriageway through the bend leading to the roundabout, which would have the potential to impact on the ability of other vehicles to utilise the full two lane approach. There was concern that this had not been taken into account in the VISSIM modelling as the modelling appeared to include vehicles as PCU's rather than showing cars and HGV's as different size vehicles. It is evident in the latest submissions that the applicant has now revised the modelling to show cars and HGV's as different vehicles, thereby taking into account the different impact that a larger HGV may have on the network.

When taking the above comments into account it is evident that sufficient detail has not been submitted at this stage to allow the HA to determine that the internal site layout is safe and suitable.

Sustainable Travel Strategy

Travel Plan

It is confirmed within the STA that the Travel Plan submitted in May 22 as part of the original application information has been updated to reflect ongoing consultation with the Highway Authority and refinement of the Sustainable Transport Strategy (STS) for the site. The updated TP has been sent to Travel Planning colleagues in the Council for comment they have provided their response, which is appended to this letter.

The comments conclude that the Travel Plan is well thought out with some good detail, however it is evident that there are a number of amendments and additional information requested in the review which are important to ensure that the Travel Plan is effective.

Public Transport

The bus service improvement information contained within the STA is consistent with that previously included within TAA2. The submitted information has been considered by the Council's Public Transport section and they have provided comments, which I will summarise below:

- *"*In principle, the suggested service provision on the main Marlow-High Wycombe service would provide a good level of connectivity to and from the site. This links to High Wycombe town centre, High Wycombe Coachway (where it can meet coaches from Oxford, Heathrow, Gatwick and Central London) and Maidenhead. The applicant should have considered whether the addition of a stop at High Wycombe railway station would be worth providing. The indicative timetable would appear to allow time for this.

- There are concerns that the running time of 35-minutes between High Wycombe and Maidenhead is somewhat optimistic, in particular the running time between High Wycombe and Marlow.

- Where the service will specifically stop is to be determined, but it is assumed from the information provided that this will be limited stop. The submitted information does not provide detail on the nature of the technology and decision making that will dictate the variable routing between Marlow and Maidenhead. There is insufficient information in order to confirm whether the service will be delivered directly by the development in conjunction with an operator rather than through contribution to the Council and the time period for this commitment. The inference is that this will be provided in perpetuity.

- It is not evident that synergies with the existing bus market have been explored to avoid duplicating resource.

- Similarly the provision of a local route within Marlow and Bourne End is to be welcomed, however it is unclear from the information submitted as to whether this can, in time, replace the existing Marlow town bus service.

It is evident form the comments above that, based on the information submitted to date, the Council's Public Transport Section have raised a number of issues that are not addressed in the information submitted and therefore they cannot confirm that they are satisfied with the public transport improvements being proposed as part of this application.

Operational Management Plan

The STA includes a proposal by the applicant to provide a Operational Management Plan which will set out how the "Managed" traffic assessment undertaken in the transport work submitted to date will be achieved through operational management. There does not appear to be any detail of this Plan and I am not aware of the detail being provided previously. At this stage I am therefore unable to comment on the measures that the applicant intends to include and their potential effectiveness.

Active Travel Strategy

I have previously provided comments on the Active Travel Strategy proposed by the applicants in my responses to the original TA, the TAA and the TAA2. My comments in relation to TAA2 detailed my considerations of the Pedestrian and Cycle Audit previously carried out by the applicant. It is evident from my previous comments that the Audit carried out by the applicant lacked the detail necessary in order to the Highway Authority (HA) to determine that the proposed pedestrian and cycle routes were adequate and provided safe and suitable links between the site and the surrounding residential areas.

The applicant has therefore carried out a further assessment of the pedestrian and cycle routes called a 'Walking Cycling and Horse-Riding Assessment and Review' (WCHAR), in accordance with the requirements set out in the Design Manual for Roads and Bridges document GG 142.

The WCHAR assessment has been reviewed and comments detailing the HA's considerations are included below. The full WCHAR assessment is included in Appendix E of the STA.

Comments on WCHAR Assessment

As per the requirements of the GG 142 document, collision data needs to be investigated as part of assessment and this should include a review of personal collision data for the latest available period and a minimum of three years needs to be studied to identify any collision cluster sites and trends that can influence or impact the highway scheme.

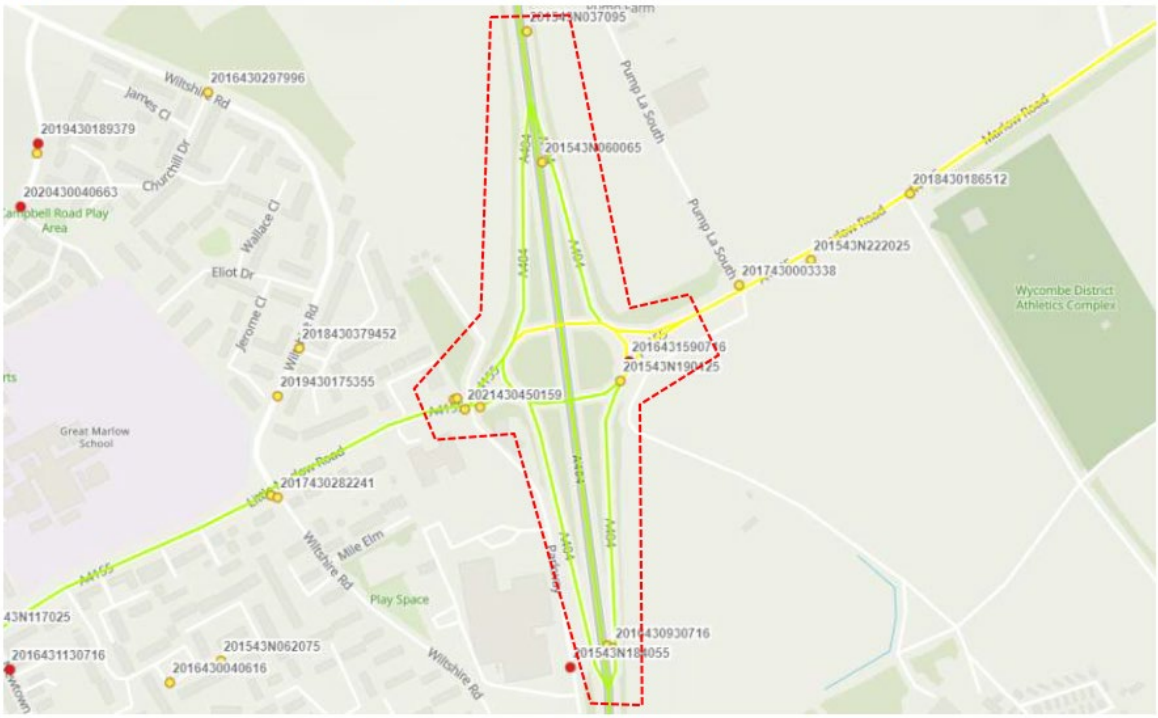
The applicant has used Crashmap to review the data for the last five years and has stated that their analysis showed that there were only 22 collisions in the identified study area that resulted in 17 slight injuries and five serious injuries. Five of these collisions however involved cyclists.

Paragraph 2.6 of the WCHAR assessment states:

> *"It should be noted that at the request of NH / BC, a further investigation into collision data has been undertaken and is provided separately to this audit to support the application".*

The applicant has carried out an assessment of PIC data for the three main junctions on the Strategic Road Network in the 'Briefing Note: Strategic Road Network (SRN) Junctions – Personal Injury Accident Analysis' document in Appendix M of the STA and this includes the Westhorpe Interchange. The study period covered is from January 2015 to December 2021 with the study area confirmed in Figure 3 on page 5 of the Briefing Note, included below for confirmation.

Figure 3: Westhorpe Interchange – Study Area



During the seven year period 10 PIA's were noted at the junction of which nine were categorised as slight and one serious. The serious collision occurred in 2016 and was a shunt type collision.

The review of collision data does not appear to demonstrate that there is any serious collision cluster in the last five years in the vicinity of the site or the Westhorpe Interchange.

Multimodal Transport Services and Interchange Information

The WCHAR assessment states that the nearest existing bus stops are located around 430 metres east of the Site access on the A4155 Marlow Road at Winchbottom Lane. However, it is understood that these stops are served by infrequent bus services only. The nearest stops with regular services are located 700m from the site at Wiltshire Road. These stops are served by the Arriva Buses 800/850 route between High Wycombe, Marlow, Henley, and Reading which operates on a weekday 20-minute frequency, Saturdays at a 30-minute frequency, and Sundays at an hourly frequency.

The CIHT 'Buses in Urban Developments' (2018) provides guidance on the recommended maximum walking distance to bus stops. The guidance recommends that for '*core bus corridors with two or more high-frequency services*' the maximum recommended distance is 500m and for '*less frequent routes*' the maximum recommended distance is 300m.

It is to be noted that both these bus stops fall outside the desired walking range and have been measured from the proposed site access. Although not mentioned in the WCHAR assessment, the HA is aware that a new bus interchange is proposed as part of the proposed development, which is to be located at the Entrance Square. The proposed bus interchange will result in bus stops serving the site that are within a reasonable walking distance of the majority of the site.

Marlow Railway Station is located 1.8km from the site. Four routes have been investigated for cyclists but other than the plans showing the improvements on Westhorpe Interchange junction seeking to make the route attractive for cyclists, the proposals for all three remaining routes appear to have been identified as opportunities that can be implemented either in the medium term or by the applicant providing financial contributions for the Council to carry out improvements. The applicant has not defined a time period for the 'medium term', therefore it is not known if and when these proposals identified as 'opportunities' could be delivered. The HA would also require the applicant to carry out any highway works to deliver any identified opportunities rather than the applicant providing a contribution, due to the risk involved to the Council.

Bourne End station is approx. 3.8km from the site access. However, no information has been provided in terms of the attractiveness of the existing route for cyclists traveling between the site and Bourne End station. It is to be noted that this is an important interchange as people from Marlow will have to change train here if they want to travel to Maidenhead and further afield as the Marlow line is a single track line operating only between Marlow and Maidenhead.

Additionally, at the heart of the National Planning Policy Framework is a presumption in favour of sustainable development (paragraph 11). The NPPF states that decisions should take account of whether opportunities for sustainable transport modes have been taken up and whether safe and suitable access to the site can be achieved for all people (paragraph 110). Developments should also be located and designed where practical to give priority to pedestrian and cycle movements, and have access to high quality public transport facilities (paragraph 112)

In summary, the proposed development is not providing adequate improvements in order to exploit opportunities for the use of sustainable transport modes. The site is reliant primarily on the pedestrian/cycle route via Westhorpe, the improvements to which are yet to be agreed with NH and confirmed to be deliverable. Even if it were deliverable, the lack of certainty that additional routes for all users to ensure the site is permeable and well connected given its size call in to question the sustainability of the site and the prospects of it being able to meet its mode shift aspirations.

Trip Generators

GG 142 Walking, cycling and horse-riding assessment and review guidelines require key trip generators and local amenities to be identified to identify key desire lines for pedestrians, cyclists and equestrians and requires assessments to also include future committed development, including any improvements to multi modal transport services, interchanges and facilities. The applicant has carried out this analysis and

has predicted that the highest proportion of trips would route westbound from the site via the Westhorpe Interchange, with the remaining trips routing to Marlow via Volvo footbridge and/or the New Link through Fieldhouse Lane. There are also a proportion of trips that have been forecasted to route towards the east from the site via the A4155.

Para 2.22 of the WCHAR assessment states:

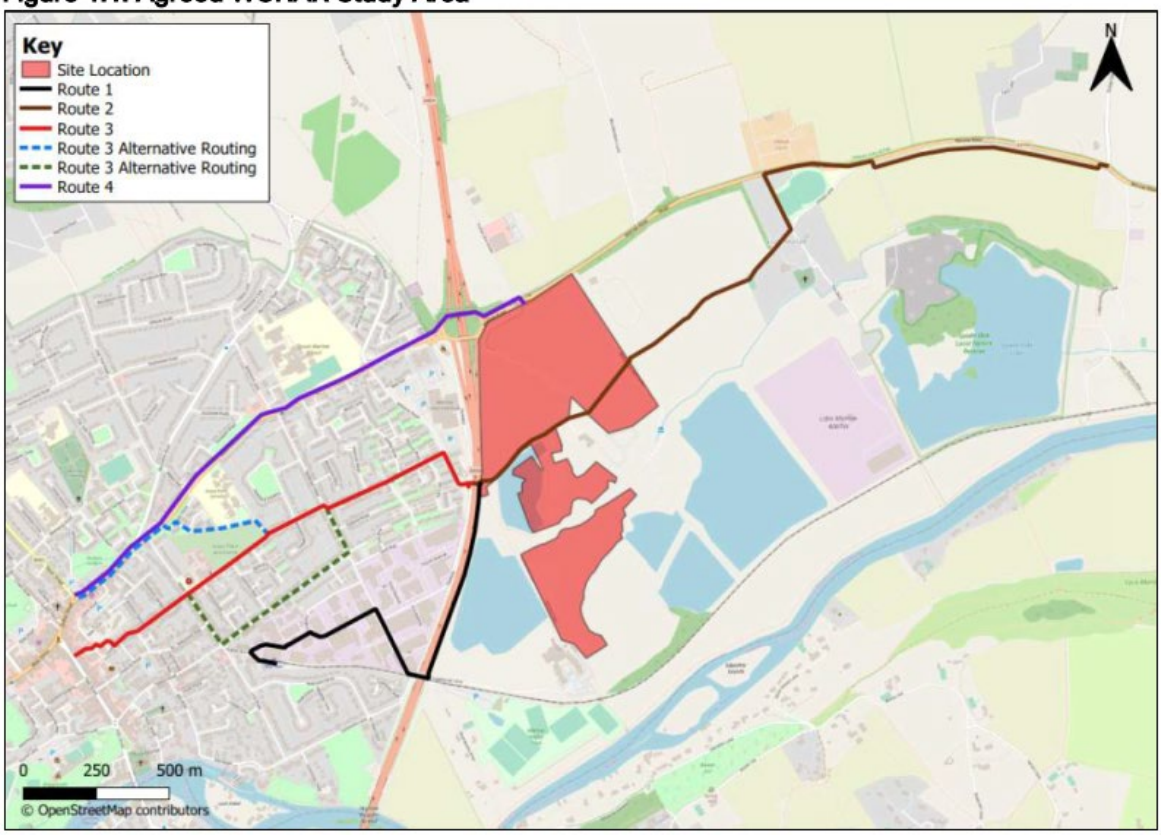
> *"Through the improvements that will be proposed to the west of the site cyclists will either choose to route via Fieldhouse Lane, Volvo Footbridge or via Westhorpe Interchange depending on whether the best facilities and the safest route are provided."*

However, the applicant has acknowledged that any improvements to make a connection to Fieldhouse Lane will require third party land and there is no clarity if and when this land can be secured for this connection to be made in future.

Site Visit

The WCHAR study area, as shown below, was agreed with NH and BC in a meeting dated 20th July 2023.

Figure 1.1: Agreed WCHAR Study Area



There were 4 primary routes identified to investigate existing walking and cycling conditions in order to identify the opportunities for improvements. The study routes are confirmed below;

1. Starting from Marlow Station via Fieldhouse Lane to the site
2. Through application site (PRoW LMA/20/1) via Pound Lane and Church Lane towards Bourne End
3. A404 Footbridge to Town Centre
4. Westhorpe Interchange and Marlow Road (A4155) to Town Centre

The site visit was conducted on 1st August 2023 and took the form of the assessors walking along the identified pedestrian, cycle and equestrian facilities located within the agreed scoping area of visit.

Paragraph 2.24 of the WCHAR assessment summarises a number of key findings which were concluded from the site visit. These findings are as follows:

- Significant peak period cycle and pedestrian usage of the A4155 within Marlow with sufficient infrastructure to support pedestrian and cyclist movements. This provides a distributor route with connections to wider pedestrian facilities and to Marlow Town Centre.
- The experience of the assessors crossing the Westhorpe Interchange junction was that it was unpleasant and difficult to cross due to high traffic flows. Therefore, improvements would be required to enhance the experience of pedestrians and cyclists using this junction.
- The PROW route through the site was found to be a generally pleasant route with connections to wider pedestrian facilities to the east of the site. However improvements would be required to improve the safety of the route at night for both pedestrians and cyclists. Similar observations can be made for the section of Fieldhouse Lane link adjacent to the A404.
- No evidence of horse riders using the existing network in the vicinity of the site.

Existing Pedestrian, Cyclist and Equestrian Facilities

From Marlow Station and Fieldhouse Lane to the site

Paragraph 2.26 of the WCHAR assessment provides a description of the route, which is as follows:

> "*Starting at Marlow station, the route heads onto Station Approach, before turning right onto Fieldhouse Way, which leads to Globe Business Park. Pedestrians then continue along Fieldhouse Way, passing Chives Café, and turn right onto Fieldhouse Lane until reaching the end of the Business Park at the T-junction. Pedestrians then turn right onto Fieldhouse Lane, continuing south underneath the A404 bridge. Upon passing beneath the bridge, an informal crossing point provides access to a car park, in which pedestrians can access a footpath which continues north to the A404 footbridge"*.

This route has been identified to particularly benefit southern end users of the site, however, the applicant has already confirmed during meetings with the HA and in other documentation submitted with the application that they do not currently have control of sufficient land to provide access to and from the site to the south. While the applicant is not currently able to deliver this route as an access option to the site, for completeness and to assist with any future proposals for this route, the HA will still provide comments on the assessment findings.

The HA has reviewed the comments provided on this route and has the following concerns in relation to this route;

Pedestrian Facilities:

- Reference made to the section of Station Road measuring 42m in length, but no mention of footway width in order to determine whether it is adequate or not.
- Absence of dropped kerbs connecting Station Road to Fieldhouse Lane which can be problem for people with mobility or sight impairments.
- Reference Station Approach where pedestrians were observed utilising the space on the carriageway as a shared surface space. However, while reference is made to it being lightly trafficked during the survey period, the route appears to be subject to on-street parking associated with the dwellings and this could lead to issues to pedestrians utilising this route as a shared surface. No reference is made to the adequacy of the existing

footway width. It maybe that pedestrians were observed using the carriageway because the footways are inadequate.

- The footway on Fieldhouse Way's southern side providing a connection to Station Road measures 1.5m in width, which is below the requirement of 2m stated in Manual for Streets (MfS). However it has been argued that as per the Inclusive mobility guidelines the minimum width of 1.5m can be regarded as acceptable under most circumstances.
- There is a gap between the connectivity of footways within Globe Business Park with no provision of formal crossing points between the connections. However it has been argued that since Globe Business Park is subject to a 15mph speed limit this should be acceptable and give pedestrians ample of time to cross. With no formal crossing facility (dropped tactile crossing) it is not clear how all pedestrians, including those with mobility and sight issues, are supposed to utilise this route.
- Para 2.35 has already identified that there is no clear route for pedestrians to navigate through Globe Business Park to continue to Fieldhouse Lane which can create confusion for the users. It should be noted that the route through the Globe Business Park is private and does not form part of the adopted public highway. It is not therefore clear how the applicant would guarantee this route is available to access the site. As present it is not considered it can be relied upon to provide access to the application site.
- It has been mentioned that there is a potential to discuss the feasibility of signage in the form of finger posts with the Globe Business Park owners but there is no confirmation from the applicants that this action would be carried out as part of overall site improvements.
- It has been further identified that the pedestrians will be required to navigate car park access junctions where dropped kerbs have not been provided consistently across the approaches. However, it has been argued that this should not cause concern as the speed limits are restricted to 15mph. The HA does not agree with this approach as this is still a safety concern especially for people with mobility issues and equally for visually impaired people.
- The route through the Globe Business Park comes out onto Fieldhouse Lane. The footway width measured on Fieldhouse Lane is also 1.5m but a similar argument has been provided for it meeting the standards in the Inclusive Mobility guidance, consistent with the argument for Fieldhouse Way. However, the environment along Fieldhouse Lane is different as in this location Fieldhouse Lane provides access to a number of industrial units so is more highly trafficked than Fieldhouse Way. Requiring pedestrians to step into the carriageway of Fieldhouse Lane to pass, which may give rise to safety issues due to the restricted footway width, is far from ideal. The applicant should consider this further.
- It has been noted that the footway width reduces further underneath the A404 bridge with a pinch point of 1.42m, which will ultimately lead pedestrians to step out on carriageway. This has been recognised as a safety risk by the applicant and therefore requires addressing.
- Coming out from underneath the footbridge it has been recognised that the visibility can be an issue for both pedestrians and cyclists wanting to cross and join the latter section of the route adjacent to the A404.
- The latter section of the route is mainly rural in nature and despite being sufficient in width lacks in basic infrastructure to make it usable and safe for all users who would want to access this route. As it stands, this section of the route would require improvements. A photo is included below for reference;

Cycling Facilities

- The route for cyclists mirrors that for pedestrians.
- It is noted that no off-carriageway facilities are provided for cyclists along this route. There are no on-carriageway facilities for cyclists either that could make it a safe environment for cycling.
- As a potential improvement for cyclists it has been identified that a one-way narrowing could be introduced in the vicinity of the bridge on Fieldhouse Lane to slow the traffic and provide a segregated facility for pedestrians and cyclists.
- However it appears that this has been stated just as an option with no confirmation as to whether this improvement would be carried out or not.

In summary;

- No comments have been made in terms of the attractiveness of the route.
- No technical information has been provided for improving the footway width beneath the A404 bridge or how any one-way narrowing will be carried out to segregate vehicle route from pedestrians/cyclists.
- There is no guarantee that the third party land passing through the car park to link this route to the site can be secured.
- Part of the highlighted route passes through the Globe Business Park, which is a private development. There is no information on how it will be ensured that the pedestrians/cyclists associated with the site can use this section of route which is a private area and does not form part of the public highway.
- It has been stated as an option that signage along the route maybe required to guide pedestrians/cyclists. However, no details have been further provided about what signage might be used and where it would be located. It is also not clear how the applicant would provide signage on the private land within the Globe Business Park.
- It is stated that the applicant is committed to upgrading the section of the route adjacent to the A404 in order that it is suitable for both pedestrian and cyclist use in line with LTN1/20, however no details of these improvements have been provided to allow the Council to Condition them as part of any permission.

Through Application Site (PROW LMA/20/1)

Paragraph 2.51 of the WCHAR assessment gives the following description of this route:

> *"This route begins at the A404 footbridge and continues along a public footpath in a north-eastern direction. Pedestrians / cyclists will cross Pump Lane Street near Westhorpe House before continuing along the footpath to Westhorpe Farm Lane, crossing Westhorpe Farm Lane and continuing on the PROW. Pedestrians will then reach Pound Lane, before routing northbound on Church Road, adjoining Marlow Road (A4155). Pedestrians will then continue eastbound on the A4155, before adjoining back onto client land separated from the carriageway, and finally route back onto the highway at the Marlow Road / Sheepridge Lane roundabout"*.

It is to be noted that on audit has been carried out for the later section of this route as it is on land not owned by the applicant is currently inaccessible and access is not provided.

Pedestrians Facilities:

- It is stated that the route provided an excellent, pleasurable route along the entirety of its length and would likely be the first choice for pedestrians routing from locations to the east of the site during daylight hours. The statement relating to daylight hours is reflective of the more rural nature of this route, which may not be attractive to users during darker winter months.
- It is noted that the beginning of this route has uneven paving, presenting issues for those with mobility issues. This will need to be addressed by the applicant.
- The footpath comprises of variable widths ranging from 2.9m to in excess of 3.2m. However, there were sections of the route where overgrown and low hanging vegetation might require users to traverse these sections in single file and therefore can be a problem for cyclists as well as users with mobility issues. The vegetation present also provides screening of the route which may present security issues for pedestrians and cyclists using the route.
- No lighting is present on the route.
- The route lacks adequate sign postage to direct the users for the entire length of the route.
- Upon reaching Pound Lane and further north from Church Road, pedestrians will be required to walk on the carriageway which results in them having to negotiate circa 100m of carriageway on Pound Lane and 200m of carriageway on Church Road. This could pose a risk to safety for pedestrians and cyclists in darker winter months.
- It is to be noted that there are parked vehicles in certain sections on Church Road as seen in the Photo below. There is a high likelihood that this can cause a safety concern especially for the users of mobility vehicles and visually impaired people as this route provides a more direct and shorter connection to the A4155.

Cyclists

- The comments raised in relation to pedestrians are also mirrored for cyclists.
- The low hanging vegetation will pose an issue for cyclists, along with the sections of the route that are narrow due to overgrown vegetation.
- The surface of the route needs improving so that it is suitable for cyclists.
- It is noted that cyclists would need to carry their bikes over the wooden stile located at the first intersection where the footpath meets Pump Lane Street. This would rely on the cyclist being able to do this and may present an issue for those with accessible bicycles.
- It is noted that the route is currently classified as a PROW for pedestrians only, so the route would need to be reclassified if cyclists are to use it.

In summary

- It is recognised that this PROW is not currently suitable to provide a safe and suitable route to the site, and therefore will require improvements. However, no plans of these improvements have been provided which would allow the Council to secure them as part of any permission.
- It is noted that the applicant states resurfacing of the existing path and the provision of low level lighting will deliver a secure and safe connection at all times. However the HA has concerns over the attractiveness of what is essentially a PROW, which is not overlooked and is remote from built up areas, as a main link to provide safe and suitable access to the site.
- Paragraph 2.69 of the WCHAR assessment states that the cyclists will be required to lift their bikes over a wooden stile located at the first intersection where the footpath meets Pump Lane Street, which may be an issue for those with accessible bikes. Overgrown vegetation will need to be trimmed regularly.
- It has been mentioned in paragraph 2.70 of the WCHAR assessment that the traffic flows are higher on Marlow Road, but the cyclists can use the shared footway/cycleway provided. However, no details about the width of this shared footway/cycleway has been provided. Looking at google earth, it does not appear that the width is sufficient to be used as a shared footway/cycleway.
- The applicants have stated in paragraph 2.72 of the WCHAR assessment that "*It is proposed to provide a new pedestrian and cycle route to the east of the site from Little Marlow to the western edge of Bourne End. This will be a segregated pedestrian/cycle route in line with LTN1/20 to be provided across the field to the south of the A4155 Marlow Road. The exact design of this route is to be agreed with Buckinghamshire Council as the local planning and highway authority.*"
- However there is no clarity on whether this proposal will definitely be carried out or not.

A404 Footbridge to Town Centre

Paragraph 2.73 of the WCHAR assessment gives the following description of this route:

> *"This route starts with pedestrians traversing the A404 footbridge from the site, before exiting onto The Chase and Wiltshire Road. Pedestrians / cyclists, then continue north on Wiltshire Road, before taking a left turning onto Gunthorpe Road. Continuing west on Gunthorpe Road, pedestrians / cyclists then access Westhorpe Road via a dedicated pedestrian and cyclist cut-through, continuing until reaching the T-junction with Newton Road.*
>
> *Following this, pedestrians and cyclists route for approximately 20m north, before routing west onto Newfield Road. Upon reaching the western extent of Newfield Road, pedestrians will utilise the passage adjacent to the allotments, continuing until the path merges onto Victoria Road. Continuing, pedestrians will travel along Claremont Road and subsequently Cromwell Gardens, from which a right turning will take them to a network of small footways that lead to a public realm and ultimately the town centre".*

It should be noted that while the above route description refers to both pedestrians and cyclists, the Volvo Footbridge does not currently cater for cyclists. Therefore any cyclists using this route would be required to push their bike up and down stairs and relies on them being physically able to do this. The route is therefore not attractive or convenient for cyclists.

Pedestrian Facilities

- The width of the Volvo Footbridge is 1.8m but the bridge has no ramps and therefore will be an issue for wheelchair users which has been identified as a concern in the audit.
- No footways are present on Wiltshire Road on either side of the carriageways and therefore pedestrians will be required to walk on the carriageway for this section of the route as seen in the photo below. This can cause serious safety concerns for the users with mobility issues especially with parked cars on both sides of the carriageway which will further narrow down the usable width of the carriageway.

- Footways on Gunthorpe Road have been measured as 1.65m and it has been argued that although they do not meet the required standards of 1.8m-2m, the current width should be acceptable due to the residential nature of the street.

- The section of the route passing through Westhorpe Road has also been identified to not benefit from footway provision. However, it has been argued that due to the street being residential in nature and relatively low traffic this should be acceptable. It is questionable whether this would be consistent with a safe and suitable route for pedestrians and no further information is included to demonstrate that it is.
- The footpath adjacent to Foxes Piece Allotments also varies in width and has been measured as 1.30m at its narrowest point, thereby creating concerns for the users with mobility issues and may require extra space on footpath. It has also previously been highlighted that this route is not well overlooked due to the high hedge along one side, which could result in security issues for users.
- The footway widths on Cromwell Gardens have also been measured at approximately 1.18m wide and are therefore substandard. However the same argument has been provided that due to the street being residential in nature and lightly trafficked, the substandard width should not be regarded as major safety issue. As with Westhorpe Road, further information has not been included to demonstrate that this is a safe and suitable route.

Cycling Facilities

- The width of bridge at 1.8m is insufficient for cyclists as the minimum width requirement is 2m.
- It has also been acknowledged that the bridge parapets might not be sufficient for cyclists as well as the lack of a ramp which will make it difficult for cyclists to access the bridge as they will be required to dismount their bikes and carry it across the bridge.
- Two alternative routes have been proposed for cyclists; one route is via Newton Road, Dedmere Road and Glade Road and the second route is via joining the northern side of the Foxes Piece allotment after turning right at the end of Newton Road and subsequently joining Little Marlow Road.
- Footway widths on Newton Road have been measured as 1.5m while the northern end of Dedmere Road has been measured as 1.8m wide. No further measurements of footway widths have been provided for the remaining section of the route.
- For the section of the route passing through Station Road it has been mentioned in paragraph 2.120 of the WCHAR assessment that the effective width of the carriageway decreases due to the parked cars outside the properties and cyclists might also be required to navigate through parked cars further on Glade Road.

In Summary

- Along with the already identified issues of lack of footways on Wiltshire Road and Westhorpe Road and insufficient widths on a couple of sections of road, it has also been acknowledged that a couple of the junctions are missing tactile paving and that it needs to be provided.
- It has also been mentioned in the audit that the road on this route can benefit from maintenance via some resurfacing in places due to the presence of potholes.
- No plans have been provided to confirm any of the improvements suggested in the audit.
- The section of route that comprises of a footway that passes adjacent to Foxes Piece allotment has insufficient width in certain sections and does not appear to be attractive or safe, especially when being used in dark winter months.
- No detailed assessment has been carried out to judge the attractiveness of the alternative route for cyclists other than stating that the auditors felt that the routes are safe due to the residential nature and light traffic on the streets.

Westhorpe Interchange and Marlow Road to Town Centre

Paragraph 2.129 provides a description of the route, which is as follows:

> *"This route provides a connection from Marlow town centre, routing eastbound via Chapel Street and subsequently onto Little Marlow Road (A4155) eastbound. Pedestrians and cyclists will then continue eastbound before crossing the A404 via Westhorpe Interchange, in order to reach the main site access."*

Pedestrian Facilities

- It is noted that the footway provision and environment in Marlow town centre is suitable to accommodate pedestrians associated with the proposed development.
- The town centre route benefits from street lighting at semi regular intervals which is beneficial during darker winter months.
- A zebra crossing is provided in the town centre with a refuge island and dropped tactile crossings.
- It is noted that as you travel to the north east on the A4155 the footway narrows where it passes Lidl and the assessment states that while pedestrians can walk side by side, it may be difficult for a pedestrian and wheelchair to pass each other comfortably, possibly resulting in a pedestrian having to walk on the carriageway to pass. The width of this section of footway is not given in the assessment.
- The assessment notes that dropped kerbs are provided on the approach to junctions, however it also noted that there were crossings over junctions that did not benefit from tactile paving.
- There are bus stops along the A4155 route that pedestrians wanting to access the site can utilise.
- The assessment highlights the pedestrian crossing located approximately 70m north of the Chapel Street bus stop, which gives pedestrians the opportunity to cross to utilise the footway on the opposite side of the A4155 if required. At this point the shared footway/cycleway also begins adjacent to the south eastern side of the carriageway.
- As pedestrians travel to the north east they need to cross the side road junction at Cedar Court, which the assessment states benefits from a tactile dropped crossing and colour surfacing on the carriageway. The assessment does not however comment on the condition of the coloured surfacing and whether it is still in a condition where it can be effective.
- The assessment notes that beyond this junction the footway widens to 2.45m and then onto 3m as it heads to the north east.
- The assessment has highlighted the dropped tactile crossing across the side road junction with Glade Road, which is shown to benefit from coloured surface across the crossing.
- The crossing point across Foxes Piece is also stated to benefit from the same crossing arrangements as the other two side road junctions, however the assessment makes the comment that both features across Foxes Piece would benefit from maintenance through repainting.
- There is a further crossing facility as the route continues to the north east. At this point the shared footway / cycleway facility changes to the north west side of the carriageway and the assessment notes that there is directional signage on the surface of the route for cyclists that is currently faded and would benefit from maintenance in the form of repainting.
- Further to the north east there is a bus stop on the western side of the carriageway and at this point the shared footway/cycleway separates with the cycleway travelling behind the bus stop.
- Adjacent to the Great Marlow School, located further to the north east, there is a zebra crossing to allow pedestrians to utilise the footway on the opposite side of the carriageway if required. The assessment suggests that this crossing would benefit from maintenance in the form of repainting. It also states that consideration could be given to changing this crossing to a signalised crossing to provide a better facility for pedestrians and cyclists and also to potentially assist with the flow of traffic along the A4155 during peak times.

- The section of footway/cycleway adjacent to the school boundary where there is a strip of vegetation between the footway/cycleway and the carriageway. It is noted that regular street lighting is provided along this section of the route.
- To the north east of the school the route reaches the Wiltshire Road roundabout where dropped tactile crossings are provided for pedestrians and cyclists crossing the roundabout.
- The footway/cycleway facility continues along the north western side of the carriageway with a dropped tactile crossing and coloured surfacing across the Woodside Gardens sideroad junction.
- Further to the north east the route eventually reaches the Westhorpe Roundabout junction. The assessment notes that this section of the route that traverses the Westhorpe Interchange is unfavourable due to the highway traffic flows experienced not allowing much time to allow pedestrians and cyclists to cross the on/off-slips of the A404. This poses an additional issue for pedestrians with reduced mobility.
- The footway across the bridge is stated to measure approximately 2.2m and while this meets the required widths for pedestrians, it is not sufficient for cyclist use. The height of the parapet railings is also not suitable for cyclists.
- The assessment does not make comment on whether there is any buffer between the footway provision across the roundabout and the main circulatory carriageway.
- Once over the interchange, pedestrians would then continue along the A4155 where the footway measures 2m in width.

Cycling Facilities

- Many of the facilities for cyclists have been mentioned in the above text concerning pedestrian routes.
- The route from Marlow town centre along the A4155 does benefit from a shared footway/cycleway facility along much of its length.
- The assessment mentions the side road crossings that it has already identified as requiring maintenance in the form of repainting to increase cyclist awareness and awareness to drivers.
- The assessment mainly highlights the “likely unpleasant” environment across the Westhorpe Interchange where cyclists would compromise their safety navigating the junction due to high traffic flows (which will increase as a result of the development) and uncontrolled crossing points.
- The footway and parapet across the bridge are also inadequate to provide a safe and suitable route for cyclists.

In Summary

- The route between the town centre and the Westhorpe roundabout is generally appropriate for pedestrians and cyclists noting that we are looking at an existing network with existing constraints.
- The HA has previously highlighted possible improvements along this route which could include the upgrading of the side road junction crossings to provide LTN1/20 compliant crossing points.
- It is evident that there are significant safety issues relating to the movement of pedestrians and cyclists across the Westhorpe Interchange and if the applicant is to achieve their ambitious mode share targets, this route will need to be significantly improved to provide and safe, suitable and attractive route to and from the site.
- Any improvements across the Westhorpe Interchange, in terms of signalised crossing facilities and changes to footway widths are likely to have an impact on the operation of the junction which needs to be fully taken into account.
- It is also noted that this is a junction that falls under the control of National Highways so they will have the final say on the acceptability of any improvements proposed.

User Opportunities

Section 3 of the WCHAR assessment looks at User Opportunities which the applicant considers to be relevant to the proposed scheme and it states they should be considered by the wider design team throughout the progression of the development. The extract below includes the pedestrian specific user opportunities that have been identified.

Pedestrian Specific

- Opportunity 1: Seek agreement for signposting within the vicinity of Globe Business Park to improve routing for pedestrians for the Marlow Station via Fieldhouse Lane route.
- Opportunity 2: Improvement to the Marlow Station via Fieldhouse Lane route through the widening of the footway beneath the A404 bridge, to improve safety for pedestrians.
- Opportunity 3: Improvement to the Fieldhouse Lane track adjacent to the A404 through the resurfacing of the track and provision of lighting to improve pedestrian access and safety.
- Opportunity 4: Improvement of the existing PRoW Footpath LMA/20/1, to enhance the footpath by increasing the width of the path to improve access for pedestrians from all walks of life, resurfacing the existing path to improve mobility, and provision of low level lighting.
- Opportunity 5: Improvement to the route to the east of the site by providing a connection to Bourne End, through the provision of a segregated footpath/cycleway through land in the control of the client which would be separated from the Marlow Road (A4155) from School Lane, Little Marlow to the Marlow Road (A4155) / Sheepridge Lane roundabout.
- Opportunity 6: Improvement to the pedestrian zebra crossing on Marlow Road (A4155) adjacent to Bobmore Lane through the signalisation of the crossing to cater for pedestrians and cyclists.
- Opportunity 7: Improvement through signalised pedestrian crossings at the Westhorpe Interchange for both the A404 On and Off Slips, on the northern arm of the junction.
- Opportunity 8: Seeking to improve the Marlow Road (A4155) northern footway from Westhorpe Interchange to the Site Access through widening where possible in public highway land.
- Opportunity 9: Ensuring tactile paving is proposed as appropriate at all road crossings.

It is noted that there is no opportunity identified to improve the crossings on the side road junctions on the A4155 route to be consistent with the requirements set out in LTN1/20. It is also difficult to determine whether all opportunities have been identified as the assessment lacks detail of widths of footway provision in places, so possible requirements to widen sections of footway may have been missed.

The extract below contains the cyclist specific user opportunities that have been identified.

Cyclist Specific

- Opportunity 1: Potential improvement to the Marlow Station via Fieldhouse Lane route to improve visibility for cyclists through one way narrowing beneath the A404 bridge.
- Opportunity 2: Potential improvement to the Fieldhouse Lane track adjacent to the A404 through the resurfacing of the track and provision of lighting to improve cyclist access and safety.
- Opportunity 3: Improvement of the existing PRoW Footpath LMA/20/1, to enhance the footpath by increasing the width of the path to allow cyclists access, resurfacing the existing path to improve the route for cyclists and provision of lighting.
- Opportunity 4: Potential improvement to the Volvo Footbridge through the implementation of ramps to allow for cyclist access and the increase of the parapet height on the bridge to 1.4m, improving cyclist safety.
- Opportunity 5: Improvement to the bridge parapet height to 1.4m to allow for improved cyclist safety across Westhorpe Interchange.
- Opportunity 6: Improvement to the route to the east of the site by providing a connection to Bourne End, through the provision of a segregated footpath/cycleway through land in the control of the client which would be separated from the Marlow Road (A4155) from School Lane, Little Marlow to the Marlow Road (A4155) / Sheepridge Lane roundabout.

As with the identified pedestrian opportunities, there is no mention of improvements to the side road junction crossings to make them LTN1/20 compliant. Also consistent with the pedestrian opportunities, it is difficult to determine whether all opportunities have been identified. For instance, in places where it is proposed that cyclists use on-carriageways routes instead of off-carriageway routes, would there be anything that could be done to better alert drivers to the presence of cyclists on the carriageway.

The WCHAR assessment also includes the two plans showing the changes proposed to the Westhorpe Interchange. It should again be noted that these changes will need to be considered by National Highways who will confirm whether or not they are acceptable in terms of safety, capacity impacts on the operation of the junction and also DMRB requirements. At this stage the improvements have not been confirmed as acceptable and deliverable.

Proposed Improvements

Following the work carried out to date and the information contained within the WCHAR assessment, the applicant has prepared a summary of the walking and cycling improvements that are intended to be associated with the proposed development. These improvements are detailed in paragraph 2.21 of the STA and are as follows:

Onsite

- The retention and enhancement of the existing PROWs that cross the site through improved surfacing and lighting.
- The provision of new routes to allow pedestrians and cyclists to move around the site.

Site Access

- The provision of a roundabout on Marlow Road (A4155) retaining access for residents of Westhorpe House, Westhorpe Park Homes, and provide access to Pump Lane South including the provision of a signal-controlled crossing on the eastern arm of the new roundabout (A4155

Marlow Road) and uncontrolled pedestrian and cycle crossings on the remaining arms (Pump Lane South and the site access).

It should be noted that following the HA's review of the traffic modelling of the site access, it is yet to be convinced that the proposed roundabout provides an appropriate access arrangement for the proposed development.

Connections to the East

- The provision of a new connection to Bourne End, through the provision of a segregated footpath/cycleway through land in control of the applicant which would be separated from the Marlow Road (A4155) from School Lane, Little Marlow to the Marlow Road (A4155) / Sheepridge Lane Lane roundabout.

Connections to the West

- Partial Signal Control at Westhorpe Interchange (A404 Northbound On and Southbound Off Slip and the A4155 westbound approach)
    - Signal controlled crossing of the A404 northbound onslip;
    - Signal controlled crossing of the A404 southbound offslip;
    - Widening of the pedestrian/cycle route across the junction to 3m with a 300m buffer strip;
    - Increasing the height of the bridge parapet to 1.5m;
    - Provision of improvements to the existing pedestrian and cycle route between the site and Westhorpe Interchange.

As stated in the comments relating to the WCHAR assessment, the proposed alterations to the Westhorpe Interchange will be subject to assessment by National Highways in terms of safety, capacity and compliance with the Design Manual for Roads and Bridge. Initial discussions with National Highways has highlighted that they have not yet finalised their assessment of the junction changes and are not therefore in a position to determine the acceptability or deliverability of the proposed changes.

While National Highways are not able to confirm that the proposed changes to the Westhorpe Interchange are acceptable, it brings into doubt the applicants ability to deliver a safe and suitable walking and cycling route between the site and Marlow via the Westhorpe Interchange. Without the link across the Westhorpe Interchange the HA considers that the site would not be well connected in terms of sustainable forms of transport and therefore unlikely to achieve the mode share targets that are contained with their STS.

There is no mention in the improvements listed above or any improvements off site within Marlow to further aid the safe and convenient movement of pedestrians and cyclists and to encourage walking and cycling as a form of transport to and from the site. For a development of this scale, and one with mode share targets that push towards the use of sustainable forms of traffic to a higher level than would normally be expected, the HA would expect further off-site improvements to aid walking and cycling.

It is also evident from the improvements listed above that the applicant is proposing the connection across the Westhorpe Interchange as the only improvement to walking and cycling connections to the west into Marlow. The HA considers that in order achieve a site that is well connected to the local area by walking and cycling the applicant should be providing a number of route choices to make accessing different areas within Marlow as convenient as possible. At present the only cycle link is proposed to be via the main site access to the north of the site if indeed that is deliverable. If someone wanted to cycle from the southern end of the site to a location towards the southern end of Marlow, the route they would be required to take would be through the site to the north then out the site, across the Westhorpe Interchange, and back down through Marlow to the south. The distance of such a route and the time taken to travel it would be greatly reduced if a further access option for cyclists was provided for toward the centre (or south) of the site. However, based on the information provided at this stage, the applicant is not proposing to deliver such an access option.

Paragraph 2.22 of the STA states that in addition to the improvements that the applicant has listed, there are a number of ways in which the footbridge could be improved to cater for pedestrians and cyclists, which would range from replacing the existing steps and ramps to make them DDA compliant.

Paragraph 2.23 states the following in relation to any improvements that may be required to the Volvo footbridge:

> "*If the monitoring to be undertaken as part of the MSIS shows that additional improvements are needed to achieve the specific targets for pedestrians and cyclists to/from the Site, the approaches to the Volvo Footbridge will be improved to provide DDA compliant ramps and stairs. This will both improve this route for pedestrians and make it available for cyclists. The mechanism for this monitoring will be set out in the S106 Agreement associated with the proposed development*."

It is therefore evident that improvements to the Volvo footbridge are not to be implemented from the outset and would only be provided at a later stage should the monitoring proposed by the applicant show that improvements are necessary. The HA does not agree with the principle of this approach. Improvements to provide a choice of safe, suitable and attractive walking and cycling routes to the site should be in place before the site is occupied in order that they can help influence peoples travel choice from the outset. This would give the best chance of convincing people to walk or cycle rather than use a private car. Not providing adequate links from the outset and then waiting for mode share targets not to be met before making improvements may mean that it is too late to then influence people to change their travel choice and in turn be too late to address any issues that may have arisen from the mode share targets not being met. It has also not been successfully demonstrated at this stage that any such improvements to the Volvo footbridge are acceptable to National Highways and deliverable on the available land.

In relation to the potential for a link to the south of the site to Fieldhouse Lane, paragraph 2.26 of the STA states the following:

> "*A pedestrian and cycle link to Fieldhouse Lane is not proposed in association with the proposed development. The achievement of this route is within the control of BC, but not the applicant as there is third party land at the southern end of the link. BC could achieve the link through progressing the submitted Definitive Map Modification Order (DMMO) application. There will also be opportunities for achieving this link when a further planning application is submitted for the third-party land. This land having previously been the subject of a refused planning application and then a second planning application that was withdrawn*."

Paragraph 2.27 of the STA then goes onto state:

> "*There is a reasonable chance that a link to Fieldhouse Lane will be achieved in the near future for pedestrians and cyclists*."

It is evident from paragraph 2.26 that a link to Fieldhouse Lane cannot be achieved and is not going to be delivered as part of this planning application. A link to Fieldhouse Lane cannot there be taken into account by the HA as something that will contribute to the connectivity of the site to surrounding walking and cycling facilities.

Paragraph 2.28 of the STA states that the applicant will make a financial contribution towards the implementation of the other elements of the opportunities identified in the WCHAR assessment, which includes the provision of tactile paving and dropped kerbs and signage and the conversion of the zebra crossing on Marlow Road adjacent to Bobmore Lane to a Toucan Crossing. Paragraph 2.29 also goes onto state that there are also minor improvements that potentially could be made on the routes between the A404 and Marlow town centre which include directional fingerposts and tactile paving at all crossing points.

The HA has previously advised the applicant that in order for any improvements to be considered and secured as part of the planning application, details would be required to demonstrate what improvements are being proposed and where they are going to be implemented. At present the improvements proposed by the applicant are uncertain in terms of details, therefore it is difficult for the HA to make a judgement on their likely effectiveness. The HA has also previously advised the applicant on the need for side road junction crossings to be LTN1/20 compliant, however the applicant is only referring to tactile crossings being provided, which is not sufficient. Finally, the applicant has previously been advised that once any improvement works have been identified and secured, they will need to be delivered by the applicant as part of an off-site highway works package, however the applicant is only referring to making contributions for the Council to deliver the works, which is not acceptable to the Council.

In summary, the applicant appears to be offering a route into Marlow via the Westhorpe Interchange as the only walking and cycling route that is aimed at catering for walking and cycling for both able bodied people and people with mobility impairments and the deliverability of necessary improvements to this route is currently uncertain. The only other link to the west is via the Volvo footbridge and this is only useable by able bodied pedestrians and will not be an attractive or convenient route for people with mobility impairments or cyclists. It is therefore considered that as the site does not offer a choice of multiple safe and suitable pedestrian and cycle routes to allow people to access the site, the site is not therefore considered to be well connected to Marlow and does not promote the use of sustainable forms of transport, contrary to local and national policy.

Notwithstanding the comments relating to the choice and suitability of routes, there is also uncertainty as to whether the route for pedestrians and cyclists across the Westhorpe junction will be acceptable to National Highways and therefore at present the HA is not in a position to confirm the acceptability of this route.

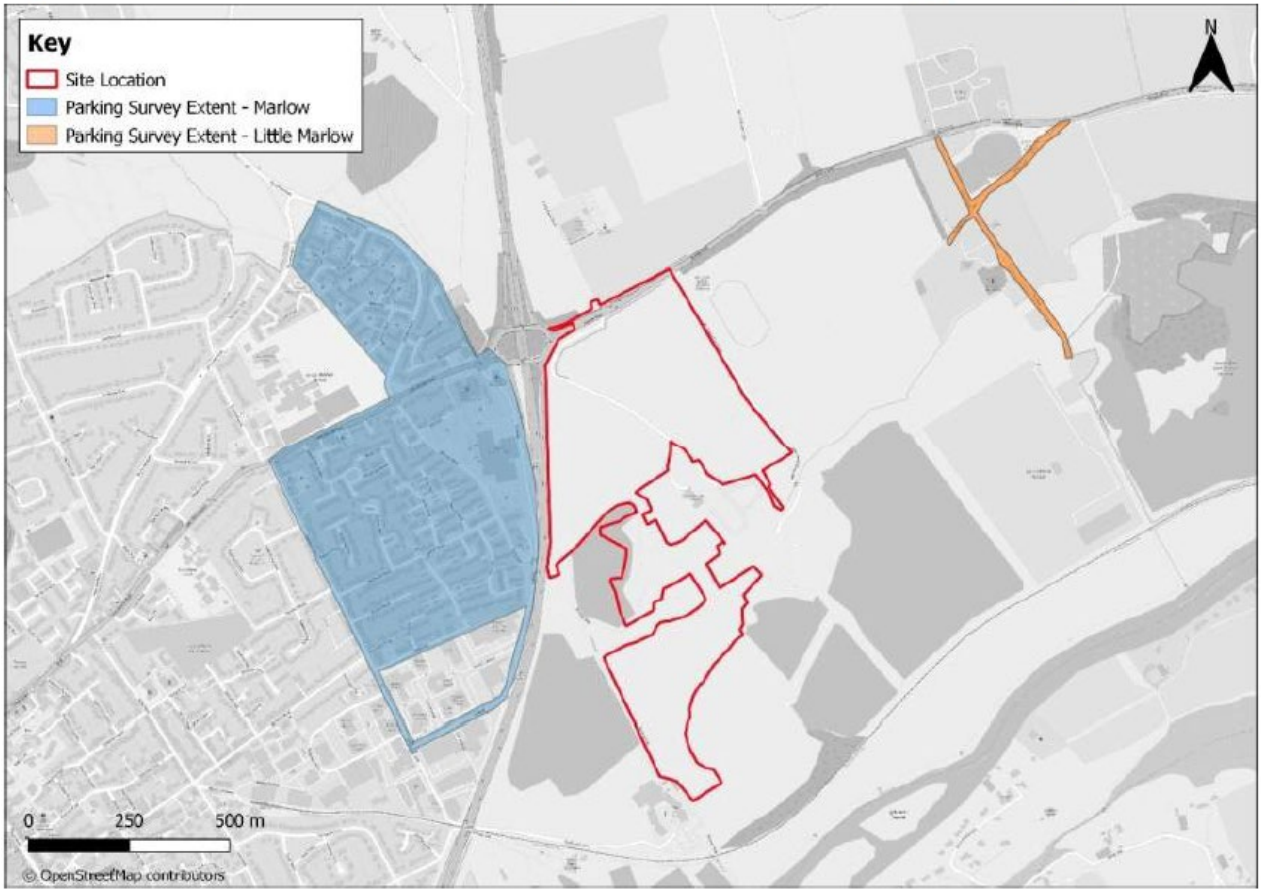
Car Parking

The HA's previous comments relating to TAA2 noted the proposed parking management within the site and the HA considers that parking management within the site forms a significant part of the strategy to reduce the number of car movements to it. The HA is however also aware that if the parking management proposals within the site are to be successful in reducing car trips to the site, then there also needs to be a mechanism by which any off-site overspill parking can be managed and restricted. This is to stop people who drive to the site and are turned away, as they are not entitled to park on site, parking within Marlow to the west and Little Marlow to the east, resulting in additional pressure on the local highway network.

The applicant has previously stated that in the event that parking restrictions are required offsite to deal with any issues resulting from the parking of vehicles associated with the film studio, a contribution will be made to enable the introduction of parking restrictions. The HA's concern was that the applicant had not given any details as to how any issues associated with off-site parking, and the extent of any parking restrictions would need to cover, would be identified.

The STA confirms in paragraph 2.34 that as part of the Mode Share Incentive Scheme (MSIS) it is proposed to monitor whether there is any increase in on-street parking on the roads around the film studio site as a result of the development. In order to do this the STA includes an area that the applicant has identified where they consider there could be a potential for on-street parking to occur. The area covers roads in Little Marlow to the east of the site and Marlow to the west of the site which are within a reasonable walking distance of the site, which the applicant has identified as a 10 minute walking distance. The identified area is shown in Figure 1 on page 18 of the STA and is included below for confirmation.

Figure 1: Marlow and Little Marlow Walking Isochrones – Offsite Parking Monitoring



It is proposed that the streets identified in the highlighted area would be subject to an on-street parking survey on a neutral weekday (Tuesday, Wednesday and Thursday) between 1400 and 1600 to establish the baseline position of on-street parking. It is then proposed that annual surveys of the same streets at the same times would be undertaken in order to identify whether on-street parking conditions have changed. If there is an identified change in conditions then further surveys would be needed in the identified areas to determine whether the changes relate to the site. It is suggested that this could be done through surveys of pedestrians arriving at the site on foot and through observations.

The applicant states that in the event that there is additional on-street parking associated with the development then a financial contribution will be made available to fund the Traffic Regulation Order (TRO) process to manage the parking on the identified roads. In order to minimise any implications for residents on the identified roads the parking restrictions could simply be to restrict parking for 1 hour on weekdays between 1100 and 1200, consistent with other areas where restrictions are used to manage commuter parking.

The HA considers that the principles of what is being proposed to manage any impacts of any identified off-site parking associated with the development site are appropriate, however as the final details of the strategy (e.g. scope of surveys and the ability to secure appropriate mitigation) have not been submitted and agreed, the HA is not in a position to confirm that the measures are acceptable. It is noted that while the Volvo footbridge is being proposed as an access route to the site for pedestrians it does not appear that the survey area covers a 10 minute walk from where the footbridge crosses the A404. The scope of the survey will therefore need to be increased to cover that area. It is also noted that the applicant may look to provide the link to the south of the site to Fieldhouse Lane in the future and if this did occur then the detail of the strategy would need to allow the impacts of that link on on-street parking to also be monitored and managed if required.

Monitor and Manage

The Monitor and Manage approach has been set out in previous documentation provided by the applicant, however for confirmation I will set out the main aims below:

- Provide the framework for delivery of the mode share targets for the site.
- Deliver the mechanism for monitoring vehicular access to the site and car park demand, and for reviewing the modal share targets in the future.
- Set the parameters for a 'Mode Share Incentive Scheme' (MSIS) to ensure achievement of mode share targets.
- Monitoring of travel to/from the site will be undertaken to ensure that the objectives and targets of the MSIS and the Travel Plan are met.
- Monitoring will also be undertaken of parking on identified roads around the site to ensure that there is no increase in on-street parking associated with the proposed site. Should these show a significant rise in demand then further work will be undertaken to determine whether the increase in parking relates to the site. If this is the case then money can be secured through the S106 to fund (partially or fully) the implementation of car parking restrictions to manage this parking.

The full details of the Monitor and Manage Strategy will need to be set out and agreed in the S106 Agreement that is secured as part of any planning permission that may be granted. At present the full details of the Monitor and Manage Strategy and how it would work have not been submitted by the applicant and therefore the HA is not in a position to confirm that the measures included in it would be adequate to deal with any issues arising from the proposed development. It should also be noted that the applicant will need to full fund any TRO and parking restrictions that may be required in order to address the impact of an identified on-street parking issues associated with the development.

Baseline and Future Network Traffic Flows

Baseline Data

Paragraph 3.2 of the STA confirms that the applicant has carried out a number of new traffic surveys comprising Manual Classified Count (MCC) surveys and queue length surveys to obtain current baseline data to inform the assessments on the wider highway network. To confirm, the additional surveys were carried out at the following locations.

- A4155 Little Marlow Road j/w Bobmore Lane and Newtown Road (Staggered Crossroad junction)
- A4155 Little Marlow Road j/w Glade Road (Priority T-junction)
- A4155 Little Marlow Road j/w Wycombe Road (Priority T-junction)
- A4155 Chapel Street j/w Dean Street and Marlow Road (Three-arm mini roundabout)
- A4155 Marlow Road j/w High Street and West Street (Three-arm mini roundabout)
- A4155 Marlow Road j/w Sheepridge Lane (Three-arm mini roundabout)
- A4155 Marlow Road j/w Blind Lane (Priority T-junction)
- A4155 The Parade j/w Cores End Road and Station Road (Three-arm mini roundabout)

Future Year Traffic Data

The STA confirms that the future year traffic growth has been obtained using TEMPro growth factors that have previously been agreed with the HA. It also confirms that the development flows used to inform the assessments contained with the STA are the flows that have also been previously agreed with the HA.

Junction Impact and VISSIM Model Assessment

VISSIM Model Assessment

As mentioned in my previous consultation responses, the VISSIM modelling that the applicant has carried out has been reviewed by Atkins on behalf of the Council to ensure that the model has been built correctly, it validates well and the driver behaviour reflects real life conditions on the network. Following a number of reviews and a number of updates by the applicant, Atkins have confirmed that they are satisfied with these elements of the modelling, therefore the applicant has moved to use that approved model to carry out the scenario testing of the development traffic impact on the modelling area.

As a result of the final assessment by Atkins being submitted after the STA was written, the final updates to the applicant's modelling have been submitted in a document titled 'Briefing Note: VISSIM Modelling', dated September 2023 (Document Reference 'WIE18037.125.TN.21.1.2'). Paragraph 1.3 of the Briefing Note (BN) confirms that it updated and supersedes the content of Section 4 and Appendices G, H and I of the STA submitted on 4th September 2023.

The following comments therefore consider the VISSIM modelling contained within the BN rather than Section 4 of the STA.

Paragraph 2.8 of the BN confirms that the calibrated and validated base model has been used to test agreed scenarios comprising:

- Do Nothing (DN or 'Reference Case') – base traffic factored up to future years 2027 and 2034 using TEMPRO;
- Do Something (DS or 'Proposed Development') – as above, but with the inclusion of the Managed (STS) development traffic, the proposed Marlow Road/Site Access roundabout, including a controlled signalised pedestrian crossing on the eastern arm (DS5), and proposed mitigation at Westhorpe Interchange comprising part-signalisation and including signalised pedestrian crossings on the northern slip roads.

Paragraph 2.10 of the BN states the following:

> *"2.10 As previously reported a 'Sensitivity Test' has also been undertaken for the DS scenario which contains 'Unmanaged' development flows. As previously set out, given the nature and provisions of the Proposed Development, and the direct level of control inherent in the operation of the Film industry, it is not considered that an unmanaged scenario will arise."*

However, the HA has always considered the mode share targets put forward by the applicant to be ambitious and unrealistic. It is also not possible to guarantee that the mode share targets will be met, therefore the HA has always insisted that the unmanaged scenario needs to be tested as the HA needs to be sure that any impact arising from that scenario can be adequately mitigated.

The BN goes onto confirm at paragraph 2.12 that two variations of the Do Something scenarios have been tested. These are as follows:

- Option 1 – which includes a two-lane approach on Little Marlow Road between the Parkway Roundabout and Westhorpe Interchange; and
- Option 2 – as above, but with a three-lane approach.

The BN states in paragraph 2.13 that the results presented for Managed (STS) development traffic are reporting the impact for both the Do Something Options 1 & 2, whereas the 'Unmanaged' development flows are reported for the Do Something Option 2 only.

MOVA Operation

The applicant has stated that feedback and commentary from the independent reviews of the VISSIM model identified that the impact of Microprocessor Optimised Actuation (MOVA) should be investigated to better balance queues around the junction and one the A404 slip roads. The model has therefore been set up to allow fixed-time plan changes which respond to changing flows within the model, which will reflect the effect of MOVA operation.

The HA has now taken the opportunity to review the VISSIM modelling results and can confirm the following observations in relation to the performance of the modelled network.

A4155 Little Marlow Road/Wiltshire Road Roundabout

Wiltshire Road North Arm

2027

In the AM peak, the 2027 baseline average maximum queue on the Wiltshire Road north approach to the junction is 94 metres long, increasing by 32 metres to 126 metres in the Managed Option 1 scenario and to 119 metres, an increase of 25 metres, or a 27% increase, in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue increases by 39 metres to 133 metres. There are continuous queues on this approach throughout the AM peak hour.

In the evening peak, the 2027 baseline average maximum queue on the Wiltshire Road north approach to the junction is 46 metres long, remaining at 46 metres in the Managed Option 1 scenario and increasing slightly to 47 metres in the Managed Option 2 scenario and the Unmanaged Option 2 scenario. There are small continuous queues on this approach throughout the PM peak hour.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Wiltshire Road north approach to the junction is 101 metres long, increasing by 58 metres to 159 metres in the Managed Option 1 scenario and by 33 metres to 134 metres, a 33% increase, in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue increases by 74 metres to 175 metres, a 73% increase. There are continuous queues on this approach throughout the AM peak hour.

For 2034 in the PM peak, the baseline average maximum queue on the Wiltshire Road north approach to the junction is 49 metres long, increasing to 53 metres in the Managed Option 1 scenario and reducing to 45 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue reduces to 48 metres, a reduction of 1 metre when compared to the 2034 DN scenario. There are small continuous queues on this approach throughout the PM peak hour.

It can be concluded that there will be a significant increase in queueing in the AM peak hour on this arm due to development traffic, even with the Option 2 scenario. The AM peak hour impact on this arm of the junction is therefore not acceptable to the HA. The impact in the PM period in terms of queueing is shown to be minimal.

Little Marlow Road East arm

2027

In the AM peak, the 2027 baseline average maximum queue on the Little Marlow Road East approach to the junction is 171 metres long, increasing slightly to 172 metres in the Managed Option 1 and the Managed Option 2 scenarios.

In the Unmanaged Option 2 scenario the queue increases to 173 metres. There are continuous queues on this approach throughout the AM peak hour with a peak between 0810 and 0830.

In the evening peak, the 2027 baseline average maximum queue on the Little Marlow Road East approach to the junction is 141 metres long, increasing to 159 metres in the Managed Option 1 scenario and increasing to 164 metres in the Managed Option 2 scenario.

In the Unmanaged Option 2 scenario the queue increases by 22 metres to 163 metres, a 16% increase, in the Unmanaged Option 2 scenario. There are continuous queues on this approach throughout the PM peak hour.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Little Marlow Road East approach to the junction is 171 metres long, increasing to 172 metres in the Managed Option 1 scenario and remaining at 171 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue increases to 172 metres. There are continuous queues on this approach throughout the AM peak hour with a peak between 0810 and 0830.

For 2034 in the PM peak, the baseline average maximum queue on the Little Marlow Road East approach to the junction is 143 metres long, increasing by 24 metres to 167 metres in the Managed Option 1 scenario and to 168 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue also increases to 167 metres. There are continuous queues on this approach throughout the PM peak hour.

It can be concluded that the development traffic and the proposed improvements have a minimal effect on this arm of the junction in the AM peak hour, but there is already significant queueing in the DM scenario. The development traffic impact in the PM peak hour is shown to be greater with increases in queueing of over 20 metres, however this equates to around 4 Passenger Car Units (PCU's) and is not considered to be material.

Wiltshire Road South

2027

In the AM peak, the 2027 baseline average maximum queue on the Wiltshire Road south approach to the junction is 68 metres long, increasing to 78 metres in the Managed Option 1 and the Managed Option 2 scenarios.

For the Unmanaged Option 2 scenario the queue increases by 13 metres to 81 metres, which equates to around a 2 PCU increase. There are continuous queues on this approach throughout the AM peak hour with a peak between 0815 and 0830.

In the evening peak, the 2027 baseline average maximum queue on the Wiltshire Road south approach to the junction is 15 metres long, remaining at 15 metres in the Managed Option 1 and increasing to 16

metres in the Managed Option 2 scenario, increasing to 17 metres in the Unmanaged Option 2 scenario. There is very little queuing on this approach during the PM peak hour.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Wiltshire Road south approach to the junction is 94 metres long, increasing by 11 metres to 105 metres in the Managed Option 1 scenario and to 107 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the spreadsheet attached to the STA shows that the queue increases to 97 metres. There are continuous queues on this approach throughout the AM peak hour with a peak between 0810 and 0830.

For 2034 in the PM peak, the baseline average maximum queue on the Wiltshire Road north approach to the junction is 16 metres long, remaining at 16 metres long in the Managed Option 1 and the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases to 17 metres. There is very little queuing on this approach during the evening peak hour.

It can be concluded that the development traffic and the proposed improvements have a minimal effect on this arm and there is little queuing on this arm.

Little Marlow Road West

2027

In the AM peak, the 2027 baseline average maximum queue on the Little Marlow Road West approach to the junction is 141 metres long, increasing by 122 metres to 263 metres, an 87% or 21 PCU increase, in the Managed Option ,1 and by 117 metres, an 83% or 20 PCU increase, to 258 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue increases by 139 metres, or 24 PCU's, to 280 metres thereby doubling the queue length. There are continuous queues on this approach throughout the AM peak hour.

In the evening peak, the 2027 baseline average maximum queue on the Little Marlow Road West approach to the junction is 156 metres long, increasing by 33 metres, or 6 PCU's, to 189 metres, a 21% increase in the Managed Option 1 scenario and by 31 metres, or 5 PCU's, to 187 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario it increases by 89 metres, or 15 PCU's, to 245 metres, a 57% increase. There are continuous queues on this approach throughout the PM peak hour.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Little Marlow Road West approach to the junction is 169 metres long, increasing by 137 metres, or 24 PCU's, to 306 metres, an 81% increase, in the Managed Option 1 scenario and by 125 metres, or 22 PCU's, to 294 metres, a 74% increase, in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue increases by 143 metres, or 25 PCU's, to 312 metres, an increase of 85%. There are continuous queues on this approach throughout the AM peak hour.

For 2034 in the PM peak, the baseline average maximum queue on the Little Marlow Road West approach to the junction is 197 metres long, increasing by 48 metres, or 8 PCU's, to 245 metres in the Managed Option 1 scenario, a 24% increase, and by 40 metres, or 7 PCU's, to 237 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue increases to 245 metres, the same increase as experienced in the 2034 Managed (Option 1) scenario. There are continuous queues on this approach throughout the PM peak hour.

There is significant queueing in both peak hours on this arm but specifically in the AM peak hour. The development traffic has a significant effect on this arm, increasing queueing by between 74% and 100% in the AM peak hour. In the PM peak hour, the increases are between 20% and 57%. The results show a material increase in queueing on this arm of the junction, which is not acceptable to the HA.

Junction Summary

It can be concluded that the development traffic has a significant effect on the Wiltshire Road North and Little Marlow Road West arms of this junction in the AM peak hour with queue lengths increasing by between 27% to 100%. It is considered that this is an unacceptable material impact on an already congested junction.

A4155 Little Marlow Road/Parkway Roundabout

Little Marlow Road West arm

2027

In the AM peak, the 2027 baseline average maximum queue on the Little Marlow Road West approach to the junction is 81 metres long, increasing to 90 metres in the Managed Option 1 scenario and to 91 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue increases to 93 metres.

In the PM peak, the 2027 baseline average maximum queue on the Little Marlow Road West approach to the junction is 91 metres long, increasing to 93 metres in the Managed Option 1 scenario, but reducing to 85 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 88 metres long.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Little Marlow Road West approach to the junction is 85 metres long, increasing by 9 metres to 94 metres in the Managed Option 1 scenario and to 93 in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases to 94 metres.

For 2034 in the PM peak, the baseline average maximum queue on the Little Marlow Road West approach to the junction is 91 metres long, increasing to 93 metres in the Managed Option 1 scenario and reducing to 87 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 88 metres long. For the Unmanaged Option 2 scenario the queue would be 90 metres long.

It can be concluded that the development traffic and the proposed improvements have a minimal effect on this arm but there is already some queueing in the DN scenario.

Little Marlow Road East arm

2027

In the AM peak, the 2027 baseline average maximum queue on the Little Marlow Road East approach to the junction is 175 metres long, increasing by 146 metres, or 25 PCU's, to 321 metres in the Managed Option 1 scenario, an increase of 83% and increasing by 142 metres, or 24 PCU's, to 317 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue increases by 160 metres, or 28 PCU's, to 335 metres, a 91% increase. There is considerable queueing on this approach throughout the AM peak hour, which at 335 metres, would extend back through the Westhorpe Interchange and along the A4155 up to the site access.

In the evening peak, the 2027 baseline average maximum queue on the Little Marlow Road East approach to the junction is 35 metres long, increasing by 71 metres, or 12 PCU's, to 106 metres in the Managed Option 1 scenario, a 200% increase and increasing by 124 metres, or 22 PCU's, to 159 metres, a 350% increase, in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would increase by 156 metres, or 27 PCU's, to 191 metres which is an increase of 445%.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Little Marlow Road East approach to the junction is 202 metres long, increasing by 146 metres, or 25 PCU's, to 348 metres in the Managed Option 1 scenario, a 72% increase, and to 343 in the Managed Option 2 scenarios.

For the Unmanaged Option 2 scenario the queue increases to 396 metres, an increase of 194 metres, or 34 PCU's (96%).

For 2034 in the PM peak, the baseline average maximum queue on the Little Marlow Road East approach to the junction is 49 metres long, increasing by 133 metres, or 23 PCU's, to 182 metres in the Managed Option 1 scenario and by 136 metres, or 24 PCU's, to 185 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would be increasing by 209 metres, or 36 PCU's, to 258 metres long, an increase of 427%.

As the impact of the development traffic on this arm is so significant, it is questioned whether the results in the spreadsheet are correct or whether the DS results have been swapped with the Little Marlow Road West arm especially as Paragraph 2.26 of the VISSIM Modelling Note states "…*in the AM Peak, the impact of the additional development traffic is mitigated such that a significant decrease in queueing is observed, particularly on the A4155 (East) at Parkway*…". However, the results as presented in the information submitted show that the development traffic has a material impact on the queueing at this junction, which is not acceptable to the HA.

Parkway arm

2027

In the AM peak, the 2027 baseline average maximum queue on the Parkway approach to the junction is 30 metres long, increasing to 36 metres in the Managed Option 1 and the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases to 37 metres. There is minimal queueing on this approach throughout the AM peak hour.

In the evening peak, the 2027 baseline average maximum queue on the Parkway approach to the junction is 514 metres long, increasing to 516 metres in the Managed Option 1 scenario, but reducing to 387 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would be 463 metres long, a reduction of 51 metres. Even in the DN scenario there is considerable queuing on this approach throughout the evening peak period.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Parkway approach to the junction is 36 metres long, increasing to 41 metres in the Managed Option 1 scenario and to 48 in the Managed Option 2 scenarios.

For the Unmanaged Option 2 scenario the queue increases to 44 metres.

For 2034 in the PM peak, the baseline average maximum queue on the Parkway approach to the junction is 517 metres long, remaining at 517 metres in the Managed Option 1 scenario and reducing to 508 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would be 516 metres long, a reduction of 1 metre.

It can be concluded that the development traffic has minimal effect on this arm and the mitigation reduces the queues on this arm in the 2027 Option 2 scenario.

Junction Summary

It can be concluded that the development has an unacceptable impact on the Little Marlow East arm with queue lengths increasing by 72% to 445% but minimal effect on the other arms. However, it is considered that there might be an error in the data of the spreadsheet and the increase is in fact on the Little Marlow Road West arm which would correspond with the Wiltshire Road junction and paragraph 2.26 of the VISSIM Modelling Note. The mitigation slightly improves the queues on Parkway. Nevertheless, it is considered that the proposed development has an unacceptable material impact on an already congested junction.

A404/A4155 Westhorpe Interchange

This junction forms part of the Strategic Highway Network that falls under the control of National Highways (NH). While NH will be mostly interested in the development traffic impact on the on and off slips to the A404, the HA will still need to carefully consider the impact on the A4155 arms of the junction that fall under the control of the HA.

A404 North off slip road

It should be noted that this arm of the junction links to the A404 and will be of particular interest to National Highways (NH) as this falls under their control. The Local HA will give a view on the operation of this arm; however, NH will ultimately confirm the development traffic impact on this arm.

2027

In the AM peak, the 2027 baseline average maximum queue on the A404 North approach to the junction is 236 metres long, reducing to 186 metres in the Managed Option 1 and to 192 metres in the Managed Option 2 scenarios.

For the Unmanaged Option 2 scenario the queue reduces to 212 metres. There is continuous queueing on this approach throughout the AM peak hour.

In the evening peak, the 2027 baseline average maximum queue on the A404 North approach to the junction is 78 metres long, increasing by 34 metres, or 6 PCU's to 112 metres (44%) in the Managed Option 1 scenario and by 37 metres, or 6 PCU's, to 115 metres, 47%, in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would be 108 metres long, an increase of 30 metres or 5 PCU's. There is considerable queuing on this approach throughout the evening peak period.

2034

For 2034 in the AM peak, the baseline average maximum queue on the A404 North approach to the junction is 372 metres long, reducing to 273 metres in the Managed Option 1 scenario and to 292 in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases to 287 metres.

For 2034 in the PM peak, the baseline average maximum queue on the A404 North approach to the junction is 90 metres long, increasing by 54 metres, or 9 PCU's to 144 metres in the Managed Option 1 scenario and by 51 metres, or 8 PCU's, to 141 metres, an increase of 57%, in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would be 138 metres long.

This arm sees a reduction in the AM peak hour with the development traffic but an increase in the PM peak hour of 44% to 57% in the PM peak hour, which is considered to be material.

Marlow Road arm (westbound approach)

2027

In the AM peak, the 2027 baseline average maximum queue on the Marlow Road approach to the junction is 137 metres long, increasing by 68 metres, or 12 PCU's, to 205 metres, a 50% increase, in the Managed Option 1 scenario and by 76 metres, or 13 PCU's, to 213 metres, a 55% increase, in the Managed Option 2 scenarios.

For the Unmanaged Option 2 scenario the queue increases by 82 metres, or 14 PCU's, to 219 metres a 60% increase. There is continuous queueing on this approach throughout the AM peak hour.

In the evening peak, the 2027 baseline average maximum queue on the Marlow Road approach to the junction is 77 metres long, increasing by 90 metres, or 15 PCU's, to 167 metres, a 117% increase, in the Managed Option 1 scenario and increasing by 94 metres, or 16 PCU's, to 171 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would be increasing by 107 metres, or 19 PCU's, to 183 metres long, a 139% increase. There is queuing on this approach throughout the evening peak period.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Marlow Road approach to the junction is 152 metres long, increasing by 68 metres, or 12 PCU's to 220 metres, a 45% increase in the Managed Option 1 scenario, and by 62 metres, or 11 PCU's, to 214 in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases by 74 metres, or 13 PCU's, to 226 metres.

For 2034 in the PM peak, the baseline average maximum queue on the Marlow Road approach to the junction is 85 metres long, increasing by 96 metres, or 17 PCU's, to 181 metres, a 113% increase, in the Managed Option 1 scenario and to 182 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario, the queue would be increasing by 106 metres, or 18 PCU's, to 191 metres long, a 125% increase.

This arm is significantly affected by the development traffic in the PM peak hour with queues lengths doubling. In the AM peak hour queues are already long and there are increases in queue lengths of 45% to 60%. In all Do Something scenarios the maximum queues extend beyond the site access junction having the potential to block it. Even the average queues approach the site access junction in the AM peak hour.

A404 South off slip road

It should be noted that this arm of the junction links to the A404 and will be of particular interest to National Highways as this falls under their control. The Local HA will give a view on the operation of this arm; however, NH will ultimately confirm the development traffic impact on this arm.

2027

In the AM peak, the 2027 baseline average maximum queue on the A404 South approach to the junction is 934 metres long, reducing to 300 metres in the Managed Option 1 and to 304 metres in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue reduces to 280 metres. There is continuous queueing on this approach throughout the AM peak hour, particularly after 0815.

In the evening peak, the 2027 baseline average maximum queue on the A404 South approach to the junction is 117 metres long, increasing by 76 metres, or 13 PCU's, to 193 metres, a 65% increase, in the Managed Option 1 scenario and by 82 metres, or 14 PCU's, to 199 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would increase by 86 metres, or 15 PCU's, to 203 metres long, a 74% increase. There is considerable queuing on this approach throughout the evening peak period.

2034

For 2034 in the AM peak, the baseline average maximum queue on the A404 South approach to the junction is 1439 metres long, reducing by 984 metres to 455 metres in the Managed Option 1 scenario and to 453 in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue reduces by 974 metres to 465 metres.

For 2034 in the PM peak, the baseline average maximum queue on the A404 South approach to the junction is 154 metres long, increasing by 83 metres to 237 metres (54%) in the Managed Option 1 scenario and to 232 metres in the Managed Option 2 scenario.

For the Unmanaged Option 2 scenario the queue would increase by 92 metres be 246 metres long, a 60% increase.

This arm sees a significant reduction in queue length in the AM peak hour with the development traffic but an increase of 54% to 74% in the PM peak hour.

Little Marlow Road arm (eastbound approach)

2027

In the AM peak, the 2027 baseline average maximum queue on the Little Marlow Road approach to the junction is 57 metres long, increasing by 6 metres to 63 metres in the Managed Option 1 scenario and reducing to 53 metres in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the

queue would reduce to 55 metres. There is a small amount of queueing on this approach throughout the AM peak hour.

In the evening peak, the 2027 baseline average maximum queue on the Little Marlow Road approach to the junction is 71 metres long, increasing to 73 metres in the Managed Option 1 scenario and reducing to 56 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would also be 56 metres long. There is a small amount of queueing on this approach throughout the AM peak hour.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Little Marlow Road approach to the junction is 57 metres long, increasing to 64 metres in the Managed Option 1 scenario and to 55 in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases to 56 metres.

For 2034 in the PM peak, the baseline average maximum queue on the Little Marlow Road approach to the junction is 71 metres long, increasing to 75 metres in the Managed Option 1 scenario and reducing to 58 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 59 metres long.

It can be concluded that the impact of the development traffic is minimal on this arm in both peak hours.

Junction Summary

The development traffic has a significant impact on the Marlow Road arm with queue lengths doubling in the PM peak hour and queue lengths of 220 metres in AM managed scenario. In all Do Something scenarios the maximum queues extend beyond the site access junction having the potential to block its operation and consequent impacts on its other arms.

The PM also sees increases on the A404 South off Slip road of 54% to 74% although there is a significant improvement in queue length in the AM peak hour. The AM North off slip road sees a small reduction in the AM peak hour with the development traffic but an increase in the PM peak hour of 44 to 57%.

It is considered that the proposed development will result in an unacceptable material impact on the Marlow Road arm of the junction, which forms part of the highway network under the control of the Local HA. It is understood that National Highways will confirm their position with regards to the impact on their part of the network in due course.

A4155 Marlow Road/Pump Lane South/Site Access

Pump Lane South

2027

In the AM peak, the 2027 baseline average maximum queue on the Pump Lane South approach to the junction is 6 metres long, remaining at 6 metres in the Managed Option 1 scenario, the Managed Option 2 scenario and the Unmanaged Option 2 scenario. Very little queuing occurs on this approach during the AM peak hour.

In the evening peak, the 2027 baseline average maximum queue on the Pump Lane South approach to the junction is 12 metres long, reducing to 9 metres in the Managed Option 1 scenario, the Managed Option 2 scenario and the Unmanaged Option 2 scenario. Very little queuing occurs on this approach during the evening peak hour.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Pump Lane South approach to the junction is 9 metres long, reducing to 6 metres in the Managed Option 1 scenario, the Managed Option 2 scenario and the Unmanaged Option 2 scenario.

For 2034 in the PM peak, the baseline average maximum queue on the Pump Lane South Little Marlow Road approach to the junction is 14 metres long, reducing to 9 metres in the Managed Option 1 scenario, the Managed Option 2 scenario and the Unmanaged Option 2 scenario.

It can be concluded that the development traffic and the proposed improvements have a minimal effect on this arm and there is minimal queueing.

Marlow Road East (westbound approach)

2027

In the AM peak, the 2027 baseline average maximum queue on the Marlow Road East approach to the junction is 81 metres long, increasing by 101 metres, or 17 PCU's, to 182 metres, an increase of 125%, in the Managed Option 1 scenario and to 183 metres in the Managed Option 2 scenarios.

For the Unmanaged Option 2 scenario the queue also increases by 101 metres to 182 metres. There is continuous queueing on this approach throughout the AM peak hour, particularly after 08:20.

In the evening peak, the 2027 baseline average maximum queue on the Marlow Road East approach to the junction is 0 metres, increasing to 67 metres, or 12 PCU's in the Managed Option 1 scenario and to 63 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 75 metres, or 13 PCU's, long. There is limited queuing on this approach during the evening peak period.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Marlow Road East approach to the junction is 134 metres long, increasing by 59 metres, or 10 PCU's, to 193 metres in the Managed Option 1 scenario and 193 in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue increases to 194 metres.

For 2034 in the PM peak, the baseline average maximum queue on the Marlow Road East approach to the junction is 18 metres long, increasing by 70 metres, or 12 PCU's to 88 metres in the Managed Option 1 scenario and to 86 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would increase by 102 metres, or 18 PCU's, and would be 120 metres long.

It can be concluded that there is an unacceptable increase in queueing on this arm in the AM peak hour due to the priority give way to the Marlow Road West arm.

Site Access

2027

In the AM peak, the 2027 baseline average maximum queue on the Site Access approach to the junction is 12 metres long, increasing to 48 metres in the Managed Option 1 and the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue would be 60 metres long.

In the evening peak, the 2027 baseline average maximum queue on the Site Access approach to the junction is 7 metres long, increasing by 89 metres, or 15 PCU's, to 96 metres in the Managed Option 1 scenario and by 94 metres, or 16 PCU's to 101 metres in the Managed Option 2 scenario. For the

Unmanaged Option 2 scenario the queue would be 229 metres long, an increase of 222 metres. Considerable queuing occurs on this approach throughout the evening peak hour.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Site Access approach to the junction is 16 metres long, increasing to 49 metres in the Managed Option 1 scenario and to 53 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 69 metres long.

For 2034 in the PM peak, the baseline average maximum queue on the Site Access approach to the junction is 7 metres long, increasing by 102 metres, or 18 PCU's, to 109 metres in the Managed Option 1 scenario, and by 113 metres, or 20 PCU's, to 120 metres in the Managed Option 2 scenario and increasing by 314 metres, or 55 PCU's, to 321 metres in the Unmanaged Option 2 scenario.

As expected, queues on the site access arm are long in the PM peak hour. It is not clear how queues of this length will impact on the internal operation of the development and the applicant has not provided any evidence to show that it would not have a detrimental impact. As it stands the HA has concerns over the operation of a new form of junction providing access to new development and the associated impacts both on and off the site that the shown level of queueing could have.

Marlow Road West (eastbound approach)

2027

In the AM peak, the 2027 baseline average maximum queue on the Marlow Road West approach to the junction is 0 metres long, increasing to 18 metres in the Managed Option 1 scenario and to 15 metres in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases to 30 metres. .

In the evening peak, the 2027 baseline average maximum queue on the Marlow Road West approach to the junction is 0 metres long, increasing to 21 metres in the Managed Option 1 scenario and to 20 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 24 metres long.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Marlow Road West approach to the junction is 0 metres long, increasing to 23 metres in the Managed Option 1 scenario and to 36 in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue reduces to 18 metres.

For 2034 in the PM peak, the baseline average maximum queue on the Marlow Road West approach to the junction is 0 metres long, increasing to 25 metres in the Managed Option 1 scenario and to 26 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 21 metres long.

It can be concluded that the queues on this arm are minimal and are not shown to block back to the Westhorpe Interchange.

A4155 Marlow Road/Westhorpe Farm Lane

Marlow Road West (eastbound approach)

2027

In the AM peak, the 2027 baseline average maximum queue on the Marlow Road West approach to the junction is 0 metres long, increasing to 30 metres in the Managed Option 1 scenario and to 53 metres in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases to 56 metres.

In the evening peak, the 2027 baseline average maximum queue on the Marlow Road West approach to the junction is 0 metres long, increasing to 8 metres in the Managed Option 1 scenario and to 11 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 24 metres long. There is very little queuing on this approach during the evening peak period.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Marlow Road West approach to the junction is 0 metres long, increasing to 63 metres in the Managed Option 1 scenario and to 77 in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue reduces to 22 metres.

For 2034 in the PM peak, the baseline average maximum queue on the Marlow Road West approach to the junction is 0 metres long, increasing to 14 metres in the Managed Option 1 scenario and to 28 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 25 metres long.

It can be concluded that there is minimal queueing on this arm but the development has an effect in the AM peak hour increasing queue lengths in Managed scenarios to 53 to 77 metres.

Marlow Road East (westbound approach)

2027

In the AM peak, the 2027 baseline average maximum queue on the Marlow Road East approach to the junction is 86 metres long, increasing by 262 metres, or 45 PCU's, to 348 metres, an increase of 300% in the Managed Option 1 scenario and to 333 metres in the Managed Option 2 scenarios. For the Unmanaged Option 2 scenario the queue increases to 324 metres.

In the evening peak, the 2027 baseline average maximum queue on the Marlow Road East approach to the junction is 0 metres long, increasing to 14 metres in the Managed Option 1 scenario and to 4 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 11 metres long.

2034

For 2034 in the AM peak, the baseline average maximum queue on the Marlow Road East approach to the junction is 219 metres long, increasing by 165 metres, or 29 PCU's, to 384 metres, an increase of 75%, in the Managed Option 1 scenario and to 382 in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue also increases to 384 metres.

For 2034 in the PM peak, the baseline average maximum queue on the Marlow Road East approach to the junction is 9 metres long, increasing to 29 metres in the Managed Option 1 scenario and to 39 metres in the Managed Option 2 scenario. For the Unmanaged Option 2 scenario the queue would be 36 metres long.

It can be concluded that the proposed development results in significant queue increases in the AM peak hour on this arm.

Westhorpe Farm Lane

In the AM peak, the 2027 baseline average maximum queue on the Westhorpe Farm Lane approach to the junction is 4 metres long and remains at 4 metres in the Managed Option 1 scenario, the Managed Option 2 scenario and the Unmanaged Option 2 scenario. Very little queuing takes place during the morning peak hour.

In the evening peak, the 2027 baseline average maximum queue on the Westhorpe Farm Lane approach to the junction is 2 metres long and remains at 2 metres in the Managed Option 1 scenario, the Managed Option 2 scenario and the Unmanaged Option 2 scenario. Very little queuing takes place during the evening peak hour.

2034

For 2034 in the AM peak, baseline average maximum queue on the Westhorpe Farm Lane approach to the junction is 4 metres long and remains at 4 metres in the Managed Option 1 scenario, the Managed Option 2 scenario and the Unmanaged Option 2 scenario.

For 2034 in the PM peak, the baseline average maximum queue on the Westhorpe Farm Lane approach to the junction is 3 metres long and remains at 3 metres in the Managed Option 1 scenario, the Managed Option 2 scenario and the Unmanaged Option 2 scenario.

Junction Summary

There is significant continuous queueing on the Marlow Road East arm resulting from the impact of the development traffic causing blocking back through the site access junction.

Overall Summary

The spreadsheet data, queue profiles, heatmaps and videos show that the proposed development will result in significant increases in queueing in the AM peak hour in particular on the A4155 through the modelled area affecting a number of junctions with long queues also occurring on the site access itself..

Overall, it is the position of the Local HA that the VISSIM modelling demonstrates that the development traffic will have an unacceptable impact on the operation of the local highway network as submitted and further information would be required to show if and how this can be adequately mitigated.

Wide Area Network Assessment

Section 5 of the STA looks at the assessment on the wider highway network. This assessment was originally included in a Briefing Note, however the assessment, and associated information in now contained in the STA. While the majority of the information in the STA is consistent with the information contained in the Briefing Note, the STA contains updated assessments mainly for the junctions on the National Highways network.

Following discussions between the applicant, National Highways and the Council, it has been agreed that the applicant carries out detailed junction impact assessments of 11 further junctions on the local highway network. The Briefing Note states that junctions subject to further assessment are as follows:

1. M40 Junction 4 – Handy Cross Roundabout – National Highways to confirm requirements. BC would also like to understand any impact on the Local Highway Authority network;
2. A404 / Marlow Road ‘Bisham’ Roundabout – National Highways to confirm requirements;

3. Wiltshire Road / A4155 Little Marlow Road Roundabout;
4. Newtown Road / A4155 Little Marlow Road / Bobmore Lane priority staggered crossroads;
5. Glade Road / A4155 Little Marlow Road priority T-junction;
6. Wycombe Road / A4155 Little Marlow Road priority T-junction – Not previously included;
7. A4155 Chapel Street / B482 Dean Street / A4155 Marlow Road mini-roundabout;
8. High Street / A4155 Marlow Road / A4155 West Street mini-roundabout;
9. Winchbottom Lane / A4155 Marlow Road priority T-junction (Little Marlow);
10. Sheepridge Lane / A4155 Marlow Road mini-roundabout (Bourne End);
11. Blind Lane / A4155 Marlow Road priority T-junction;
12. A4155 Cores End Road / The Parade / Station Road mini-roundabout.

Survey Data

The applicant has explained that additional Manual Classified Turning Count and Queue Length traffic surveys have been undertaken during July 2023 at the identified Local Road Network (LRN) junctions on the A4155 corridor to obtain current 2023 baseline data, upon which the current detailed assessments are based.

The STA also explains that traffic flows for junctions on the Strategic Road Network (SRN) have been factored to reflect observed changes in network traffic flow between 2021 and 2023 observed data at Westhorpe Interchange.

Scenarios

The applicant explains that the following scenarios have been tested:

- Observed (Existing) Baseline (for model calibration);
- 2027 Future Baseline;
- 2034 Future Baseline;
- 2027 Baseline plus Managed Development;
- 2034 Baseline plus Managed Development;
- 2027 Baseline plus Unmanaged Development;
- 2034 Baseline plus Unmanaged Development;
- 2027 Baseline plus Reasonable Unmanaged Development; and
- 2034 Baseline plus Reasonable Unmanaged Development.

TEMPro has been used to factor up the 2023 flows to 2027 and 2034. The TEMPro data has been reviewed and is considered to be acceptable.

As explained in previous highways responses, there remains concern that the mode share targets proposed by the applicant are ambitious and unlikely to be achieved. Appropriate mitigation measures are therefore required should model shift targets not be achieved.

Strategic Road Network Assessment

Handy Cross Roundabout

Handy Cross is the grade separated traffic signalled controlled junction between the M40 and the A404 which also connects High Wycombe to the M40. It is located approximately 3.5km to the north of the Westhorpe Interchange. The junction forms part of the SRN managed by National Highways, however the A4010, Marlow Road, Marlow Hill and Wycombe Road approaches are part of the local highway network maintained by BC.

In consultation with National Highways, a bespoke LinSig based assessment of the A404 and M40 approaches at the Handy Cross Interchange has been undertaken.

The STA states in paragraph 5.59 that:

> "*A simple assessment has been provided for the A4010 and A404 North approaches to Handy Cross interchange in the morning peak*."

It goes on to state in paragraph 5.61 that:

> *"The average additional demand per lane for the A4010 entry would be 0.3 pcu cycle, or 1 pcu every third cycle. This increase is not considered significant."*

It also states in 5.62 that:

> *"The average additional demand per lane for the A404 North entry would be 1.1 pcu per cycle when considered over a single lane*."

While it has not been explained how the 0.3 PCU and 1.1 PCU per cycle has been obtained, it has been assumed that the hourly increase in PCUs, 34 and 54, has been divided by the number of cycles in the AM peak hour. The Briefing Note explains that the cycles are 72 seconds, which would result in 50 cycles in the AM peak hour. The A4010 has two entry lanes, therefore the increase would be 0.3 PCU per lane. The A404 entry has one lane towards the A404 as the other two lanes are for the M40. Therefore, the increase is 1.1 PCU per cycle.

In addition to demand per cycle the hourly % increase has been shown in Table 28 on page 77 of the TAA2. It shows an increase of 3% on the A4010 in the unmanaged growth scenario in the AM peak hour and 4.65% on Marlow Hill. In the PM peak hour, shown in Table 29, the increase is less, with 0.85% increase in the unmanaged growth scenario on the A4010 and 1.63% in the PM peak hour.

Following a review of this information it is concluded that the impact of the development proposals on the operation of the A4010 arm and the Marlow Hill arm of the Handy Cross Interchange is likely to be minimal and mitigation measures are therefore not required to improve capacity on these arms.

A404 / Marlow Road 'Bisham' Roundabout

As this junction is located on part of the network that falls under the control of National Highways, in addition to it being located outside of Buckinghamshire, National Highways will provide comments.

Local Road Network Assessment

A4155 Little Marlow Road / Wiltshire Road Roundabout

Paragraph 5.92 of the STA states the following:

> "*The A4155 Little Marlow Road / Wiltshire Road Roundabout is included within the Westhorpe Interchange VISSIM model, which enables a microsimulation assessment of the junction. The VISSIM model provides an assessment of the impact of the Proposed Development upon the Wiltshire Road roundabout in the context of the adjoining network and reflecting the interaction of traffic effects on the A4155 corridor and at adjacent junctions*."

Paragraph 5.93 of the STA goes onto state:

> "*On this basis the VISSIM model is considered to represent a more accurate assessment of the impact of the Proposed Development upon this junction than a standalone capacity model. Accordingly a Junctions 10 ARCADY model has not been prepared for this junction, which will be assessed with reference to the emerging VISSIM model*."

A review of this junction has therefore been conducted as part of the VISSIM model review.

A4155 Little Marlow Road / Bobmore Lane / Newton Road Junction

This is a staggered priority junction with Bobmore Lane located north west of Newton Road. A Zebra Crossing facility is located on the A4155 Little Marlow Road western arm, 20m west of Bobmore Lane.

The geometry has been checked and is correct, however, the zebra crossing on the western arm has not been included in the model. The applicant should have included this zebra crossing as well as reasonable demand on the crossing. The flows have been checked and are consistent with the flow matrices provided. However, the 2023 modelled queues have been compared with the recorded queues in the queue survey and there are significant differences in the PM peak hour with queue lengths of over 13 vehicles on the Little Marlow Road Eastbound arm. It is therefore considered that the junction is not correctly calibrated, therefore the future year modelling results may be unreliable.

	Bobmore Lane		Little Marlow Road WB Right-Turn		Newtown Road		Little Marlow Road EB Right-Turn	
Times	Lane 1		Lane 1		Lane 1	Lane 2	Lane 1	
17:00 - 17:05	2		7		5	0	2	
17:05 - 17:10	2		1		7	0	3	
17:10 - 17:15	2		7		8	0	3	
17:15 - 17:20	2		1		10	0	7	
17:20 - 17:25	3		2		11	0	2	
17:25 - 17:30	3		2		12	0	12+	
17:30 - 17:35	6		4		16	0	12+	
17:35 - 17:40	8		2		11	0	13+	
17:40 - 17:45	7		6		10	0	12+	
17:45 - 17:50	9		0		9	0	11+	
17:50 - 17:55	5		9		10	0	13+	
17:55 - 18:00	6		4		7	0	13+	

Junction Arm	AM Peak			PM Peak		
	RFC	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)
2023 Observed Flows						
Newtown Rd	0.45	0.8	19.47	0.59	1.4	22.44
A4155 WB Right-turn into Bobmore Lane	0.22	0.4	7.83	0.38	0.9	7.86
Bobmore Lane	0.32	0.5	10.14	0.23	0.3	8.01
A4155 EB Right-turn into Newtown Road	0.24	0.4	7.26	0.14	0.2	7.54

Paragraph 5.102 of the STA states:

> "*It should be noted that this junction is occasionally impacted by queueing which extends back from downstream junctions causing exit blocking and therefore does not always operate as a standalone junction. This junction may also experience occasional delays resulting from*

pedestrians crossing the A4155 at the zebra crossing located to the west of this junction during peak periods."

However, a review of queue lengths shows consistent queueing rather than short periods of congestion. The survey shows queues of 14+ vehicles but this could be significantly more vehicles. It is therefore considered that the base model for this junction in the Wider Network Assessment does not reflect existing conditions and, therefore, the results from the future year modelling are unreliable. The HA is therefore not in a position to determine that the development traffic impact at this junction is not severe.

A4155 Little Marlow Road / Glade Road Junction

The junction of the A4155 Little Marlow Road with Glade Road is a priority T-junction with a ghost island right-turn facility. The ghost island is 24m long and would accommodate approximately 4 PCUs.

The geometry of the model has been checked and it would appear that there are significant errors. The width of the A4155 is 5.7m rather than 6.55m. The Little Marlow Road right turn only accommodates 4 vehicles before it blocks, and this has not been reflected in the model which shows no blocking. Also, kerbed central reserve has been ticked while there is none.

The flows have been checked and it is noted that, in both the spreadsheet and the PICADY model, the peak hour flows on the Glade Road and Little Marlow Road East arms have been switched when compared to the survey data. The 2023 modelled queues have been compared with the recorded queues in the queue survey and there are differences in both peak hours with queues on both Glade Road and Little Marlow Road Eastbound arm. This will mainly be the result of the errors in data entry and geometry as described above, but the junction also needs to be calibrated against recorded vehicle queues.

	Glade Road		Little Marlow Road Right-Turn	
Times	Lane 1	Lane 2	Lane 1	
08:00 - 08:05	2	4	7	
08:05 - 08:10	4	2	6	
08:10 - 08:15	1	3	1	
08:15 - 08:20	2	3	3	
08:20 - 08:25	1	2	3	
08:25 - 08:30	2	2	1	
08:30 - 08:35	4	2	2	
08:35 - 08:40	1	1	1	
08:40 - 08:45	1	1	3	
08:45 - 08:50	3	3	4	
08:50 - 08:55	3	2	0	
08:55 - 09:00	1	1	4	

Table 12: A4155 Little Marlow Road j/w Glade Road – Junctions 10 (PICADY) Results

Junction Arm	AM Peak			PM Peak		
	RFC	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)
2023 Observed Flows						
Glade Road (Left-turn lane)	0.56	1.4	14.59	0.50	1.0	12.53
Glade Road (Right-turn lane)	0.36	0.6	16.09	0.30	0.4	11.65
A4155 Little Marlow Rd (EB right-turn to Glade Road)	0.65	1.9	17.49	0.25	0.3	8.20

Due to the geometry and data errors and lack of calibration, the base model for this junction in the Wider Network Assessment does not reflect existing conditions and, therefore, the results from the future year modelling are unreliable. The HA is therefore not in a position to confirm that the development traffic impact at this junction is not severe.

A4155 Little Marlow Road / Wycombe Road Junction

The junction of the A4155 Little Marlow Road with Wycombe Road is a priority T-junction with a ghost island right-turn facility, located approximately 50m west of Glade Road. The ghost island is 40m long and would therefore accommodate approximately 7 vehicles.

The geometry of the model has been checked and the peak hour flows from Wycombe Road to Little Marlow Road East and West have been switched in the PICADY file. The width of the A4155 is 5.7m rather than 6.7m. The Little Marlow Road right turn only accommodates 7 vehicles before it blocks, and this has not been reflected in the model which shows no blocking. The model shows there is a flare of 1 vehicle on Wycombe Road but there is not sufficient width, and an error code is shown in the model.

The flows have been checked and the 2023 modelled queues have been compared with the recorded queues in the queue survey and there are significant differences with queues on both Wycombe Road and Little Marlow Road especially in the AM peak hour.

	Wycombe Road		Little Marlow Road Right-Turn	
Times	Lane 1	Lane 2	Lane 1	Lane 2
08:00 - 08:05	1	3	6	0
08:05 - 08:10	1	6	0	1
08:10 - 08:15	0	7	0	2
08:15 - 08:20	0	5	8	1
08:20 - 08:25	0	6	10	0
08:25 - 08:30	0	6	0	0
08:30 - 08:35	1	9	0	1
08:35 - 08:40	0	12	4	1
08:40 - 08:45	1	9	0	1
08:45 - 08:50	0	7	0	0
08:50 - 08:55	1	2	0	1

Table 13: A4155 Little Marlow Road j/w Wycombe Road – Junctions 10 (PICADY) Results

Junction Arm	AM Peak			PM Peak		
	RFC	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)
2023 Observed Flows						
Wycombe Road (Left-turn Flare)	0.16	0.2	7.01	0.09	0.1	6.22
Wycombe Road (Right-turn Lane)	0.31	0.4	14.11	0.19	0.2	13.04
A4155 Little Marlow Rd (WB right-turn to Wycombe Road)	0.09	0.1	7.19	0.25	0.3	9.25

Due to the geometry errors and lack of calibration, the base model for this junction in the Wider Network Assessment does not reflect existing conditions and, therefore, the results from the future year modelling are unreliable. The HA is therefore not in a position to confirm that the development traffic impact is not severe.

A4155 Chapel Street / B482 Dean Street / A4155 Marlow Road Junction

The junction of the A4155 Chapel Street with B482 Dean Street and A4155 Marlow Road is a three-arm mini-roundabout junction, located approximately 275m west of Wycombe Road. Zebra Crossing facilities are located on the Dean Street arm 20m north of the junction and the Marlow Road 6m south-west of the junction.

The geometry has been checked and is correct, however, the zebra crossings have not been included in the model.

Paragraph 5.134 of the STA states:

> "*It should be noted that this junction is occasionally impacted by queueing which extend back from downstream junctions during peak periods and therefore does not always operate as a standalone junction."*

However, the survey shows continuous queueing in both peak hours of over 46 vehicles on the Chapel Street (eastern) arm while the modelled queue is 1 vehicle. On the Dean Street (north western) arm there is continuous queuing of 15 to 18 vehicles while the model shows 2 to 3 vehicles. It is clear that the model has not been calibrated and the modelling is therefore not considered representative of the operation of the junction. Once the model has been calibrated correctly consideration should be given to the interaction between this junction and the mini roundabout to the south west should there be queueing back along the link to that junction. It maybe that the two junctions need to be modelled in ARCADY as linked mini roundabouts with a queue limited link between them.

	AM Peak 0800-0900		PM Peak 1700-1800	
	Observed Queue Ave (Max)	Modelled Queue	Observed Queue Ave (Max)	Modelled Queue
A4155 Chapel St	46+ (48+)	1	48 (49)	0.7
A4155 Marlow Road	4 (7)	0.8	9 (19)	1
B482 Dean Street	18 (19)	2.4	15 (19+)	1.7

	Dean Street B482		Chapel street		A4155 Marlow Road	
Times	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
08:00 - 08:05	16+	0	45+	0	1	
08:05 - 08:10	18+	1	46+	1	5	
08:10 - 08:15	17+	1	45+	0	1	
08:15 - 08:20	17+	0	44+	0	5	
08:20 - 08:25	16+	0	47+	0	3	
08:25 - 08:30	17+	1	46+	0	6	
08:30 - 08:35	17+	1	47+	1	2	
08:35 - 08:40	17+	0	48+	0	2	
08:40 - 08:45	17+	0	46+	0	7	
08:45 - 08:50	17+	0	45+	0	6	
08:50 - 08:55	17+	0	46+	0	4	
08:55 - 09:00	17+	0	46+	0	2	
09:00 - 09:05	16+	0	45+	0	8	

	Dean Street B482		Chapel street		A4155 Marlow Road	
Times	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
17:00 - 17:05	9	0	44	1	11	
17:05 - 17:10	16	1	46+	1	1	
17:10 - 17:15	13	1	47+	0	5	
17:15 - 17:20	15	1	46+	0	9	
17:20 - 17:25	11	1	48+	0	5	
17:25 - 17:30	16+	0	47+	1	16	
17:30 - 17:35	16+	0	47+	1	8	
17:35 - 17:40	18+	1	48+	0	17	
17:40 - 17:45	18+	0	48+	1	3	
17:45 - 17:50	16+	0	47+	0	7	
17:50 - 17:55	10	0	48+	0	19	
17:55 - 18:00	16+	1	48+	1	7	

Table 14: A4155 Chapel Street j/w Marlow Road – Junctions 10 (ARCADY) Results

Junction Arm	AM Peak			PM Peak		
	RFC	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)
2023 Observed Flows						
A4155 Chapel Street	0.48	1.0	8.69	0.42	0.7	7.40
A4155 Marlow Road	0.43	0.8	6.53	0.50	1.0	7.47
B482 Dean Street	0.70	2.4	16.77	0.62	1.7	13.54

Due to the lack of calibration, the base model for this junction in the Wider Network Assessment does not reflect existing conditions and, therefore, the results from the future year modelling are unreliable. The HA is therefore not in a position to confirm that the development traffic impact at this junction is not severe.

A4155 Marlow Road / High Street / A4155 West Street Mini-Roundabout

The junction of the A4155 Marlow Road with High Street and A4155 West Street is a three-arm mini roundabout junction, located approximately 145m south-west of Dean Street.

The geometry has been checked and it was considered that the High Street arm is 7m not 7.3m although this is unlikely to have a significant effect on the modelling. This junction also experienced continuous queueing throughout the entire peak periods on all arms with observed average queues between 10 and 24 vehicles while the model shows queues of less than 1 vehicle on all arms. The modelling is therefore not considered representative of the operation of the junction.

	AM Peak 0800-0900		PM Peak 1700-1800	
	Observed Queue Ave (Max)	Modelled Queue	Observed Queue Ave (Max)	Modelled Queue
A4155 Marlow Road	14 (14)	0.7	13 (13)	0.5
High Street	24 (29+)	0.7	23 (27)	0.7
A4155 West Street	10 (10+)	0.5	10 (10+)	0.6

	Marlow Road		High Street W/B		West Street	
Times	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
08:00 - 08:05	14		29+		9+	
08:05 - 08:10	14		25		10+	
08:10 - 08:15	13		19		10+	
08:15 - 08:20	14		26		10+	
08:20 - 08:25	13		23		10+	
08:25 - 08:30	14		16		10+	
08:30 - 08:35	13		21		10+	
08:35 - 08:40	14		22		10+	
08:40 - 08:45	13		21		10+	
08:45 - 08:50	14		23		10+	
08:50 - 08:55	14		26		10+	
08:55 - 09:00	13		30+		9+	

Table 15: A4155 Marlow Road j/w High Street & West Street – Junctions 10 (ARCADY) Results

Junction Arm	AM Peak			PM Peak		
	RFC	Queue (PCUs)	Delay (s)	RFC	Queue (PCUs)	Delay (s)
2023 Observed Flows						
A4155 Marlow Road	0.41	0.7	6.57	0.34	0.5	5.68
High Street	0.41	0.7	6.89	0.41	0.7	6.53
A4155 West Street	0.34	0.5	5.60	0.37	0.6	6.04

Due to the lack of calibration, the base model for this junction in the Wider Network Assessment does not reflect existing conditions and, therefore, the results from the future year modelling are unreliable.

A4155 Marlow Road / Sheepridge Lane, Little Marlow Mini Roundabout

The junction of the A4155 Marlow Road with Sheepridge Lane is a three-arm mini roundabout located in Little Marlow approximately 2.3km east of Westhorpe Interchange.

There are some minor discrepancies between the geometry on the plan and the geometry in the model. The A4155 Marlow Road West approach half road width is coded as 3.6m in the model but measures and is printed as 3.5m on the plan. On the Marlow Road East approach, the approach half road width is coded as 3.5m but is measured and printed as 3.4m on the plan. Otherwise, the geometry is correct, and these discrepancies will have minimal impact.

The flow data in the spreadsheet has been checked and it appears that that the development flows from the A4155 / West Street junction (managed and unmanaged) have been added to the base flows of this junction for both the 2027 and 2034.

Whilst the model validates well against observed queues as shown in the table below, it was noted that the summary output table, Table 21 on page 65 of the STA, does not correspond at all with the output file in Appendix T which shows queues of 121 vehicles on Marlow Road West. It is assumed that this junction has been calibrated and the wrong output data has been attached. However, without the correct output data, it has not been possible to check the modelling.

	PM Peak 1700-1800	
	Observed Queue Ave (Max)	Modelled Queue
A4155 Marlow Road West	4 (9)	9
Sheepridge Lane	5 (6)	6
A4155 Marlow Road East	5 (9)	8

Table 21: A4155 Marlow Road j/w Sheepridge Lane – Junctions 10 (ARCADY) Results

Junction Arm	PM Peak		
	RFC	Queue (PCUs)	Delay (s)
2023 Observed Flows			
A4155 Marlow Road (W)	0.91	8.9	32.49
Sheepridge Lane	0.88	5.5	71.49
A4155 Marlow Road (E)	0.91	8.0	41.57

Summary of junction performance

	PM		
	Queue (PCU)	Delay (s)	RFC
2023 Existing Base			
1 - A4155 Marlow Rd (W)	121.0	509.98	1.24
2 - Sheepridge Lane	1.6	19.62	0.62
3 - A4155 Marlow Rd (E)	2.9	14.56	0.75

The STA only includes the PM results only as the initial impact assessment demonstrated that a further detailed assessment was not required in the AM.

The PM peak hour shows that the junction is approaching capacity in the 2027 Do Minimum Scenario and is at capacity in the 2034 Do Minimum Scenario. In the 2027 Do something Managed Scenario, the Sheepridge Lane arm increases by 28 vehicles from 8 to 36 and in the 2027 Unmanaged Scenario, it increases by 45 vehicles from 8 to 53 vehicles with an increase in waiting time on Sheepridge Lane of 5.5 minutes. In the 2034 Managed Scenario the queue on this arm increases by 35.5 vehicles and the waiting time increases by nearly 5 minutes. With the 2034 Unmanaged Scenario, it increases by 53.5 vehicles with an increase in waiting time of 8 minutes.

This is an unacceptable increase in queuing and delay and mitigation would therefore be required. However, no mitigation has been proposed and instead paragraph 5.144 of the STA states the following:

> "*It is not considered likely that the additional demand forecast by the Proposed Development will be significant in terms of the day-to-day operation of the Sheepridge Lane junction, and the forecast increase in queue lengths and delay on the junction approaches are not considered material relative to the baseline values. The forecast impact of all scenarios is therefore not considered severe in terms of the NPPF test.*"

Increases in waiting times that range from 5 to 8 minutes are considered significant and material increases, along with significant increases in queueing, all leading to an unacceptable impact on the

junction. Therefore suitable mitigation of the development traffic impact should be considered. However, the applicant has not considered any form of mitigation for the junction and therefore the HA considers that the development traffic impact at this junction remains severe.

Junction Arm	PM Peak		
	RFC	Queue (PCUs)	Delay (s)
2027 Base			
A4155 Marlow Road (W)	0.94	11.7	41.36
Sheepridge Lane	0.94	7.9	96.93
A4155 Marlow Road (E)	0.94	10.1	51.14
2034 Base			
A4155 Marlow Road (W)	0.99	19.9	64.90
Sheepridge Lane	1.04	14.6	160.54
A4155 Marlow Road (E)	0.98	15.8	74.02
Base 2027 + Managed Development			
A4155 Marlow Road (W)	0.96	13.9	48.37
Sheepridge Lane	1.20	36.2	312.38
A4155 Marlow Road (E)	0.95	11.8	58.55
Base 2034 + Managed Development			
A4155 Marlow Road (W)	1.00	24.3	76.51
Sheepridge Lane	1.30	50.1	454.95
A4155 Marlow Road (E)	0.99	17.3	79.80
Base 2027 + Unmanaged Development			
A4155 Marlow Road (W)	0.96	15.1	51.99
Sheepridge Lane	1.30	53.0	434.66
A4155 Marlow Road (E)	0.95	12.0	59.19
Base 2034 + Unmanaged Development			
A4155 Marlow Road (W)	1.01	26.6	82.26
Sheepridge Lane	1.40	69.3	639.59
A4155 Marlow Road (E)	0.99	17.7	80.99

A4155 Marlow Road / Blind Lane, Bourne End Junction

The junction of the A4155 Marlow Road with Blind Lane is a priority T-junction, located approximately 965m south-east of Sheepridge Lane in Bourne End.

The STA includes the PM results only as the previous assessment work concluded that a further detailed assessment in the AM peak hour was not required.

The geometry has been checked. The model shows there is a flare of 1 vehicle on Blind Lane but there is not sufficient width, and an error code is shown in the model.

The flow data in the spreadsheet has been checked and it appears that that the development flows from the A4155 / West Street junction (managed and unmanaged) have been added to the base flows of this junction for both the 2027 and 2034.

The junction does not calibrate well with the surveyed queues. Due to the geometry and data entry errors and lack of calibration, the base model for this junction in the Wider Network Assessment does not reflect existing conditions and, therefore, the results from the future year modelling are unreliable. The HA is therefore not in a position to confirm that the development traffic impact at this junction is not severe.

	PM Peak 1700-1800	
	Observed Queue Ave (Max)	Modelled Queue
Blind Lane	3 (6)	0.4
A4155 Marlow Road South	6 (11)	1.3

Junction Arm	PM Peak		
	RFC	Queue (PCUs)	Delay (s)
2023 Observed Flows			
Blind Lane (Left-turn flare)	0.23	0.3	10.65
Blind Lane (Right-turn lane)	0.30	0.4	26.29
A4155 Marlow Road (NB right-turn to Blind Lane)	0.43	1.3	8.65

	Blind Lane		Marlow Road Right-Turn	
Times	Lane 1	Lane 2	Lane 1	
17:00 - 17:05	4	1	7	
17:05 - 17:10	2	0	7	
17:10 - 17:15	5	1	8	
17:15 - 17:20	4	0	5	
17:20 - 17:25	2	0	2	
17:25 - 17:30	2	0	5	
17:30 - 17:35	3	0	5	
17:35 - 17:40	2	1	4	
17:40 - 17:45	2	0	3	
17:45 - 17:50	6	1	5	
17:50 - 17:55	1	0	11	
17:55 - 18:00	2	0	11	

A4155 The Parade / Cores End Road / Station Road, Bourne End Mini-Roundabout

The junction of the A4155 The Parade with A4155 Cores End Road and A4155 Station Road is a three-arm mini-roundabout junction, located approximately 410m south-east of Blind Lane in Bourne End.

The STA only includes the PM results only as the initial assessment work concluded that a further detailed assessment was not required in the AM peak. The geometry has been checked and appears correct.

The flow data in the spreadsheet has been checked and it appears that the development flows from the A4155 / West Street junction (managed and unmanaged) have been added to the base flows of this junction for both the 2027 and 2034.

It was noted that the summary output table, Table 24 on page 70 of the STA, does not correspond with the output file in Appendix V. It is assumed that the junction has been calibrated to queues on Station Road of 14 vehicles and the wrong output file has been attached. However, the survey shows queues of 14+ vehicles which could well be 31 vehicles as the modelling suggests. Without the correct output data, it has not been possible to check the modelling.

Summary of junction performance

	PM		
	Queue (PCU)	Delay (s)	RFC
	2023 Existing Base		
1 - A4155 The Parade	6.6	30.71	0.88
2 - A4155 Cores End Road	2.2	15.07	0.69
3 - A4155 Station Road	31.4	186.08	1.08

Table 24: A4155 The Parade j/w Cores End Road and Station Road– Junctions 10 (ARCADY) Results

Junction Arm	PM Peak		
	RFC	Queue (PCUs)	Delay (s)
	2023 Observed Flows		
A4155 The Parade	0.90	8.0	37.09
A4155 Cores End Road	0.97	12.7	90.15
A4155 Station Road	0.98	13.9	89.70

	The Parade		Cores End Road		Station Road	
Times	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
17:00 - 17:05	3		6		12+	
17:05 - 17:10	8		9		13	
17:10 - 17:15	1		6		14+	
17:15 - 17:20	5		7		6	
17:20 - 17:25	8		6		7	
17:25 - 17:30	3		5		14+	
17:30 - 17:35	3		9		14+	
17:35 - 17:40	1		14		14+	
17:40 - 17:45	1		4		11	
17:45 - 17:50	4		4		13+	
17:50 - 17:55	1		3		1	
17:55 - 18:00	3		4		8	

Junction Arm	PM Peak		
	RFC	Queue (PCUs)	Delay (s)
2023 Observed Flows			
A4155 The Parade	0.90	8.0	37.09
A4155 Cores End Road	0.97	12.7	90.15
A4155 Station Road	0.98	13.9	89.70
2027 Base			
A4155 The Parade	0.93	9.9	45.11
A4155 Cores End Road	1.01	17.6	117.34
A4155 Station Road	1.01	18.1	110.59
2034 Base			
A4155 The Parade	0.97	15.8	66.87
A4155 Cores End Road	1.08	29.2	177.32
A4155 Station Road	1.06	27.9	157.01

Junction Arm	PM Peak		
	RFC	Queue (PCUs)	Delay (s)
Base 2027 + Managed Development			
A4155 The Parade	1.02	26.1	98.80
A4155 Cores End Road	1.07	27.7	173.21
A4155 Station Road	1.00	17.5	108.03
Base 2034 + Managed Development			
A4155 The Parade	1.07	43.3	149.82
A4155 Cores End Road	1.12	39.4	249.63
A4155 Station Road	1.07	31.5	172.51
Base 2027 + Unmanaged Development			
A4155 The Parade	1.06	41.3	143.57
A4155 Cores End Road	1.08	30.4	188.80
A4155 Station Road	1.03	22.2	130.06
Base 2034 + Unmanaged Development			
A4155 The Parade	1.11	59.2	201.59
A4155 Cores End Road	1.13	42.5	277.46
A4155 Station Road	1.08	33.8	182.79
Base 2027 + Reasonable Unmanaged Development			
A4155 The Parade	1.05	35.1	125.86
A4155 Cores End Road	1.08	29.4	183.09
A4155 Station Road	1.03	21.6	127.11
Base 2034 + Reasonable Unmanaged Development			
A4155 The Parade	1.09	52.5	176.35
A4155 Cores End Road	1.13	41.8	270.26
A4155 Station Road	1.08	32.8	178.53

Notwithstanding the above, the modelling shows that the junction currently has exceeded practical capacity and will reach theoretical capacity in 2027. The development traffic will have a significant effect on The Parade arm of the junction with queues increasing by 16 vehicles in the 2027 Managed Scenario and by 31 vehicles, from 10 to 41 vehicles, in the 2027 Unmanaged Scenario. In the Reasonable Managed Scenario there was an increase of 25 vehicles on this arm.

In 2034, The Parade arm increases by 27.5 vehicles in the Managed Scenario, by 36.7 vehicles in the Reasonable Managed Scenario and by 43.4 vehicles in the Unmanaged Scenario. This is an unacceptable impact, and it is therefore likely that mitigation is required.

Wide Area Network Assessment Summary

The Wider Network Impact Briefing Note has been reviewed and the following can be concluded:

- **Handy Cross Roundabout** - The impact of the development proposals on the operation of the A4010 arm and the Marlow Hill arm of the Handy Cross Interchange is likely to be minimal and mitigation measures are therefore not required on these arms.

- **A404 / Marlow Road 'Bisham' Roundabout** - As this junction is not located in Buckinghamshire, National Highways will provide comments.

- **Wiltshire Road / A4155 Little Marlow Road Roundabout** - A review of this junction has been conducted as part of the VISSIM model review.

- **Newtown Road / A4155 Little Marlow Road / Bobmore Lane crossroads** – It has not been demonstrated that the proposed development will not have a severe impact on the junction.

- **Glade Road / A4155 Little Marlow Road priority T-junction** - It has not been demonstrated that the proposed development will not have a severe impact on the junction.

- **Wycombe Road / A4155 Little Marlow Road priority T-junction** - It has not been demonstrated that the proposed development will not have a severe impact on the junction.

- **A4155 Chapel Street / B482 Dean Street / A4155 Marlow Road mini roundabout** - It has not been demonstrated that the proposed development will not have a severe impact on the junction.

- **High Street / A4155 Marlow Road / A4155 West Street mini roundabout** - It has not been demonstrated that the proposed development will not have a severe impact on the junction.

- **Sheepridge Lane / A4155 Marlow Road mini roundabout (Bourne End)** – Although there are errors in the modelling and it has not been possible to check the modelling output, it appears that the proposed development has a material impact at the junction and appropriate mitigation should have been considered by the applicant. It has not been demonstrated that the proposed development will not have a severe impact on the junction.

- **Winchbottom Lane / A4155 Marlow Road priority T-junction -** It has not been demonstrated that the proposed development will not have a severe impact on the junction.

- **Blind Lane / A4155 Marlow Road priority T-junction -** It has not been demonstrated that the proposed development will not have a severe impact on the junction.

- **A4155 Cores End Road / The Parade / Station Road mini roundabout** - Although there are errors in the modelling and it has not been possible to check the modelling output, it appears that the proposed development has a material impact at the junction and mitigation is required. The applicant has not however proposed mitigation for this junction and therefore it has not been demonstrated that the development will not have a severe impact on this junction.

Summary and Conclusions

It is evident from the comments contained within this letter that there are issues relating to the internal layout, the Sustainable Travel Strategy, sustainable transport connectivity and traffic impact that remain unresolved and outstanding. As such the Highway Authority cannot conclude at this stage that the development is acceptable, well connected with safe and suitable access and would not lead to an unacceptable impact on road safety and network operation.

It is understood that the Local Planning Authority wish to determine this application as submitted, therefore the Highway Authority would recommend the refusal of planning permission for the following reasons:

Reason 1: Insufficient information has been submitted with the planning application to enable the highways, traffic and transportation implications of the proposed development to be fully assessed. From the information submitted, it is considered that the additional traffic likely to be generated by the proposal would adversely affect the safety and flow of users of the existing distributor road network, and lead to additional on-street parking, contrary to the National Planning Policy Framework, Policy DM33 (Managing Carbon Emissions: Transport and Energy Generation) of the Wycombe District Local Plan (adopted August 2019), Buckinghamshire Council Local Transport Plan 4 (adopted April 2016) and the Buckinghamshire Council Highways Development Management Guidance document (adopted July 2018).

Reason 2: The proposed development fails to make adequate provision to allow accessibility to the site by non-car modes of travel. The development will therefore be heavily reliant on the use of the private car contrary to sustainable transport policies as set in the National Planning Policy Framework, Policy DM33 (Managing Carbon Emissions: Transport and Energy Generation) of the Wycombe District Local Plan (adopted August 2019), Buckinghamshire Council Local Transport Plan 4 (adopted April 2016) and the Buckinghamshire Council Highways Development Management Guidance document (adopted July 2018).

Reason 3: The proposed layout would by virtue of its standard of design and layout give rise to a form of development which in the opinion of the Local Planning Authority is therefore contrary to the National Planning Policy Framework, Policy DM33 (Managing Carbon Emissions: Transport and Energy Generation) of the Wycombe District Local Plan (adopted August 2019), Buckinghamshire Council Local Transport Plan 4 (adopted April 2016) and the Buckinghamshire Council Highways Development Management Guidance document (adopted July 2018).

I trust that these comments have been of some assistance.

Yours sincerely

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