TOWN & COUNTRY PLANNING ACT 1990: SECTION 78

APPEAL BY ROBERT HITCHINS LTD

LAND AT OAKLEY FARM, CHELTENHAM

PINS Ref: APP/B1605/W/21/3273053
LPA Ref: O20/01069/OUT

PROOF OF EVIDENCE OF
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AUGUST 2021

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DOCUMENT CONTROL

Job No	H628		
File Reference	G:\workfiles\H628 OAKLEY FARM\REPORTS\H628-DOC05 PoE-Final 10-08-21.docx		
	Name	Date	Initials
Prepared By	G EVES	10 August 2021	
Checked By	G EVES	10 August 2021	

Issue	Date	Comments	Approved
Exchange	10 August 2021	-	G EVES

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APPENDICES

1. PERSONAL BACKGROUND, QUALIFICATIONS AND SCOPE OF EVIDENCE

1.1. My name is Graham Eves. I hold the Degree of Bachelor of Science in Civil Engineering. I am a Chartered Engineer, registered with the Engineering Council, and I am a corporate member of the Institution of Civil Engineers. I am also a member of the Chartered Institution of Highways and Transportation.

1.2. I am employed by PFA Consulting Ltd, a firm of consulting engineers specialising, inter alia, in flooding, drainage and other infrastructure-related matters associated with residential, commercial and industrial development schemes. I have been actively engaged in the construction industry generally and, in the development sector specifically, in UK for over 45 years. I have given evidence as an expert witness on flooding, drainage, highways, traffic, transportation and infrastructure-related matters at a variety of different tribunals including planning and compulsory purchase inquiries, magistrates, county, and crown courts.

1.3. I am involved with all aspects of the development industry and have been instructed to act for a wide-ranging variety of clients that includes housebuilders, land developers, commercial and retail operators, educational establishments, oil companies, government agencies and local authorities in addition to private companies and individuals.

1.4. I have been engaged by Robert Hitchins Ltd (RHL) to provide expert evidence at this appeal in respect of highways, traffic and transportation-related matters in respect of the appeal proposals, having advised the Applicant during the course of the application.

1.5. The evidence that I have prepared, and provide, for this appeal in this proof of evidence is true and has been prepared, and is given in accordance with, the guidance of my professional institutions and I confirm that the opinions expressed are my true and professional opinions irrespective of by whom I am instructed.

2. INTRODUCTION

2.1. The planning application (reference O20/01069/OUT) that has led to this appeal was appealed on the grounds of non-determination. The Council subsequently resolved that, had it been able to determine the application it would have been refused for seven reasons, of which two are directly related to highways and traffic issues. Details of the application are set out in the Planning Statement of Common Ground (SoCG).

2.2. The application was in outline with all matters, except vehicular access from Harp Hill, reserved for subsequent approval.

2.3. The application was supported by a Transport Assessment and a Residential Travel Plan informed by an agreed scoping note. A subsequent Transport Assessment Addendum and Technical Note was produced to provide further information to address concerns raised by Gloucestershire County Council (GCC) as local highway authority in their responses to the planning application.

2.4. **Table 2.1** sets out the timeline and brief description of the various responses to the planning application from the highway authority and PFA Consulting.

Table 2.1: Timeline of responses with respect to transport and highways

Date Issued	Reports / Responses	Description
2 July 2020	PFA Consulting's Transport Assessment (H628-DOC03 – dated 12 March 2020) and Residential Travel Plan (H628-DOC02 – dated 12 March 2020)	Submission with planning application
18 August 2020	GCC's first response	GCC recommended further information be provided and requested the submission of a Transport Assessment Addendum and Revised Residential Travel Plan
2 December 2020	Transport Assessment Addendum (H628-DOC04 - dated 13 November 2020) and Residential Travel Plan (Issue 2) (H628-DOC02 - dated 26 October 2020)	Reports provided to address GCC comments
10 February 2021	GCC's second response	GCC recommended deferral requesting further information
8 March 2021	PFA Consulting's Technical Note (H628-FN04 – dated 5 March 2021)	Technical Note provided to address GCC comments
1 April 2021	GCC's third response	GCC recommended refusal of the planning application

2.5. Having regard to the GCC responses to the planning application the Council has identified the following two putative reasons for refusal relating to highways and traffic issues:

Refusal Reason 3

The proposed development would, by virtue of design, layout and traffic generation result in a severe impact on the highway network and would fail to provide a safe and suitable access for all users, contrary to paragraphs 108, 109 and 110 of the National Planning Policy Framework, Policies INF1 and INF6 of the Joint Core Strategy (adopted December 2017), Policies LTP PD 0.3 and 0.4 of the Local Transport Plan (adopted March 2021), Policy CE10 of the Cotswold AONB Management Plan 2018-23 and Manual for Gloucestershire Streets (adopted July 2020).

Refusal Reason 7

Policies INF4, INF6 and INF7 of the Joint Core Strategy (JCS) (adopted 2017) (and Policy CI1 of the Cheltenham Plan) state that where infrastructure and services requirements are generated as a result of site proposals, new development will be served by appropriate on and/or off site infrastructure, services and other remedial measures. Financial contributions towards the provision of necessary infrastructure, services and other remedial measures will be sought through the s106, s278 or CIL mechanisms, as appropriate. The proposed development would lead to a requirement for necessary off-site highway improvement works (JCS Policies INF1 and INF6) and the implementation of the Residential Travel Plan.

No agreement has been completed to secure the provision of necessary highway improvements works and the funding and implementation of the Residential Travel Plan. The proposal fails therefore to meet the expectations of Policy INF1 and INF6 of the JCS (adopted 2017), Policy CI1 of the Cheltenham Plan (adopted 2020) and guidance on developer contributions set out in the NPPF.

2.6. Following detailed exchanges with GCC Highway Officers the Highway Authority's concerns and objections can be summarised as follows:

- B4075 Priors Road / Hales Road / Harp Hill / Hewlett Road Double Roundabout – severe impact
- B4075 Priors Road / Bouncers Lane Priority Junction – severe impact
- Blacksmiths Lane / Bouncers Lane Double Mini-Roundabout – severe impact
- A40 London Road / A40 Old Bath Road / B4075 Hales Road Traffic Signals – severe impact
- Site internal pedestrian links not compliant

2.7. My evidence therefore considers these objections and other highways, traffic and transportation-related concerns as set out in the various representations.

2.8. I have structured my evidence as follows. In Section 3 I describe the appeal site with specific reference to the highway conditions. In Section 4 I set out the Policy Framework against which the appeal needs to be determined with specific reference to the highways and transportation-related policies at national and local levels. In Section 5 I describe the proposed development and access arrangements. In Section 6 I address the highways, traffic and transportation-related objections which have been raised and set out my conclusions in Section 7 which also serves as a summary of my evidence.

3. THE APPEAL SITE

3.1. Details of the appeal site are set out in the Planning Statement of Common Ground. The location of the appeal site and its general context was identified in Figure 1.1 of the submitted Transport Assessment which for ease of reference I attach as **Appendix 1**.

3.2. The appeal site covers an area of approximately 14.9 hectares and is located approximately 3km east of Cheltenham Town Centre. It is bounded by Harp Hill to the south, as well as existing residential development to the west and north, and further residential development and Hewlett's Reservoir site to the east. Cheltenham Footpath 86, a Public Right of Way, routes along the western boundary connecting Harp Hill with the B4075 Priors Road, via the existing farm access track. The farm access track extends eastwards from the B4075 Priors Road along the northern extent of the appeal site.

3.3. Harp Hill borders the site to the south and is subject to a 30mph speed limit within the vicinity of the application site and street lighting is present. There is no provision for pedestrians along the majority of the site frontage along Harp Hill, although an informal path appears to have been formed along the verge on the southern side of the carriageway (opposite the site) in front of the existing residential properties. All of these existing properties have on-curtilage parking and no on-road parking has been observed on this part of Harp Hill.

3.4. Priors Road is located to the west of the application site and connects with Cheltenham Footpath 86, the key existing pedestrian access route to the application site. Priors Road routes between the double roundabout junction with Harp Hill, to the south, and Prestbury Road, to the north. Priors Road is a single carriageway with one lane in each direction, with the exception of the signalised junction with Redmarley Road ("the Sainsbury's junction"), where there are additional lanes for right and left turning traffic. Staggered Toucan crossing facilities are provided at the junction across Priors Road and Redmarley Road. Priors Road has street lighting, a footway on either side and is subject to a 30mph speed limit.

3.5. The existing B4075 Priors Road / Hales Road / Harp Hill / Hewlett Road double roundabout comprises two 3-arm roundabouts, one of which is a mini roundabout, located approximately 45m apart, measured from the central islands. There is one traffic lane on all approaches. There are footways on both sides of the carriageway with uncontrolled crossing points on all external approaches to the junction as well as across the centre section between the junctions, the majority of which have dropped kerbs and tactile paving

4. THE POLICY FRAMEWORK

4.1. The Policy Framework against which this appeal needs to be considered comprises the National Planning Policy Framework (NPPF) updated in July 2021, and the Development Plan.

4.2. Paragraph 113 of the NPPF requires all developments that generate significant amounts of movement to be supported by a Transport Statement or Transport Assessment.

4.3. In considering development proposals the NPPF at paragraph 110 identifies four main elements that the assessment of sites for plans or specific applications for development should take into account, which are whether:

> **a) appropriate opportunities to promote sustainable transport modes can be – or have been - taken up, given the type of development and its location;**
>
> **b) safe and suitable access to the site can be achieved for all users;**
>
> **c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and**
>
> **d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.**

4.4. Paragraph 111 states that:

> **"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."**

4.5. Paragraph 112 expands on this, stating that applications for development should:

> **a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;**
>
> **b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;**
>
> **c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;**
>
> **d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and**
>
> **e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.**

4.6. The Government's Planning Practice Guidance to the NPPF was launched as a web-based resource by DCLG on 6 March 2014. Guidance on Transport Assessments falls within the category 'Travel Plans, Transport Assessments and Statements in Decision. This category contains three sections:

i. Overarching Principles on Travel Plans, Transport Assessments and Statements
ii. Travel Plans
iii. Transport Assessments and Statements

4.7. The Guidance states that Travel Plans, Transport Assessments and Statements are all ways of assessing, and mitigating, the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements and sets out the requirements for a Transport Assessment. Amongst the requirements are:

- information about the Proposed Development, site layout, (particularly proposed transport access and layout across all modes of transport);
- an assessment of trips from all directly relevant committed development in the area (i.e. development that there is a reasonable degree of certainty will proceed within the next three years);
- data about current traffic flows on links and at junctions (including by different modes of transport and the volume and type of vehicles) within the study area and identification of critical links and junctions on the highways network;
- measures to improve the accessibility of the location (such as provision/enhancement of nearby footpath and cycle path linkages) where these are necessary to make the development acceptable in planning terms;
- measures to mitigate the residual impacts of development (such as improvements to the public transport network, introducing walking and cycling facilities, physical improvements to existing roads).

4.8. Assessments should be based on normal flow usage conditions (e.g. non-school holiday periods, typical weather conditions); traffic flow projections should be based on local traffic forecasts such as TEMPRO; and the timeframe for the assessment should be agreed with the local authority, except when development has an impact on the national transport network, for which the assessment period will be set out in the relevant Government policy.

4.9. This Guidance was adhered to in the preparation of the Transport Assessments which supported the planning application.

Joint Core Strategy for Gloucester, Cheltenham and Tewkesbury (JCS)

4.10. The JCS is part of the development plan for Gloucester City, Cheltenham Borough and Tewkesbury Borough. It sets out the long-term vision and objectives for the area together with strategic policies for shaping new development and locations for new development up to 2031.

4.11. Policy INF1 addresses the Transport Network and states:

> **"1. Developers should provide safe and accessible connections to the transport network to enable travel choice for residents and commuters. All proposals should ensure that:**
>
> **2. Planning permission will be granted only where the impact of development is not considered to be severe. Where severe impacts that are attributable to the development are considered likely, including as a consequence of cumulative impacts, they must be**

mitigated to the satisfaction of the Local Planning Authority in consultation with the Highway Authorities and in line with the Local Transport Plan

3. Developers will be required to assess the impact of proposals on the transport network through a Transport Assessment. The assessment will demonstrate the impact, including cumulative impacts, of the prospective development on:

i. Congestion on the transport network;

ii. Travel safety within the zone of influence of the development;

iii. Noise and / or atmospheric pollution within the zone of influence of the development"

4.12. Policy INF2 addresses infrastructure requirements and states:

"1. Where infrastructure requirements are generated as a result of individual site proposals and/or having regard to cumulative impact, new development will be served and supported by adequate and appropriate on-and/or off-site infrastructure and services. In identifying infrastructure requirements, development proposals will also demonstrate that full regard has been given, where appropriate, to implementing the requirements of the Joint Core Strategy Infrastructure Delivery Plan.

2. Where need for additional infrastructure and services and/or impacts on existing infrastructure and services is expected to arise, the local planning authority will seek to secure appropriate infrastructure which is necessary, directly related, and fairly and reasonably related to the scale and kind of the development proposal, including:

i. Broadband infrastructure
ii. Climate change mitigation/adaptation
iii. Community and cultural facilities and initiatives
iv. Early Years and Education
v. Health and well-being facilities and sport, recreation and leisure facilities
vi. The highway network, traffic management, sustainable transport and disabled people's access
vii. Protection of cultural and heritage assets and the potential for their enhancement
viii. Protection of environmental assets and the potential for their enhancement
ix. Provision of Green Infrastructure including open space
x. Public realm
xi. Safety and security including emergency services
xii. Flood risk management infrastructure

This list of potential infrastructure items is neither exhaustive, sequential nor are its elements mutually exclusive.

3. Priority for provision will be assessed both on a site-by-site basis and having regard to the mitigation of cumulative impact, together with implementation of the JCS Infrastructure Delivery Plan.

4. Planning permission will be granted only where sufficient provision has been made for infrastructure and services (together with their continued maintenance) to meet the needs of new development and/or which are required to mitigate the impact of new development upon existing communities. Infrastructure and services must be

provided in line with an agreed, phased timescale and in accordance with other requirements of this Plan."

Gloucestershire Local Transport Plan

4.13. Gloucestershire County Council (GCC) adopted its Local Transport Plan 2020-2041 (LTP) in March 2021. It sets out the issues and priorities for the county and identifies the approach to managing the increased transport demand which will go hand in hand with projected housing development and accelerated economic growth set out in the adopted Local Plans.

4.14. GCC recognises the urgency of reducing its CO2 impact and declared a 'climate emergency' in 2019. In addition, in 2020 GCC signed up to the UK100 Pledge, with a goal of net-zero by 2045. The LTP has developed new policy areas and strengthened its target to reduce per capita transport carbon emissions.

4.15. Gloucestershire's vision for transport is for:

"A resilient transport network that enables sustainable economic growth by providing travel choices for all, making Gloucestershire a better place to live, work and visit"

4.16. The LTP objectives set out in the LTP, are:

- **"Protect and enhance the natural and built environment**
- **Support sustainable economic growth**
- **Enable safe and affordable community connectivity**
- **Improve community health and wellbeing and promote equality of opportunity"**

4.17. The LTP includes policy documents which together provide the context of local transport delivery within the county. The Overarching Policy Document (PD0) - outlines the impacts of transport on carbon emissions and the environment, and the policies in place to solve these issues. Policies in PD0 include:

Policy LTP PD 0.3 – Maximising Investment in a Sustainable Transport Network –

4.18. GCC will work with partners to ensure the delivery of a financially sustainable transport network, through maximising opportunities for inward investment.

Policy LTP PD 0.4 – Integration with Land Use Planning and New Development –

4.19. GCC will work with local planning authorities and developers to develop a clear spatial strategy for Gloucestershire based on our long term sustainable transport and growth ambitions, which will deliver large scale development, designed and developed in a sustainable manner, ensuring that sustainable transport principles are embedded into the planning, design and future development of these strategic sites as a core fundamental feature from the outset. This will deliver a step change in sustainable land use planning, ensuring that all new development is located in places with high levels of sustainable transport accessibility and services, and reduces car dependency. GCC will support development that enables sustainable travel choices and will require that developers of new medium/large sites submit site master plans and ensure that transport considerations are integral to the design of schemes and contribute to making high quality places, in accordance with Gloucestershire's Climate Change Strategy and the emerging Spatial Strategy, Carbon Reduction Targets, NPPF and MfGS.

4.20. GCC declared a 'climate emergency' in 2019. In the light of this the LTP has developed new policy areas and strengthened its target to reduce per capita transport carbon emissions in order to move towards a more sustainable transport delivery model which seeks to optimise the existing

transport network to full capacity, recognising that they cannot build their way out of projected traffic growth. GCC's policies set out in its LTP is to prioritise sustainable travel modes over car users (LTP Figure PD6 (A) - Road User Hierarchy (Manual for Streets); it is not therefore the aim of policy to protect the convenience of commuting car drivers.

Manual for Gloucestershire Streets

4.21. The latest edition of Manual for Gloucestershire Streets (MfGS) was published in July 2020.

4.22. MfGS sets out guidance to developers, their consultants and design engineers, Local Planning Authorities, Parish and Town Councils and the public on how new development within Gloucestershire can contribute towards the provision of a safe and sustainable transport network within the County.

4.23. The main aim of MfGS set out in paragraph 1.2 is to:

> **"Reflect the advice given in national guidance, such as Manual for Streets, Manual for Streets 2, and the Design Manual for Roads and Bridges, as well as a wide range of best practice documents covering different aspects of the transport system."**

4.24. Paragraph 1.2 goes on to state that MfGS:

> **"Seeks to strike the right balance between allowing the designer the flexibility needed to create distinctive high quality developments, whilst also ensuring that layouts stand the test of time and are cost-effective to maintain."**

5. THE DEVELOPMENT

5.1. The development proposals comprise a residential development for up to 250 dwellings including open space and landscaping, vehicular access from Harp Hill, parking, and supporting infrastructure and utilities. It is in outline with all matters reserved for future approval.

5.2. An Illustrative Masterplan has been produced by RHL to demonstrate how the proposed development could be accommodated on the appeal site. A reduced scale version of the Illustrative Masterplan is reproduced at **Appendix 2**.

Vehicular Access

5.3. It is proposed that vehicular access to the proposed development will take the form of a priority junction from Harp Hill located generally centrally within the appeal site's frontage. PFA drawing no. H628/02 Rev E, which is reproduced at **Appendix 3**, shows a dimensioned layout of this access. The junction visibility splays are shown as 2.4m x 49m to the west and 2.4m x 44m to the east, which are in accordance with the recorded average 85th percentile speeds (ATC survey, September 2019).

5.4. The proposed site access road would have a 5.5m wide carriageway. This carriageway width is suitable for normal residential traffic (i.e. mainly cars and occasional larger vehicles such as delivery and refuse vehicles) and two-way movement of large vehicles at slow speed for the rare occasion that large vehicles need to pass each other. Pedestrian access to Harp Hill is not proposed via the main vehicular access junction; instead, a network of footpaths are proposed within the appeal site with linkages to the existing network at more beneficial and appropriate locations.

Pedestrian and Cyclist Access

5.5. The main pedestrian and cycle access to the appeal site is proposed via a new pedestrian / cycle link along the route of the existing farm access track from Priors Road, a key desire line to/from local facilities and the town centre. Pedestrian and cycle access will also be provided from Harp Hill to the south, including proposed pedestrian linkages at the eastern and western extents of the appeal site's Harp Hill frontage, and cycle linkages to Harp Hill via the proposed new site access junction.

5.6. The pedestrian / cycle link to Priors Road is the principal pedestrian / cyclist access to the appeal site. There is an existing signposted route for cycles from Priors Road to the town centre via Whaddon Road, Prestbury Road and Winchcombe Street. However, the existing cycle infrastructure on Priors Road does not presently provide a continuous route for cyclists between the appeal site and the existing signposted route to the town centre via Whaddon Road.

5.7. A preliminary arrangement of the proposed B4075 Priors Road pedestrian / cycle linkages is shown in PFA drawing no. H628/08 Rev A at **Appendix 4**. This shows the provision of a controlled Toucan crossing facility on Priors Road and a section of shared footway/cycleway on the western side of the carriageway to link with the existing signposted cycle route towards the town centre via Whaddon Road. It will provide the "missing connection" for cyclists crossing the existing toucan crossing on Priors Road at the "Sainsbury's" signal controlled junction, and provides direct pedestrian access to the existing bus stops on Priors Road and Whaddon Road.

5.8. There is currently no footway on the northern (site) side of Harp Hill, where Cheltenham Footpath 86 connects to Harp Hill at the south-western corner of the appeal site. Pedestrians must cross the carriageway to join the footway on the southern side of Harp Hill and there is no existing formal or informal crossing at this point. Improvements to this route form part of the

development proposals with the provision of a new section of footway on the northern side of Harp Hill, to provide a link between the proposed development, via Cheltenham Footpath 86 where it emerges onto Harp Hill, and the existing footway on the northern side of Harp Hill, which currently terminates approximately 70m to the west of the appeal site's western boundary. These proposed improvements to pedestrian linkages on Harp Hill are shown in PFA drawing no. H628/05 Rev A at **Appendix 5**. These will provide both for access for future residents of the site, future visitors to the open space as well as residents and visitors to existing properties on Harp Hill.

5.9. The internal site layout will be designed in a manner which facilitates walking and cycling, providing linkages to existing routes to allow good access for sustainable modes of transport. The Illustrative Masterplan incorporates a network of footpaths, including a route along the Harp Hill frontage within the site, which would provide a dedicated and safe alternative route along this section of Harp Hill, benefiting both new residents of the proposed development as well as existing residents and pedestrians using Harp Hill. The proposed footpath network would connect to the existing public right of way, Cheltenham Footpath 86, which routes along the western boundary of the site, and links to both the B4075 Priors Road and Harp Hill.

5.10. These arrangements will enable the proposed development to promote walking and cycling through the creation of safe, direct and attractive routes for pedestrians and cyclists. All of the streets within the appeal site will be designed to encourage low vehicle speeds and facilitate walking and cycling to access everyday services and facilities.

6. THE CASE FOR THE APPELLANT

6.1. Gloucestershire County Council, the Highway Authority acting in its role as Statutory Consultee has undertaken a full assessment of the planning application. Based on the appraisal of the development proposals the Highways Development Management Manager on behalf of the County Council, under Article 18 of the Town and Country Planning (Development Management Procedure)(England) Order, 2015 concluded it would have a severe impact and would conflict with the provision of safe and suitable access for all users, and recommended that the application be refused.

6.2. The above is reflected in the Council's putative reason for refusal 3, as follows:

Refusal Reason 3

> **"The proposed development would, by virtue of design, layout and traffic generation result in a severe impact on the highway network and would fail to provide a safe and suitable access for all users, contrary to paragraphs 108, 109 and 110 of the National Planning Policy Framework, Policies INF1 and INF6 of the Joint Core Strategy (adopted December 2017), Policies LTP PD 0.3 and 0.4 of the Local Transport Plan (adopted March 2021), Policy CE10 of the Cotswold AONB Management Plan 2018-23 and Manual for Gloucestershire Streets (adopted July 2020)."**

6.3. The concerns raised by the Highway Authority, which were set out in the Officers Report to Committee, are covered by the following issues:

i. Network Wide Impact
ii. Cycle Infrastructure
iii. Immediate Access off Harp Hill
iv. Travel Plan
v. Public Transport

6.4. As described in paragraph 2.6 above further discussions have been held with GCC highway officers to narrow down the extent of objections and I address each of the issues in turn.

Issue (i) - Network Wide Impact

6.5. The Highway Authority in their response to the application requested that an appraisal of the site be undertaken for a 2031 future year assessment reflecting the Joint Core Strategy (JCS) development timeframe.

6.6. The Transport Assessment which supported the planning application included an assessment of the traffic impact of the proposed development on the surrounding highway network for a 2024 assessment year. The 2024 assessment year was agreed with the Highway Authority as part of the scoping exercise (GCC's scoping response is included at Appendix B of the Transport Assessment) and was based on an assumption that the planning application would be submitted in 2019.

6.7. To address the Highway Authority's concern, model outputs from GCC's 2031 Central Severn Vale (CSV) SATURN strategic highway model, which included the JCS planned growth, was commissioned by PFA Consulting to provide traffic flows for the 2031 assessment year for the weekday AM and PM peak hours.

6.8. However following a review of the 2031 SATURN model outputs it was clear that its strategic nature meant that there were a number of anomalies with respect to traffic flows on the local network. This was in part due to the large zones within the model and how they were loaded

resulting in the model not able to capture local trip patterns with a number of links either showing an overestimation or an underestimation of traffic. It was therefore agreed with GCC that the observed data collected in 2019 provided a closer fit to the local network with TEMPRO growth applied to represent the 2031 base traffic forecasts, with the proposed development traffic added on top to represent the 2031 with development forecasts. This 'static' method of forecasting 2031 traffic flows does not allow for any redistribution of traffic on the surrounding highway network in order to avoid delays, unlike dynamic traffic models such as SATURN.

6.9. The "Tempro growth figures are calculated on the basis of the Development Plan growth assumptions for each area, but it is clear (from the evidence of Mr Tiley) that not all of the Development Plan allocations are going to come forward within the Plan period and there will be a "shortfall" in housing delivery during the Plan period of around 3,500 dwellings (approximately 1/3rd of the total requirement). This site is therefore, in effect, a replacement site and not an "additional" site within the Tempro projections. Accordingly, adding development traffic to unadjusted Tempro growth will significantly over-estimate future traffic conditions.

6.10. The unadjusted background growth to 2031 is approximately a 10% increase on the 2019 surveyed traffic figures and traffic flow diagrams representing the 2031 forecast traffic flows applying the unadjusted TEMPRO growth are provided at **Appendix 6**

6.11. However, if this Tempro growth is reduced by 1/3rd to reflect the shortfall in housing delivery, the "background" growth to 2031 reduces to about 6-7%. This reduced growth figure is similar to the growth figure identified in the original Transport Assessment and therefore, having regard to the shortfall in housing supply, the traffic flow forecasts contained in the original TA represent a "more probable" estimate of future 2031 base traffic flows. I therefore provide, as **Appendix 7** the 2031 forecast traffic flows based on adjusted Tempro growth.

6.12. In addition however, Gloucestershire's LTP, at para 3.5 dealing with congestion affects, identifies that there has been a reduction in the peak hour average weekday journey time (Figure PD4 (A) - Journey time reliability on strategic important routes during the am peak) with an overall speeding up of "minutes travelled per kilometre". It also shows that the number of peak hour vehicle journeys, reported in the latest LTP monitoring report, is decreasing (at an average of 0.7% and 0.05% in the AM and PM peaks respectively in 2019), suggesting commuters are either varying their travel times to avoid peak congestion or travelling by alternative modes to the car. These reductions in peak hour vehicle journeys are shown in Figures PI 2.1 & PI 2.2 of the latest LTP Implementation Report 2019-20. At present this trend is not reflected in the Tempro forecasts.

6.13. Furthermore these future forecasts do not reflect the long-term implications that the Covid pandemic may have on travel and work patterns, nor the effect of more radical innovations such as the recent trialling of an "e-scooter" scheme in Cheltenham which may have effects on personal transport choices.

6.14. I accept that these additional factors are unknowns, but there is a widespread view that, because many people have become adjusted to "working from home", peak hour commuting may remain depressed and "flexible working", and increased use of video technology, will become more common. Accordingly even the adjusted 2031, with development, traffic predictions set out in **Appendix 7** may therefore be a (perhaps significant) over-estimate of future peak hour traffic and even the analysis in the original TA may be an over-estimate of future traffic flows as it does not take into account these additional factors

Development Traffic

6.15. The proposed development (comprising up to 250 dwellings) is predicted to result in a total of 124 vehicle movements (two-way) onto the highway network in both the AM and PM peak hours. This level of traffic has been agreed with GCC having regard to outputs from the TRICS database. Whilst this database includes surveys of some (but not all) developments which benefit from Travel Plans the efficacy of any plans which are operative is not known. The present proposal includes a Travel Plan with remedial measures to be implemented if targets are not achieved and therefore, in my opinion this scenario is again likely to over-estimate the impact on the network. Nonetheless, in order to have an agreed "starting position" with GCC highways, the analysis below does not take into account the above over-estimate considerations.

6.16. The agreed distribution and assignment of the proposed development traffic on the surrounding highway network is represented in the traffic flow diagrams at **Appendix 8** for the weekday AM and PM peak hour time periods.

6.17. To assess the traffic impact of the proposed development on the operation of the surrounding highway network, detailed capacity analysis was undertaken of key junctions in the vicinity of the appeal site during the weekday AM and PM peak hour periods when the demand for travel is greatest. The basis for these assessments was from traffic counts undertaken in September 2019 with future forecasts estimated applying unadjusted TEMPRO traffic growth and allowing for committed development.

6.18. The Highway Authority in its response to the application considered that the additional traffic from the proposed development would result in unmitigated harm at the following junctions:

- Priors Road/Harp Hill/Hales Road/Hewlett Road junction
- Priors Road / Bouncers Lane
- Prestbury Road / Tatchley Lane / Deep Street / Blacksmiths Lane / Bouncers Lane
- A40 London Road / Old Bath Road / Hales Road

6.19. Junction capacity assessments of the above junctions using both the unadjusted and adjusted (to reflect the housing shortfall) 2031 forecast traffic flows (with and without the proposed development) are therefore provided below.

Priors Road/Harp Hill/Hales Road/Hewlett Road junction.

6.20. The Transport Assessment identified the need for some minor widening of the Harp Hill and Hewlett Road approaches to the Priors Road / Harp Hill / Hales Road / Hewlett Road junction to help mitigate the impact of the proposed development traffic during the weekday AM and PM peak hours. The Highway Authority in response expressed caution on the over reliance of the Junctions 9 modelling and in particular the benefits shown from the proposed mitigation scheme, citing that the proposed widening would unlikely change a driver's approach position in any meaningful manner.

6.21. Following discussions with GCC, mitigation in the form of widening of the Harp Hill approach to the junction to increase operational capacity has been put forward. PFA drawing no. H628/04 Rev C reproduced at **Appendix 9** shows the potential widening of the Harp Hill approach to the junction which will enable two cars to align side by side at the stop line, as shown by the tracking detail. The original improvement plan included in the Transport Assessment also included some minor widening on Hewlett Road; based on the capacity modelling subsequently undertaken it is not considered that widening to Hewlett Road is needed to mitigate the proposed development.

6.22. GCC requested that the proposed improvement be the subject of a Stage 1 Road Safety Audit which has now been provided. A copy of the audit undertaken by Fenley is reproduced at **Appendix 10**.

6.23. The existing junction layout has been used to assess 2031 without development, and an improved junction layout with the capacity improvements to Harp Hill used for the 2031 with development scenario.

6.24. **Tables 6.1 and 6.2** below provide a summary of the results of the Junctions 9 assessment of the B4075 Priors Road / Hales Road / Harp Hill / Hewlett Road double roundabout for the AM and PM peak hours respectively.

Table 6.1: B4075 Priors Road / Hales Road / Harp Hill / Hewlett Road Double Roundabout Junctions 9 Results – 2031 AM Peak Hour

Scenario	Arm	Max Queue (Veh)	Max Delay (sec/Veh)	Max RFC
2031 Forecast Year	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	3.0	11.40	0.75
	B4075 Hales Road	2.2	12.47	0.69
	Hewlett Road	0.7	6.27	0.40
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	37.2	144.19	1.01
	Harp Hill	10.2	121.39	0.95
	Internal (EB)	1.4	7.26	0.58
2031 Forecast Year + Proposed Development	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	3.1	11.74	0.76
	B4075 Hales Road	2.3	12.91	0.70
	Hewlett Road	0.7	6.40	0.41
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	49.4	186.28	1.03
	Harp Hill	58.5	549.74	1.16
	Internal (EB)	1.5	7.55	0.60
2031 Forecast Year + Proposed Development with capacity improvements to Harp Hill	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	3.6	13.13	0.79
	B4075 Hales Road	2.3	13.24	0.70
	Hewlett Road	0.7	6.40	0.41
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	49.4	186.27	1.03
	Harp Hill	4.0	37.47	0.81
	Internal (EB)	1.5	7.73	0.60
2031 Forecast Year (Adjusted)	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	3	11	0.73
	B4075 Hales Road	2	11	0.66
	Hewlett Road	1	6	0.38
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	20	84	0.97
	Harp Hill	7	80	0.89
	Internal (EB)	1	7	0.57

2031 Forecast Year + Proposed Development (Adjusted)	B4075 Hales Road / Hewlett Road Roundabout (west roundabout)			
	Internal (WB)	3	11	0.75
	B4075 Hales Road	2	12	0.67
	Hewlett Road	1	6	0.39
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	27	110	0.99
	Harp Hill	43	403	1.11
	Internal (EB)	2	8	0.59
Adjusted 2031 Forecast Year + Proposed Development with capacity improvements to Harp Hill)	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	3	12	0.77
	B4075 Hales Road	2	12	0.67
	Hewlett Road	1	6	0.39
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	27	110	0.99
	Harp Hill	3	32	0.78
	Internal (EB)	1	7	0.58

Table 6.2: B4075 Priors Road / Hales Road / Harp Hill / Hewlett Road Double Roundabout Junctions 9 Results – 2031 PM Peak Hour

Scenario	Arm	Max Queue (Veh)	Max Delay (sec/Veh)	Max RFC
2031 Forecast Year	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	1.0	5.55	0.50
	B4075 Hales Road	2.2	10.89	0.69
	Hewlett Road	1.5	9.83	0.60
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	2.2	12.18	0.69
	Harp Hill	1.8	21.11	0.64
	Internal (EB)	4.1	15.29	0.81
2031 Forecast Year + Proposed Development	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	1.1	5.72	0.52
	B4075 Hales Road	12.5	61.58	0.97
	Hewlett Road	8.1	56.12	0.93
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	2.7	14.56	0.73
	Harp Hill	2.4	26.16	0.71
	Internal (EB)	5.0	18.27	0.84
2031 Forecast Year + Proposed Development with capacity improvements to Harp Hill	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	1.1	5.70	0.52
	B4075 Hales Road	12.6	62.08	0.97
	Hewlett Road	8.2	56.40	0.93
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	2.7	14.56	0.73
	Harp Hill	1.1	12.04	0.53
	Internal (EB)	5.0	18.26	0.84

Scenario	Arm	Max Queue (Veh)	Max Delay (sec/Veh)	Max RFC
2031 Forecast Year (Adjusted)	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	1	5	0.48
	B4075 Hales Road	2	10	0.66
	Hewlett Road	1	9	0.57
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	2	11	0.66
	Harp Hill	2	19	0.60
	Internal (EB)	4	14	0.79
2031 Forecast Year + Proposed Development (Adjusted)	B4075 Hales Road / Hewlett Road Roundabout (west roundabout)			
	Internal (WB)	1	6	0.50
	B4075 Hales Road	8	40	0.91
	Hewlett Road	5	37	0.86
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	5	13	0.70
	Harp Hill	2	23	0.67
	Internal (EB)	5	17	0.83
Adjusted 2031 Forecast Year + Proposed Development with capacity improvements to Harp Hill)	**B4075 Hales Road / Hewlett Road Roundabout (west roundabout)**			
	Internal (WB)	1	5	0.50
	B4075 Hales Road	2	11	0.69
	Hewlett Road	1	10	0.59
	B4075 Priors Road / Harp Hill Mini Roundabout (east roundabout)			
	B4075 Priors Road	2	13	0.71
	Harp Hill	1	11	0.50
	Internal (EB)	4	16	0.82

6.25. The assessment of mini roundabouts and linked double roundabouts in Junctions 9 is recognised as being difficult to model as the nature of such junctions differ from place to place, however, the results show that, without the development, in the adjusted AM peak the Priors Road approach to the junction will already be approaching capacity with a queue of 20 vehicles and delays of over a minute on both the Priors Road and Harp Hill approaches to the junction.

6.26. With the development and the proposed mitigation the delays on the Harp Hill approach reduce significantly and, whilst there is a small increase in queueing (7 vehicles) on Priors Road approach the improvement scheme mitigates the impact of the development traffic on the Harp Hill approach to the junction. The level of additional queuing (7 vehicles), on one arm of the junction and during one short period of the day, ais not, in my opinion, 'severe' in the context of NPPF paragraph 111. In the event that future traffic does not increase in line with the forecasts (for the reasons explained in paragraph 6.12 – 6.14 above, the queues will be reduced further supporting my contention that this is not a severe impact.

Priors Road/Bouncers Lane

6.27. **Tables 6.3 and 6.4** set out the Junctions 9 results for each of the 2031 assessment scenarios during the AM peak and PM peak hours for the B4075 Priors Road / Bouncers Lane Priority Junction.

Table 6.3: B4075 Priors Road / Bouncers Lane Priority Junction - Junctions 9 Results – 2031 AM Peak Hour

Scenario	Movement	Max Queue (Veh)	Max Delay (sec/Veh)	Max RFC
2031 Forecast Year	**B4075 Priors Road / Bouncers Lane Priority Junction (South)**			
	Bouncers Lane to B4075 Priors Road (South)	0.1	7.41	0.12
	B4075 Priors Road (South) to B4075 Priors Road (North) / Bouncers Lane	2.8	25.24	0.73
	B4075 Priors Road / Bouncers Lane Priority Junction (North)			
	Bouncers Lane to B4075 Priors Road (North)	0.1	11.69	0.06
	B4075 Priors Road / Bouncers Lane Priority Junction (East)			
	Internal to Bouncers Lane (North)	0.1	6.61	0.05
	Bouncers Lane (North) to Bouncers Lane (South) / Internal	0.1	7.05	0.04
2031 Forecast Year + Proposed Development	**B4075 Priors Road / Bouncers Lane Priority Junction (South)**			
	Bouncers Lane to B4075 Priors Road (South)	0.1	7.44	0.12
	B4075 Priors Road (South) to B4075 Priors Road (North) / Bouncers Lane	3.8	29.99	0.78
	B4075 Priors Road / Bouncers Lane Priority Junction (North)			
	Bouncers Lane to B4075 Priors Road (North)	0.1	11.80	0.06
	B4075 Priors Road / Bouncers Lane Priority Junction (East)			
	Internal to Bouncers Lane (North)	0.1	6.69	0.05
	Bouncers Lane (North) to Bouncers Lane (South) / Internal	0.1	7.13	0.05
2031 Forecast Year (Adjusted)	**B4075 Priors Road / Bouncers Lane Priority Junction (South)**			
	Bouncers Lane to B4075 Priors Road (South)	0	8	0.13
	B4075 Priors Road (South) to B4075 Priors Road (North) / Bouncers Lane	3	23	0.70
	B4075 Priors Road / Bouncers Lane Priority Junction (North)			
	Bouncers Lane to B4075 Priors Road (North)	0	11	0.06
	B4075 Priors Road / Bouncers Lane Priority Junction (East)			
	Internal to Bouncers Lane (North)	0	7	0.05
	Bouncers Lane (North) to Bouncers Lane (South) / Internal	0	7	0.04
2031 Forecast Year + Proposed Development (Adjusted)	**B4075 Priors Road / Bouncers Lane Priority Junction (South)**			
	Bouncers Lane to B4075 Priors Road (South)	0	8	0.13
	B4075 Priors Road (South) to B4075 Priors Road (North) / Bouncers Lane	3	26	0.75
	B4075 Priors Road / Bouncers Lane Priority Junction (North)			
	Bouncers Lane to B4075 Priors Road (North)	0	11	0.06
	B4075 Priors Road / Bouncers Lane Priority Junction (East)			
	Internal to Bouncers Lane (North)	0	7	0.05
	Bouncers Lane (North) to Bouncers Lane (South) / Internal	0	7	0.04

Table 6.4: B4075 Priors Road / Bouncers Lane Priority Junction Junctions 9 Results – 2031 PM Peak Hour

Scenario	Movement	Max Queue (Veh)	Max Delay (sec/Veh)	Max RFC
2031 Forecast Year	**B4075 Priors Road / Bouncers Lane Priority Junction (South)**			
	Bouncers Lane to Priors Road (South)	0.1	6.64	0.11
	Priors Road (South) to Priors Road (North) / Bouncers Lane	33.8	140.55	1.01
	B4075 Priors Road / Bouncers Lane Priority Junction (North)			
	Bouncers Lane to Priors Road (North)	0.0	9.87	0.01
	B4075 Priors Road / Bouncers Lane Priority Junction (East)			
	Internal to Bouncers Lane (North)	0.1	7.61	0.10
	Bouncers Lane (North) to Bouncers Lane (South) / Internal	0.0	7.34	0.01
2031 Forecast Year + Proposed Development	**B4075 Priors Road / Bouncers Lane Priority Junction (South)**			
	Bouncers Lane to Priors Road (South)	0.1	6.73	0.11
	Priors Road (South) to Priors Road (North) / Bouncers Lane	48.2	196.84	1.03
	B4075 Priors Road / Bouncers Lane Priority Junction (North)			
	Bouncers Lane to Priors Road (North)	0.0	10.06	0.01
	B4075 Priors Road / Bouncers Lane Priority Junction (East)			
	Internal to Bouncers Lane (North)	0.1	7.65	0.10
	Bouncers Lane (North) to Bouncers Lane (South) / Internal	0.0	7.37	0.01
2031 Forecast Year (Adjusted)	**B4075 Priors Road / Bouncers Lane Priority Junction (South)**			
	Bouncers Lane to Priors Road (South)	0	7	0.11
	Priors Road (South) to Priors Road (North) / Bouncers Lane	21	96	0.97
	B4075 Priors Road / Bouncers Lane Priority Junction (North)			
	Bouncers Lane to Priors Road (North)	0	10	0.01
	B4075 Priors Road / Bouncers Lane Priority Junction (East)			
	Internal to Bouncers Lane (North)	0.01	8	0.10
	Bouncers Lane (North) to Bouncers Lane (South) / Internal	0	7	0.01
2031 Forecast Year + Proposed Development (Adjusted)	**B4075 Priors Road / Bouncers Lane Priority Junction (South)**			
	Bouncers Lane to Priors Road (South)	0	7	0.11
	Priors Road (South) to Priors Road (North) / Bouncers Lane	30	129	1.00
	B4075 Priors Road / Bouncers Lane Priority Junction (North)			
	Bouncers Lane to Priors Road (North)	0	10	0.01
	B4075 Priors Road / Bouncers Lane Priority Junction (East)			
	Internal to Bouncers Lane (North)	0	8	0.10
	Bouncers Lane (North) to Bouncers Lane (South) / Internal	0	7	0.01

6.28. The results show that the junction would operate within capacity in the AM peak hour for all scenarios. In the PM peak hour, with the adjusted growth, and the development, the results show the junction reaches capacity in the 2031 forecast year with queuing increasing for right turners from B4075 Priors Road South to Bouncers Lane from 21 vehicles to 30 vehicles As available storage in the right turn lane is only about 7-8 vehicles this is already being exceeded in the forecast year both with and without development with existing right turners blocking through

traffic and giving rise to the queues identified in the analysis. The development only adds 9 vehicles to this right turning movement in the PM peak. The static nature of the modelling has resulted in the queuing and delay being exaggerated and, in reality, drivers will have the option to re-route and travel to Prestbury Road to avoid any queue on Priors Road turning right into Bouncers Lane.

6.29. Furthermore not only is any increase in queues and delays small, as can be seen in the development traffic flow diagrams at **Appendix 6** the overall additional traffic from the proposed development passing through this junction in the AM and PM peak hours is small, as can be seen from **Table 6.5** below.

Table 6.5: Development Traffic Proportion

Junction	Adjusted 2031 traffic passing through junction	Development Traffic	% Development Traffic
AM Peak Hour	1,521	34	2.24%
PM Peak Hour	1,555	34	2.19%

6.30. An analysis of the capacity assessment results identified the main movement where the development traffic was found to have the greatest impact; the right turn into Bouncers Lane from Priors Road in the PM peak.

6.31. **Table 6.6** shows the max queues, max delay and RFC values both with and without the proposed development for this critical movement along with the development traffic flows.

Table 6.6: Development Impact for Critical Movements

Junction	Critical Movement	Adjusted 2031 Without Development			Adjusted 2031 With Development			
		Max Queue	Max Delay (secs)	RFC	Development Traffic Flows	Max Queue	Max Delay (secs)	RFC
Priors Road / Bouncers Lane	Right Turn into Bouncers Lane (PM Peak)	21	96	0.97	9	30	129	1.00

6.32. From the above analysis I do not consider that the additional 9 vehicles would have a 'severe' impact on the operation of the junction in the context of NPPF paragraph 111.

6.33. Even if a judgement is made that a trigger for 'severe' is reached, paragraph 111 of the NPPF does not require that permission must be refused but is simply a test for whether the development could be refused on highways grounds. In such circumstances the degree of harm is balanced against, and with, other transport and planning benefits and disbenefits.

Prestbury Road/Tatchley Lane/Deep Street/Black Smiths Lane/ Bouncers Lane junction

6.34. **Tables 6.7 and 6.8** set out the Junctions 9 results for each of the 2031 assessment scenarios during the AM peak and PM peak hours for the B4632 Prestbury Road / B4075 Tatchley Lane / Deep Street / Blacksmiths Lane / Bouncers Lane double mini-roundabout.

Table 6.7: B4632 Prestbury Road / B4075 Tatchley Lane / Deep Street / Blacksmiths Lane / Bouncers Lane Double Mini-Roundabout Junctions 9 Results – 2031 AM Peak Hour

Scenario	Arm	Max Queue (Veh)	Max Delay (sec/Veh)	Max RFC
2031 Forecast Year	**West Mini Roundabout**			
	Westbound (Internal)	0.0	15.20	0.84
	B4632 Prestbury Rd	1.5	11.97	0.60
	B4075 Tatchley Ln	1.3	15.67	0.58
	East Mini Roundabout			
	Deep Street	2.4	9.49	0.71
	Blacksmiths Lane	0.0	21.00	0.02
	Bouncers Lane	19.5	186.48	1.00
	Eastbound (Internal)	0.0	3.97	0.26
2031 Forecast Year + Proposed Development	**West Mini Roundabout**			
	Westbound (Internal)	0.0	16.06	0.86
	B4632 Prestbury Rd	1.5	12.33	0.60
	B4075 Tatchley Ln	1.4	16.01	0.59
	East Mini Roundabout			
	Deep Street	2.4	9.54	0.71
	Blacksmiths Lane	0.0	21.15	0.02
	Bouncers Lane	35.1	310.78	1.06
	Eastbound (Internal)	0.0	3.96	0.26
2031 Forecast Year (Adjusted)	**West Mini Roundabout**			
	Westbound (Internal)	0	13	0.81
	B4632 Prestbury Rd	2	11	0.56
	B4075 Tatchley Ln	1	15	0.54
	East Mini Roundabout			
	Deep Street	2	9	0.67
	Blacksmiths Lane	0	18	0.02
	Bouncers Lane	9	88	0.92
	Eastbound (Internal)	0	4	0.24
2031 Forecast Year + Proposed Development (Adjusted)	**West Mini Roundabout**			
	Westbound (Internal)	0	14	0.82
	B4632 Prestbury Rd	1	11	0.57
	B4075 Tatchley Ln	1	15	0.55
	East Mini Roundabout			
	Deep Street	2	9	0.67
	Blacksmiths Lane	0	19	0.02
	Bouncers Lane	15	142	0.98
	Eastbound (Internal)	0	4	0.24

Table 6.8: B4632 Prestbury Road / B4075 Tatchley Lane / Deep Street / Blacksmiths Lane / Bouncers Lane Double Mini-Roundabout Junctions 9 Results – 2031 PM Peak Hour

Scenario	Arm	Max Queue (Veh)	Max Delay (sec/Veh)	Max RFC
2031 Forecast Year	**West Mini Roundabout**			
	Westbound (Internal)	0.0	7.63	0.60
	B4632 Prestbury Rd	1.2	10.29	0.55
	B4075 Tatchley Ln	12.1	93.72	0.95
	East Mini Roundabout			
	Deep Street	0.7	4.93	0.42
	Blacksmiths Lane	0.0	9.60	0.03
	Bouncers Lane	10.9	71.30	0.93
	Eastbound (Internal)	0.0	5.12	0.37
2031 Forecast Year + Proposed Development	**West Mini Roundabout**			
	Westbound (Internal)	0.0	7.98	0.62
	B4632 Prestbury Rd	1.3	10.42	0.56
	B4075 Tatchley Ln	16.8	124.75	0.98
	East Mini Roundabout			
	Deep Street	0.7	4.96	0.43
	Blacksmiths Lane	0.0	9.68	0.03
	Bouncers Lane	13.5	86.96	0.95
	Eastbound (Internal)	0.0	5.12	0.37
2031 Forecast Year (Adjusted)	**West Mini Roundabout**			
	Westbound (Internal)	0	7	0.57
	B4632 Prestbury Rd	1	10	0.53
	B4075 Tatchley Ln	7	60	0.90
	East Mini Roundabout			
	Deep Street	1	5	0.40
	Blacksmiths Lane	0	9	0.03
	Bouncers Lane	7	44	0.88
	Eastbound (Internal)	0	5	0.35
2031 Forecast Year + Proposed Development (Adjusted)	**West Mini Roundabout**			
	Westbound (Internal)	0	7	0.59
	B4632 Prestbury Rd	1	10	0.53
	B4075 Tatchley Ln	10	75	0.92
	East Mini Roundabout			
	Deep Street	1	5	0.41
	Blacksmiths Lane	0	9	0.03
	Bouncers Lane	8	51	0.90
	Eastbound (Internal)	0	5	0.35

6.35. The results show that, using the adjusted traffic forecast flows, the junction operates with an RFC of less than 1 in both peak periods.

6.36. Furthermore, as can be seen in the development traffic flow diagrams at **Appendix 6** the additional traffic from the proposed development passing through this junction in the AM and PM peak hours is small, as can be seen from **Table 6.9** below.

Table 6.9: Development Traffic Proportion

Junction	Adjusted 2031 traffic passing through junction	Development Traffic	% Development Traffic
AM Peak Hour	2,003	30	1.50%
PM Peak Hour	2,000	30	1.50%

6.37. An analysis of the capacity assessment results identified the main movement where the development traffic was found to have the greatest impact; the Bouncers Lane approach to the Prestbury Road / Tatchley Lane / Deep Street / Blacksmiths Lane / Bouncers Lane roundabout in the AM peak.

6.38. **Table 6.10** shows the max queues, max delay and RFC values both with and without the proposed development for this critical movement along with the development traffic flows.

Table 6.10: Development Impact for Critical Movement

Junction	Critical Movement	Adjusted 2031 Without Development			Adjusted 2031 With Development			
		Max Queue	Max Delay (secs)	RFC	Development Traffic Flows	Max Queue	Max Delay (secs)	RFC
Prestbury Road / Tatchley Lane / Deep Street / Blacksmiths Lane / Bouncers Lane	Bouncers Lane (AM Peak)	9	88	0.92	23	15	142	0.98

6.39. Again the static modelling will have exaggerated the additional queuing and delay for this approach as traffic would re-route via the alternative route via Priors Road and Prestbury Road, particularly when considering that the modelling has shown the Priors Road / Prestbury Road junction to be operating within its capacity in 2031.

6.40. Accordingly, from the above analysis, I do not consider that the additional 23 vehicles on Bouncers Lane in the AM peak, adding only 6 vehicles to the queue, would have a 'severe' impact in the context of NPPF paragraph 111 particularly if future traffic does not increase in line with the forecasts (for the reasons explained in paragraph 6.12 – 6.14 above) again this is an impact which needs to be balanced against all other benefits and disbenefits.

A40 London Road / Old Bath Road / Hales Road

6.41. The LinSig model of the A40 London Road / A40 Old Bath Road / B4075 Hales Road Traffic Signals has been developed using the junction controller specification provided by GCC.

6.42. **Tables 6.11 and 6.12** set out the LinSig results for each of the assessment scenarios during the AM and PM peak hours respectively.

Table 6.11: A40 London Road / A40 Old Bath Road / B4075 Hales Road Traffic Signals LinSig Results – 2031 AM Peak Hour

Scenario	Arm	Mean Max Queue (PCU)	Average Delay (sec/PCU)	Deg Sat (%)
2031 Forecast Year	A40 London Road	61.4	265.7	110.8%
	A40 Old Bath Road	67.0	252.2	110.5%
	A435 London Road	44.7	234.0	108.0%
	B4075 Hales Road	46.6	255.2	109.2%
2031 Forecast Year + Proposed Development	A40 London Road	69.4	311.5	113.8%
	A40 Old Bath Road	72.5	275.2	112.1%
	A435 London Road	52.4	289.1	111.7%
	B4075 Hales Road	61.8	330.1	114.4%
2031 Forecast Year (Adjusted)	A40 London Road	46	190	105.5%
	A40 Old Bath Road	51	184	105.8%
	A435 London Road	33	166	103.1%
	B4075 Hales Road	38	203	105.6%
2031 Forecast Year + Proposed Development (Adjusted)	A40 London Road	53	233	108.5%
	A40 Old Bath Road	63	242	109.7%
	A435 London Road	40	216	106.7%
	B4075 Hales Road	45	228	107.5%

Table 6.12: A40 London Road / A40 Old Bath Road / B4075 Hales Road Traffic Signals LinSig Results – 2031 PM Peak Hour

Scenario	Arm	Mean Max Queue (PCU)	Average Delay (sec/PCU)	Deg Sat (%)
2031 Forecast Year	A40 London Road	68.6	273.7	111.6%
	A40 Old Bath Road	78.5	304.5	114.0%
	A435 London Road	58.2	284.8	111.6%
	B4075 Hales Road	42.5	281.7	110.3%
2031 Forecast Year + Proposed Development	A40 London Road	76.5	313.9	114.3%
	A40 Old Bath Road	87.7	333.5	116.1%
	A435 London Road	67.7	343.4	115.6%
	B4075 Hales Road	52.5	348.0	114.9%
2031 Forecast Year (Adjusted)	A40 London Road	55	215	107.6%
	A40 Old Bath Road	57	208	107.3%
	A435 London Road	51	256	109.5%
	B4075 Hales Road	34	222	106.1%
2031 Forecast Year + Proposed Development (Adjusted)	A40 London Road	63	256	110.3%
	A40 Old Bath Road	72	273	111.8%
	A435 London Road	53	267	110.3%
	B4075 Hales Road	43	286	110.6%

6.43. The results show that junction would be operating significantly over capacity in both the AM and PM peak hours in all scenarios, but as the junction is operating significantly over capacity, any assessment of overall junction performance is unreliable. As I have previously highlighted this junction modelling has been undertaken without the benefit of a dynamic model. It does not

therefore allow traffic to redistribute as a consequence of delays on the surrounding highway network which would occur in reality. Furthermore, the static nature of the traffic modelling means that the traffic flows at each of the junctions (and this junction in particular) are the full 'demand flows' - meaning that the model ignores the fact that queuing at an up-stream junction will reduce the rate at which traffic arrives at the downstream junction and thus reduce the extent of queuing at the downstream junction. In dynamic models such as SATURN 'actual flows' rather than 'demand flows' are used when considering the operational capacity of a junction.

6.44. The additional traffic from the proposed development passing through the A40 London Road / Old Bath Road / Hales Road signal-controlled junction in the AM and PM peak hours is small, as can be seen from **Table 6.13** below.

Table 6.13: Development Traffic Proportion

Time Period	Adjusted 2031 traffic passing through junction	Development Traffic	% Development Traffic
AM Peak Hour	2,246	54	2.40%
PM Peak Hour	2,349	54	2.30%

6.45. The new LTP acknowledges that it is not the aim of policy to protect the convenience of commuting car drivers - indeed a main thrust of transport policy is to reduce private car journeys - and that, in any event, if the aspirations of the Development Plan (in terms of the total housing numbers) were to be achieved in full, the impact on this particular junction would potentially be much greater than the impact that the appeal proposal would have. On this basis I do not consider the additional traffic from the proposed development would have a 'severe' impact in the context of NPPF paragraph 111 and reiterate the point that I have made above that even if a trigger for 'severe' is reached, paragraph 111 of the NPPF does not require that permission must be refused

Issue (ii) – Pedestrian and Cycle Infrastructure

6.46. PFA Consulting undertook a Walking, Cycling and Horse-Riding Assessment and Review (WCHAR) to establish existing facilities and provision for pedestrians, cyclists and equestrians surrounding the appeal site, and to identify opportunities to improve provision. This guided the proposed works detailed below to mitigate the impact of the proposed development and improve connectivity for pedestrians and cyclists.

On-Site Link to Priors Road

6.47. RHL has reviewed the footpath/cycle link from the main part of the Appeal site to Priors Road to establish if there is sufficient width to deliver a LTN 1/20 compliant segregated footpath and cycleway.

6.48. The appellant has produced a plan which is reproduced at **Appendix 11** which shows how a LTN 1/20 compliant segregated cycleway and footway could be delivered connecting the residential development to Priors Road. It shows a predominantly 3m cycleway, 2m footway with circa. 0.5m separation. A localised narrowing of the cycleway to 2m is shown around an existing tree along the route which is the absolute minimum width for a 2-way cycleway at constraints, as set out in Table 5.2 of LTN 1/20.

6.49. Within the site RHL drawing no. 333.E.36 reproduced at **Appendix 12** shows indicative gradients of roads which demonstrate that road gradients can be achieved meeting Manual for Streets 2 criteria (which indicates that gradients should generally not exceed 1:12). Separate "active" links for cyclists and pedestrians with gradients of 1:20 or less with only short sections (a maximum of

30m) having gradients greater than this. The full details of the on-site pedestrian and cycle provision would however be the subject of Reserved Matters applications.

Off-Site Route along Priors Road to Whaddon Road

6.50. PFA drawing no. H628/08 Rev A at **Appendix 4** details the proposed off-site highway works on Priors Road which comprises a toucan crossing and widening of the footway to a shared footway/cycleway along the northern side of the road connecting the appeal site with the existing network of routes on Whaddon Road, a signed cycle route to the town centre and where bus stops are located. It is noted that, whilst the existing traffic signals at the "Sainsburys" junction have a cycle crossing facility, there is no cycle facility on the north side of Priors Road. Accordingly, the creation of a shared facility to Whaddon Road would be beneficial to the wider cycling public.

6.51. The proposals show shared use facilities; these have been questioned by GCC with respect to the guidance set out in LTN 1/20 'Cycle Infrastructure Design' (July 2020) which states at paragraph 6.5.4 that in urban areas the conversion of a footway to shared use should be regarded as a last resort, with facilities which separates pedestrian and cyclists being preferred, particularly when flows are high. The guidance does however recognise that shared use may be appropriate in some situations.

6.52. LTN 1/20 states at paragraph 6.5.6 that:

> **"Shared use may be appropriate in some situations, if well-designed and implemented. Some are listed below:**
>
> **Alongside interurban and arterial roads where there are few pedestrians;**
>
> **At and around junctions where cyclists are generally moving at a slow speed (see Figure 6.27), including in association with Toucan facilities;**
>
> **In situations where a length of shared use may be acceptable to achieve continuity of a cycle route; and**
>
> **In situations where high cycle and high pedestrian flows occur at different times."**

6.53. Given the nature of the route and the existing arrangements in the area it is not considered that segregated provision for pedestrians and cyclists is necessary. As set out in paragraph 6.5.6 of LTN 1/20 shared use can be appropriate "at and around junctions where cyclists are moving at slow speed, including in association with Toucan facilities"; "alongside interurban and arterial roads where there are few pedestrians"; and when it can achieve "continuity of a cycle route".

6.54. LTN 1/20 at paragraph 8.2.7 states that where routes intersect with the highway and cross other footways, such as the approach to a toucan crossing, short sections of route that are fully shared between pedestrians and cyclists are often the simplest way to accommodate all movements.

6.55. Table 6.3 of LTN 1/20 sets out that a 3.0m wide shared use route can accommodate up to 300 pedestrians and 300 cyclists per hour. The Transport Assessment submitted in support of the planning application estimated the number of peak hour walking and cycling trips using the agreed TRICS data *(TA Tables 6.3 & 6.4*). This is summarised in **Table 6.14** below; I would however expect increases in these numbers as a consequence of the Travel Plan and sustainable transport measures.

Table 6.14: Estimated Two-Way Trips by Mode

	AM Peak Hour		PM Peak Hour	
	Walk	Cycle	Walk	Cycle
Two-Way Trips	38	5	26	7
Mode Share	16%	2%	12%	3%

6.56. The Middle Super Output Area (MSOA) in Cheltenham which covers the appeal site has a high propensity to cycle. According to the 2011 Census approximately 8% of residents cycled to work (UK average 2-3%).

6.57. Even allowing for a four-fold increase in cycle trips to that estimated by the TRICS data, the level of cycling and walking trips generated by the proposed development would be significantly less than the 300 cyclists per hour set out in Table 6.3 of LTN 1/20 for which a 3.0m shared use route is recommended. Therefore, solely based on the level of pedestrian and cyclist flows a 3.0m width would be appropriate for a shared use route.

6.58. The off-site works along Priors Road has been assessed using LTN 1/20 Cycling Level of Service Tool, this is provided at **Appendix 13** which shows a score of 74%.

Off-Site Route along Harp Hill

6.59. PFA drawing no. H628/05 Rev A at **Appendix 5** details the proposed off-site highway works on Harp Hill which comprise a new footway connecting the proposed development, via Cheltenham Footpath 86 where it emerges onto Harp Hill, and the existing footway on the northern side of Harp Hill, which currently terminates approximately 70m to the west of the appeal site's western boundary. It provides a missing section of footway which was identified as an opportunity in the WCHAR, currently pedestrians have to walk on the carriageway to access the public right of way.

Upgrade to Cheltenham Footpath 85

6.60. The WCHAR identified an opportunity to upgrade Cheltenham Footpath 85 along the western boundary of the appeal site to Harp Hill. An upgrade to this footpath can be secured by a suitably worded planning condition.

6.61. It is considered that with the above works suitable provision can be provided that will ensure safe and suitable access to the appeal site for pedestrians and cyclists.

Issue (iii) - Immediate access off Harp Hill

6.62. The access proposals originally submitted were in accordance with Manual for Gloucestershire Street in terms of geometry. These were however revised to meet with the requirements of GCC's tracking with the junction bellmouth widened. The applicant has demonstrated that either option can be achieved, whether that be in the form of the wider junction arrangement, or the smaller with the principle of occasional over-running accepted. I believe that the tighter junction radii, particularly in a location such as this, is the correct design solution to achieve a safe and suitable access for all users. Accordingly, a revised access drawing has been produced, PFA drawing no. H628/02 Rev E , which is reproduced at **Appendix 3** showing an "illustrative" design of the site access which looks to address GCC's concerns with respect to its radii and width in order to achieve a safe and suitable access for all users. The details of the access on Harp Hill will however be subject to a reserved matters application and technical approval.

6.63. Whilst the internal access roads are for future consideration GCC have raised concerns that topography of the site will result in gradients that do not meet the requirement published in Manual for Gloucestershire Streets which advises that 1 in 12 should not exceed 30m in length.

6.64. However, a gradient of 1 in 12.5 is considered acceptable within national guidance such Manual for Streets 2. No explanation has been provided as to why local guidance should be more onerous in Gloucestershire than England generally within national guidance.

6.65. Manual for Streets 2 at paragraph 8.4.2 states:

> **"In hilly areas steeper gradients will frequently be required but a gradient of 8% should be regarded as the practical maximum unless there are particular local difficulties. This is also the maximum gradient that a manual wheelchair user can negotiate."**

6.66. Whilst there are sections of road at 1 in 12.5 (8%), there are also sections running with the contours, that will enable flatter gradients to be utilised to ensure suitable platforms for rest or for additional support for the less mobile. The footway routes through the POS areas also offer multiple opportunities to grade these paths at shallower gradients to offer alternative routes to those alongside the site access road.

6.67. The key desire routes from the proposed housing will be towards Priors Road (bus stops, shops, schools etc.) and as such the routes up to Harp Hill will likely have minimal use. The link to Priors Road offers a route at manageable grades which is the most direct route to key facilities.

Issue (iv) - Travel Plan

6.68. An updated Residential Travel Plan was produced by PFA Consulting addressing the comments received from the GCC. The applicant has accepted the travel plan requirements and in accordance with GCC's local guidance on Residential Travel Plans is to provide a financial contribution of £64,500 towards implementing the Travel Plan which will be secured by a planning obligation.

Issue (v) - Public Transport

6.69. The bus stops on Priors Road are located in the immediate vicinity of the proposed pedestrian / cycle link to the site approximately 600m walk from the centre of the development. There are no waiting facilities at these stops, with the location of the stops demarked by a flagpole only. The Pulham Coaches services 'Q' and 'P' use these stops but do not currently provide a service during the morning and evening commuting hours.

6.70. More frequent services (every 12 minutes) which offer options for commuting are available from the 'Community Centre' bus stops on Whaddon Road located a further 150-200m walking distance. The westbound bus stop benefits from a flagpole, shelter, bus information and bench. The eastbound bus stop is demarked by a flagpole only.

6.71. Whilst the distances form the centre of the site are greater than 400m (some of the residential units in the north-west corner of the site fall within this threshold), the quality of the walking route itself and the level of service provision will be a key factor in what is an acceptable walking distance. The frequent services at the bus stops on Whaddon Road and the high-quality route for pedestrians will provide residents with the opportunity to use the bus, particularly for journeys to Cheltenham town centre which has a bus journey time of approximately 12 minutes.

6.72. A Plan showing the crow fly walking distances (400m and 800m) from the two sets of bus stops on Priors Road and Whaddon Road is provided at **Appendix 14**, with the bus services and routes represented in a further Plan at **Appendix 15**.

6.73. It can be seen that the proposed development on the appeal site is closer to the bus stops than recently constructed development at the eastern edge of the former GCHQ site served off

Redmarley Drive or the Cheltenham Plan allocation at Prior Farm Fields served off Imjin Road for which development is to be located on the eastern side of the allocation.

6.74. GCC have confirmed that the bus stops on Priors Road are likely to be the most attractive to the site, and have requested that the bus stops be upgraded to include shelters, kassel kerbs and RTI on both sides, which is to form part of the highway works on Priors Road, as shown in PFA drawing no. H628/08 Rev A at **Appendix 4**.

6.75. A further Plan showing the indicative "door to door" walking routes and distances to the bus stops on Priors Road is provided at **Appendix 16**.

6.76. The Council's putative reason for refusal 7 is as follows:

Refusal Reason 7

> **"Policies INF4, INF6 and INF7 of the Joint Core Strategy (JCS) (adopted 2017) (and Policy CI1 of the Cheltenham Plan) state that where infrastructure and services requirements are generated as a result of site proposals, new development will be served by appropriate on and/or off site infrastructure, services and other remedial measures. Financial contributions towards the provision of necessary infrastructure, services and other remedial measures will be sought through the s106, s278 or CIL mechanisms, as appropriate. The proposed development would lead to a requirement for necessary off-site highway improvement works (JCS Policies INF1 and INF6) and the implementation of the Residential Travel Plan.**
>
> **No agreement has been completed to secure the provision of necessary highway improvements works and the funding and implementation of the Residential Travel Plan. The proposal fails therefore to meet the expectations of Policy INF1 and INF6 of the JCS (adopted 2017), Policy CI1 of the Cheltenham Plan (adopted 2020) and guidance on developer contributions set out in the NPPF."**

Proposed Mitigation

6.77. To address putative reason for refusal 7 the following mitigation is proposed which will be secured by either planning condition or S106 legal agreement.

1. Highway works to Harp Hill comprising Improvements to pedestrian connectivity by means of a new footway on the northern side of Harp Hill connecting existing routes with PRoW Cheltenham Footpath 86, to be secured by planning condition and Section 278 agreement. (PFA drawing no. H628/05 Rev A at Appendix 5).
2. Highway Works to Priors Road comprising improvements to pedestrian and cycle connectivity and bus stops on Priors Road which includes a toucan crossing and widening of the footway on northern side of Priors Road to a shared footway / cycleway, to be secured by planning condition and Section 278 agreement. (PFA drawing no. H628/08 Rev A at Appendix 4).
3. Highway work comprising widening to the Harp Hill approach at the Priors Road / Harp Hill roundabout to increase its operational capacity to be secured by planning condition and Section 278 agreement. (PFA drawing no. H628/04 Rev C at Appendix 9).
4. Financial contribution of £64,500 towards implementing the Residential Travel Plan, to be secured by S106 Agreement.
5. Enhancement to PRoW Cheltenham Footpath 86, to be secured by planning condition.
6. No other contribution has been requested by GCC.

7. SUMMARY AND CONCLUSIONS

7.1. My evidence examines the highway, traffic, road safety, and general sustainability implications of a development of up to 250 dwellings with vehicular access from Harp Hill, Cheltenham.

7.2. Following the agreement of a "Transport Scope" with Gloucestershire County Council (as the Highway Authority), a detailed Transport Assessment was undertaken. This examined the overall transport implications (highway capacity, traffic flows, road safety and opportunities to travel by means other than the private motor car) of the proposed development. Following the submission of that Assessment the Highway Authority raised a number of objections relating to the impact of the proposed development on the surrounding highway network and requested further information, in particular requiring an analysis of the operation of the highway network at an Assessment Year of 2031 (the original Assessment year identified in the agreed scope being 2024). This further analysis was provided by way of a supplementary Transport Note. The Highway Authority also raised concerns about the ability to achieve suitable footway/cycleway gradients within the site.

7.3. Having considered the additional analysis and information provided, the Council has continued to raise traffic and sustainable travel-related objections to the development which can be summarised as follows:-

7.4. The traffic impact on the Priors Road/Harp Hill/Hales Road/Hewlett Road junction, the Priors Road/Bouncers Lane junction, the Prestbury Road/Tatchley Lane/Deep Street/Blacksmiths Lane/Bouncers Lane junction, and the A40 London Road/Old Bath Road/Hales Road junction; together with the lack of suitable footway/cycleway gradients within the site.

7.5. Accordingly I have reviewed both the original and additional analysis and have identified that the Tempro growth used in the analysis is predicated on the basis of the Development Plan requirements/assumptions for future housing and employment. However, as Mr Tiley identifies in his evidence there will be a shortfall in housing delivery over the Plan period which means that the Tempro growth used in the additional analysis overestimates future traffic flows (by around 1/3rd). Accordingly my evidence considers a "more probable" estimate of future traffic flows.

7.6. Furthermore, the estimated future traffic flows and development traffic predictions do not reflect the changes in peak hour traffic characteristics which, in my opinion, will be a permanent consequence of the recent Covid restrictions, the recent innovative e-scooter scheme which is being trialled in Cheltenham and the efficacy of the proposed Travel Plan. All of these factors, will in my opinion, result in my "more probable" analysis being an overestimate of the traffic impacts of the development.

7.7. Notwithstanding this, the evidence that I have produced enables me to conclude that the impact of a development of up to an additional 250 dwellings on the wider highway network and the above junctions in particular, will be less than would occur if the Development Plan housing trajectory were to be realised in full and thus, in my opinion, is "not a severe impact" in the context of para 111 of the NPPF.

7.8. Whilst I acknowledge that the Highway Authority's witness Mr Hawley, may have a different opinion, even if a judgement is made that a trigger for 'severe' is reached, paragraph 111 of the NPPF does not require that permission must be refused but is simply a test for whether the development could be refused on highways grounds. In such circumstances the degree of harm is balanced against, and with, other transport and planning benefits and disbenefits.

7.9. In reality, once queues and delays become "unacceptably" long, this becomes a "stick" part of the "carrot and stick" approach to changing travel patterns and drivers will think twice about jumping into their cars for journeys which can be undertaken by other modes, or decide that the journey is simply not essential, or can be undertaken at a different time. Increased working from home, and flexible working hours, together with sustainable travel incentives such as the "e-scooter" scheme being trialled in Cheltenham, are examples of the "carrots" which form part of this approach.

7.10. The Travel Plan proposed to support this appeal proposal is part of the "carrot" and thus, in my opinion, the analysis of the operation of the various junctions represents very much an over-estimate.

7.11. All of these factors only reinforce my judgement that the impact that the development will have on the highway network cannot be described as "severe" in the context of the NPPF.

7.12. Whilst the internal access roads are for future consideration a gradient of 1 in 12.5 for residential roads (with adjacent footways) is acceptable within national guidance such as Manual for Streets 2. Local guidance should not be more onerous than national guidance.

7.13. Whilst there are sections of road at a 1 in 12.5 (8%) gradient, there are also sections running with the contours that will enable flatter gradients to be utilised to ensure suitable platforms for rest or for additional support for the less mobile. The footway routes through the POS areas also offer multiple opportunities to grade these paths at shallower gradients to offer alternative routes to those alongside the site access road.

7.14. Given the general topography of this part of Cheltenham, such gradients are not unusual and allow the efficient use of land for residential purposes.

7.15. I have identified appropriate mitigation measures which can be secured either by condition or by legal agreement and on this basis I believe that the proposal provides a sufficiently suitable and safe access for all users, and that overall there can be no highway/traffic related objections to the development.