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CALTHORPE STREET,

BANBURY

TRANSPORT ASSESSMENT

Project No	22-312-20
Revision No	01
Issue date	26/05/23

Control Sheet

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CONTENTS

Tables

Figures

Appendices

1 INTRODUCTION

1.1 Background

1.1.1 This Transport Assessment has been prepared by Calibro Consultants Ltd on behalf of Tri7 Limited (herein referred to as "The Applicant") to provide an appraisal of the traffic and transport implications of a proposed residential development of 230 residential units at land at Calthorpe Street, Banbury.

1.1.2 This report provides the Local Planning and Highway Authorities with a site-specific evidence base that establishes the magnitude and severity of the transport related development effects. The assessment process has been undertaken with due regard to best practice and current policy, particularly in respect of relevant local and national policy. In this way, the assessment focuses on demonstrating compliance with the following two principal areas of policy set out within the National Planning Policy Framework (NPPF):-

a) Sustainability: The stated purpose of the revised NPPF and the wider planning system is *"to contribute to the achievement of sustainable development"* and is, therefore, underpinned by a presumption in favour of sustainable development. In this regard, the economic, social, and environmental credentials of the development proposals will be considered throughout this report, so far as relevant to transport and highways matters.

b) Cumulative Impact: Paragraph 111 of the revised NPPF 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" and the report, therefore, seeks to quantify the magnitude of any transport effects (including highway capacity and safety) in order to inform measures of likely severity.

1.2 Site Location

1.2.1 The application site is situated in central Banbury approximately 400-metres south of the town centre. The site is situated approximately 36-Kilometres to the north of Oxford, 48-kilmometres to the east of Milton Keynes and 46-kilmometres to the south of Coventry.

1.2.2 The site is well connected to the M40 junction 11, and the A423. The M40 provides onward connectivity to Birmingham to the north Oxford to the south. Furthermore, the M40 provides onward connectivity to London in the southeast.

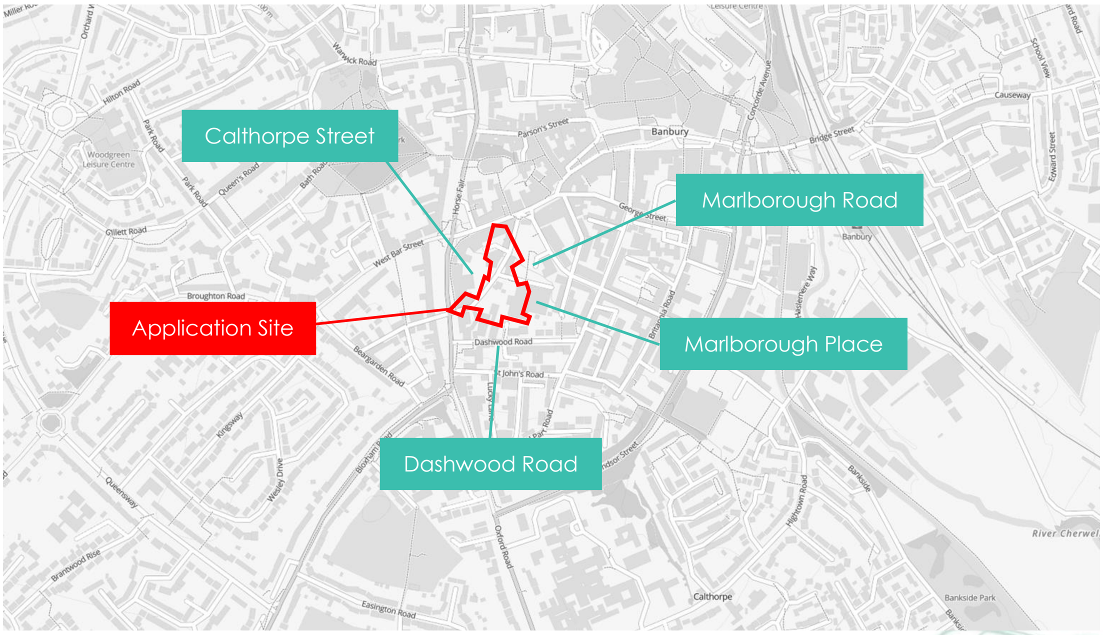
1.2.3 The application site is shown in its strategic context below.

Figure 1-1 Strategic Context

1.2.4 In a local context, the application site is located to the immediate south of Banbury's central retail area, adjacent High Street. The application site is delineated by Calthorpe Street adjacent to the site's western boundary and Marlborough Road adjacent to the sites north-eastern boundary. Residential dwellings and commercial buildings define the sites southern and eastern limits.

1.2.5 The application site is shown in its local context below.

Figure 1-2 Localised Context



1.3 Structure of the Report

1.3.1 The structure of this report is as follows:

Section 2. Policy Context - This section of the report outlines the National, Regional, and Local Policies relevant to the proposed development.

Section 3. Development Proposals - This section of the report provides an overview of the development proposals with a particular focus on transport.

Section 4. Review of Non-Car Accessibility - The accessibility credentials of the site by foot, cycle, bus and rail are considered within this part of the assessment, taking into account existing and future infrastructure provision, as well as existing and proposed land-uses that exist within walkable distances.

Section 5. Review of the Local Study Area Highway Network - The existing car-borne travel credentials of the application site are considered within this section of the report. This includes a review of the surrounding highway network and its suitability to accommodate vehicular trips associated with the proposed development.

Section 6. Existing Parking Demand – A review of the demand for parking at the site and the effect of development proposals is undertaken at this section of the report.

Section 7. Traffic Impact: Assessment Scenarios - The section of the report outlines the scenarios considered as part of this assessment from which the development effects are to be considered.

Section 8. Existing Traffic Demand - This section of the report identifies the baseline traffic conditions on the study area highway network, upon which the magnitude and severity of the development effects will be considered later in this report.

Section 9. Extant Trip Generation - This section of the report evaluates the trip generation potential of the existing uses of the site, including distribution and assignment methodologies.

Section 10. Proposed Trip Generation - This section of the report evaluates the trip generation potential of the proposed development, including distribution and assignment methodologies.

Section 11. Traffic Impact - This section of the report considers the magnitude of any traffic effects resultant from any committed development / ambient traffic growth alongside the proposed development, together with its potential significance in the context of the safe and efficient operation of the public highway network.

Section 12. Summary & Conclusions - The findings of this report are summarised within this section and used to identify an over-arching conclusion on the suitability of the proposals in traffic / transport terms.

2 POLICY CONTEXT

2.1 Introduction

2.1.1 This section of the report reviews the relevant national and local sustainable transport policies such that the degree of compliance can be assessed in the subsequent sections of the report.

2.1.2 The following documents have been considered for this assessment:

- Revised National Planning Policy Framework (NPPF)
- Local Transport and Connectivity Plan 2022 - 2050 - July 2022
- Cherwell Local Plan 2011-2031 - July 2015
- Banbury Vision & Masterplan - December 2016

2.2 National Planning Policy Framework (NPPF)

2.2.1 The NPPF sets out the Government's planning policies for England and how it expects these to be applied. The Framework clarifies at Paragraph 7 that "*the purpose of the planning system is to contribute to the achievement of sustainable development*" and this is the only occasion within entirety of the Framework that the purpose of the planning system is stated.

2.2.2 It is therefore evident that the sole purpose of the planning system is to achieve sustainable development and the achievement of such is therefore to be given the highest degree of weight in the plan making and development control process.

2.2.3 Indeed, paragraph 110 of the NPPF makes clear that the allocation of specific sites within Local Plans should be assessed against several criteria, including the promotion of sustainable transport modes (taking account of the type of development and its location), the provision of safe and suitable access to the site for all users, and/or the ability for any significant impacts from the development on the transport network (in terms of capacity and congestion) to be mitigated to an acceptable degree.

2.2.4 To assist in this purpose, Paragraph 3 of the Framework confirms that "the Framework should be read as a whole (including footnotes and annexes)." In concise terms, Paragraph 8 identifies that sustainable development is achieved via three mutually dependant dimensions (economic, social and environmental) and these give rise to the need for the planning system to fulfil a number of objectives:

> "An economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
>
> A social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
>
> An environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigation and adapting to climate change, including moving to a low carbon economy."

2.2.5 In this respect, sustainability can be thought of as complex and multi-faceted concept where, each of the objectives needs to be pursued in mutually supportive ways to secure net gains are delivered in each across each of the objectives (Paragraph 8, NPPF).

2.2.6 In the case of transport-related sustainability, Paragraph 104 of the Framework requires that "transport *issues should be considered at* ***the earliest stages*** *[emphasis added] of plan making and development proposals*" so that the:

a) "opportunities to promote walking, cycling and public transport use are identified and pursued"

b) "environmental impacts of traffic and transport can be identified and taken into account – including appropriate opportunities of avoiding [emphasis added] and mitigating adverse impacts".

2.2.7 This is supplemented by Paragraph 105 of the Framework which requires that "the planning system should actively manage patterns of growth" and "significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes".

2.2.8 To help inform the appropriate pattern of growth, Paragraph 106 (b) requires that planning policies should be "*prepared with the* ***active involvement*** *[emphasis added] of local highway authorities, other transport infrastructure providers and operators*".

2.2.9 Taking this together, the NPPF therefore seeks to deliver development (in this case, housing development) in locations and with appropriate strategies that minimise the need to travel, reduce consequential greenhouse gas emissions and help to conserve natural resources effectively.

2.2.10 It is the case therefore that Government policy is concerned in the significant part with the location of development relative to supporting jobs, shops and local amenities, which ultimately create the need to travel. In this context, Paragraph 105 of the Framework requires that locations that minimise the need to travel should be the focus of future development as these can help to "reduce congestion and emissions and improve air quality and public health".

2.2.11 The above policy requires that journey lengths are minimised which is a threshold set at a higher level than reduce and which suggests of a requirement to reduce journeys to the smallest possible degree. It is therefore fundamental that each allocation demonstrate that it is located where the need to travel can be minimised and non-car travel options maximised.

2.2.12 This requirement is implicitly transposed to Paragraph 32 which requires that *"significant adverse* impacts… *should be avoided and, wherever possible, alternative options which reduce or eliminate such impacts should be pursued". This is of course relevant to the proposal given that the evidence base prepared in support of the emerging Cranbrook Plan clearly demonstrates the opportunity to deliver sustainable development in this location in a way that minimises the need to travel and which avoids adverse highway capacity affects.*

2.3 Local Transport and Connectivity Plan 2022 - 2050 - July 2022

2.3.1 The Local Transport and Connectivity Plan (LTCP5) for Oxfordshire outlines the projected transport solutions for the area from the period 2022 until 2050. Its goal is described as:

> *"[…] reducing the need to travel, discouraging individual private vehicle journeys and making walking, cycling, public and shared transport the natural first choice."*

2.3.2 Indeed, Oxfordshire County Council (OCC) has identified the following challenges as critical in delivering a county that becomes a better place to live for all residents:

- Decarbonisation – Delivering a net-zero transport system is a critical part of contributing to UK targets and addressing the climate emergency.
- The private car – A 36% increase in car vehicle miles since 1993 is having negative impacts on human health and the environment.
- Future growth – Proposals for many new jobs and homes in the county will have a significant impact on our transport network.
- Connectivity – There is a need to improve connectivity by walking, cycling and public transport and also other forms of connectivity such as digital.

- Inclusivity – Some communities face barriers to transport which need to be removed to create an accessible and fair transport system for all residents.

2.3.3 A number of Policies are outlined in order to reflect on and respond to the identified challenges, specifically:

- Policy 2 - Ensure that all new developments have safe and attractive walking and cycling connections to the site, include a connected attractive network for when people are walking and cycling within the development and that the internal routes connect easily and conveniently to community facilities and the local cycle and walking network.
- Policy 22 – Consider multi-modal travel as a central option for transport planning and planning for new developments to achieve greater integration of the transport system.

2.3.4 In conclusion, it is evident that the LTP5 for Oxfordshire has a high priority to reduce the carbon emissions from transport in the region and more specifically, it outlines that this will be achieved through support as well as investments in public transport and active travel network to increase travel choice for local journeys.

2.3.5 As such, these policies are in line with the overarching National Planning guidance to encourage sustainable transport and forms a strong policy base for the development of this proposal.

2.4 Cherwell Local Plan 2011 – 2031

2.4.1 Based on national and local statistics and independent studies, the Local Plan (LP) for Cherwell sets out what the council intends Cherwell to resemble from the period 2011 - 2031. In particular focus on Banbury, the Local Plan aims to:

> *"…focus housing growth on Bicester and Banbury, to maximise the investment opportunities in our towns, and to ensure that the level of development at our villages respects the character and beauty of our rural areas while meeting local needs."*

2.4.2 To achieve this, the LP is underpinned by a series of defined core policies. Relevant to the current application, Policy Banbury 7 "Strengthening Banbury Town Centre" outlines that there is a desire to ensure that the town centre remains the primary focus for new development for all land uses, including residential, in accordance with the principles of the NPPF.

2.4.3 It is explicitly stated that "*the change of use of sites used for main town centre uses in the town centre for residential development will normally be permitted if proposals contribute significantly to the regeneration of the town centre.*"

2.4.4 Indeed, C.158 outlines that the site referred to as Land at Calthorpe Street provides the opportunity to regenerate this part of town, which has experienced vacancies.

2.4.5 Policy Banbury 1 "Banbury Canalside" also proposes for new pedestrian and cycle bridges erected over the Oxford Canal and the River Cherwell to enable and encourage walking and cycling through the Canalside development, located between the Town Centre and the Train Station, thus improving the permeability of the walking infrastructure.

2.4.6 On a strategic level, Policy ESD 1 "Mitigating and Adapting to Climate Change" defines measures to be taken to mitigate the impact of development, such as:

- Distributing growth to the most sustainable locations as defined in this Local Plan
- Delivering development that seeks to reduce the need to travel and which encourages sustainable travel options including walking, cycling and public transport to reduce dependence on private cars.

2.4.7 To conclude, the LP for Cherwell promotes the growth of Banbury, in particular its town centre. It is looking to enable connectivity through the town of Banbury and relying on a quality multi-modal transport network through walking and cycling improvements, improving accessibility to bus and train connections for longer journeys. As such, these policies for Cherwell and Banbury are in line with the NPPF guidance to promote sustainable transport and increase use of public transport.

2.5 Banbury Vision & Masterplan - December 2016

2.5.1 This Document complements the Local Plan and specifies the vision for the town of Banbury. It reiterates the need for the town to increase public transport patronage through a joint analysis with bus operators, as well as increasing pedestrian and cycle activity.

2.5.2 A Local Cycling and Walking Infrastructure Plan is currently being written following a consultation in 2022, which details the walking and cycling improvements identified by Cherwell District and Oxfordshire County Council.

3 DEVELOPMENT PROPOSALS

3.1 Application Details

3.1.1 Full details of the proposed development are set out within the Planning Statement prepared by Framptons, which accompanies the planning application submission. However, for ease, the formal description of development is extracted below: -

> *"Demolition of existing retail units and public car park and redevelopment for 230 residential dwellings (C3 use), provision of private car parking, public realm, landscaping and photovoltaic (PV) panels on roof, and associated works"*

3.1.2 The illustrative masterplan is also provided below and to a larger scale at Appendix A of this report.

Figure 3-1 Illustrative Masterplan

3.1.3 In respect of traffic and transport considerations, the salient elements of the proposals comprise the removal of the existing retail land-uses and public car park on the site and the redevelopment for up to 230 residential dwellings. The accommodation schedule is outline below: -

- 221 apartments of: -
    - 154 x 1-bedroom apartments
    - 59 x 2-bedroom apartments
    - 8 x 3-bedroom apartments
    - 65 apartments are to be affordable.
- 9 townhouses of: -
    - 1 x 3-bedroom
    - 8 x 4-bedroom
    - 4 townhouses are to be affordable.

3.2 Vehicular Access

3.2.1 Under the proposals, the existing accesses onto Calthorpe Street and Marlborough Road will be retained and improved. In this way, all three vehicular accesses Calthorpe will be provided over 5.5-metres for 15-metres.

3.2.2 The access arrangements are shown below and included to scale at Appendix B.

Figure 3-2 Proposed Site Accesses

3.2.3 The design of the access junctions has considered the appropriate Stopping sight Distances (SSD) and in this way, independent ATC surveys have been undertaken on both Calthorpe Street and Marlborough Road – within the vicinity of the application site. The ATC surveys were undertaken between Wednesday 22nd and Tuesday 28th March 2023. The results are summarised in the table below, whilst full survey results are provided at Appendix C of this report.

Table 3-1 ATC Results

Location	ATC	85th % WW Speed (mph)	SSD (metres)
Calthorpe Street	NB (ATC1)	24.26	32
	SB (ATC2)	25.52	35
Marlborough Street	NB (ATC3)	24.98	34

3.2.4 The results of the ATC surveys indicate that 85th percentile wet weather speeds recorded are somewhat lower than the posted speed limit of 30mph. On this basis and in accordance with Manual for Streets (MfS), the recommended visibility splays have been identified above – with splays measured from a set-back of 2.4-metres.

3.2.5 As shown in Figure 3-2 above, the visibility splays from each access exceed the recommended distance, with 43-metre splays possible – akin to the 30mph posted speed limit – from a set-back of 2.4-metres.

3.2.6 The northernmost access onto Calthorpe Street will function as the primary site access, by way of a gated access to the undercroft car park serving 63 car parking spaces. This access is proposed to operate with a traffic light system to control movements through the car park in a safe and efficient manner. In this way, both the shutter gate and stop line have been positioned to ensure waiting vehicles can safely manoeuvre off the carriageway, without blocking back.

3.2.7 Based on the above, it is considered that proposed access arrangements are appropriate to serve the proposed development.

3.2.8 As per the previous pre-application response from OCC Ref(22/00492/PREAPP), a Stage 1 Road Safety Audit has been undertaken. The RSA is contained at Appendix D.

3.3 Pedestrian Access

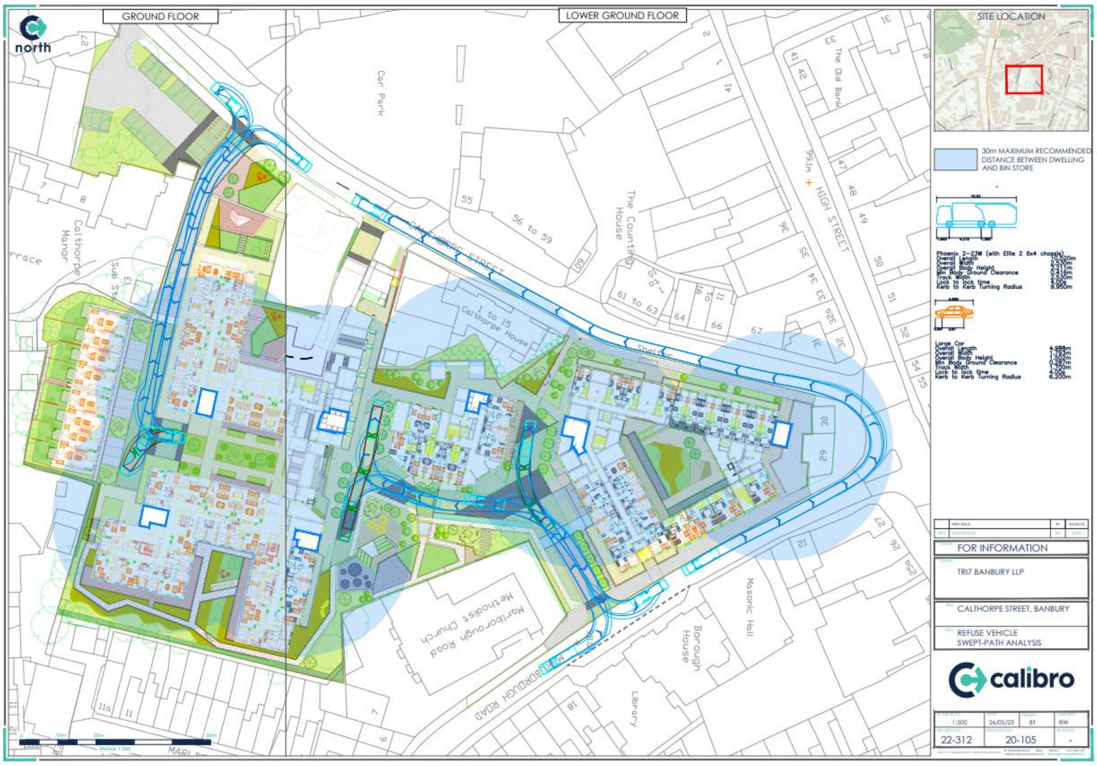
3.3.1 Non-vehicular access to the development will be gained alongside the southernmost access onto Calthorpe Street as well as the Marlborough Road access via 2-metre-wide footways into the site, with the internal site layout being formed as a minimum 6-metre-wide shared surface. In this way, the shared surface areas have been designed to facilitate the safe and efficient movement of both non-motorised and motorised users through the heart of the development with a clear road-user hierarchy established, in accordance with MfS and OCC design guidance.

3.3.2 One further non-car access is provided onto Calthorpe Street to the south of Block F, offering a permeable network encouraging non-car travel.

3.4 Service Vehicles

3.4.1 The internal layout of the site for both the lower ground and ground floor have been designed to safely accommodate the movements of a refuse vehicle through the site. This is evidenced by the swept-path analyses shown in the figure below and to a larger scale at Appendix E.

Figure 3-3 Refuse Tracking



3.4.2 The analysis presented above demonstrates that refuse vehicles (and indeed other large vehicles) would be able to enter and exit the development in a forward gear, thereby ensuring a safe and efficient means of access.

3.4.3 In accordance with Cherwell District Design Guidance and Part H of the Building Regulations, the bin stores identified are located within 20-metres of the kerbside collection points. Indeed, the figure above shows the 30-metre distance for residents and 20-metre distance for refuse collectors.

3.5 Emergency Vehicles

3.5.1 As above, both the site accesses and the internal site layout have been designed to facilitate the safe manoeuvring of emergency vehicles throughput allowing for ingress and egress in a forward gear. The swept-path analysis is shown in the figure below and to scale at Appendix E.

Figure 3-4 Fire Tender Tracking

3.6 Car Parking Provision

3.6.1 As evidenced within Section 4, the application site lies within an area of excellent accessibility, having access to a plethora of amenities and employment opportunities by walk, cycle, and bus.

3.6.2 As such, the proposals provide an optimised level of car parking in combination with cycle parking facilities, that reflects the realistic and viable opportunities to travel to/from the site via non-car modes in line with the thrust of the NPPF. In this way, the proposals incorporate a provision for 63 unallocated spaces within the undercroft parking area.

3.6.3 With regard to electric vehicle charging points, in line with guidance and the previous pre-app response, the development proposals afford 19 EV spaces – equivalent to 29%.

3.6.4 The figure below shows the arrangement of the undercroft car park and the associated swept-path analysis, also included at Appendix E.

Figure 3-5 Car Park Tracking

3.6.5 There are a further 9 spaces outside of the townhouses on the upper ground floor. The development proposals provide for 3 visitor spaces on the ground floor accessed from Marlborough Road.

3.6.6 Considering accessible spaces, the undercroft parking area affords four accessible spaces, with a further space provided on the ground floor outside Block F - equivalent to 8%.

3.7 Cycle Parking Provision

3.7.1 In accordance with OCC's previous pre-application advice, dated 21st March 2022, and Oxfordshire Cycling Design Standards document, the development proposals afford a total of 288 cycle parking spaces for the apartments – following 1 space per bed unit and 2 spaces for larger units. Cycle parking for the townhouses is proposed to be located within their rear gardens, which can be externally accessed.

3.7.2 With regard to visitor cycle parking, the development proposals afford some 114 spaces via Sheffield hoops.

3.8 Rationalisation of the Calthorpe Street East (Short Stay) Car Park

3.8.1 The development proposals includes landscaping and rationalisation of the Calthorpe Street East car park to accommodate space for 20 cycle spaces via Sheffield hoops. The proposals include the reduction of the current 21 spaces to 19 spaces – with the three accessible spaces remaining. Changes to the parking supply across Banbury Town Centre are considered in detail at Section 9 of this report.

3.8.2 The Calthorpe Street East public car park's arrangements are shown in Figure 3-5 above, also included at Appendix E.

3.9 Section Conclusion

3.9.1 The proposed development has the potential to be delivered with a permeable, walkable network of well-designed streets that connect the proposed dwellings to jobs, shops and education facilities that exist in close proximity across Banbury Town Centre.

3.9.2 Based on the above, the development proposals are acceptable when measured against the NPPF (para 111) in so much that they would result in an unacceptable highway impact.

4 REVIEW OF NON-CAR ACCESSIBILITY

4.1 Introduction

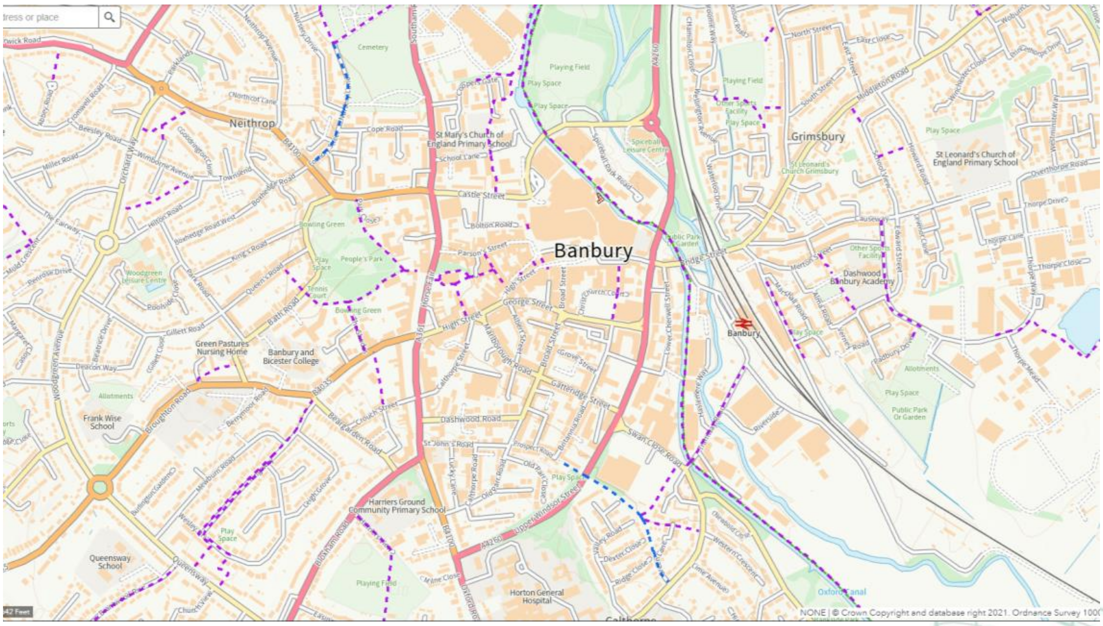
4.1.1 This section of the report describes the availability and quality of the various travel modes accessible to the application site. The existing non-car accessibility credentials are considered by way of a bespoke GIS-based model which uses centralised travel networks and public transport data to identify the geographical catchment of each mode along with the amenities accessible therein. All accessibility catchment analyses are included to scale at Appendix F of this report.

4.2 Accessibility by Foot

4.2.1 The application site is connected to the surrounding area via contiguous footways along both the eastern and western boundaries of the site, with the footway widths measuring approximately 2-metres. The footways afford connectivity to a well-formed and maintained network of footways across Banbury Town Centre, providing non-car access to a range of amenities within a short distance. Indeed, it is noted that some 100-metres north of the site High Street is provided as a pedestrianised area which runs into the centre of the Town's primary retail area, whereby connecting onto a series of further pedestrianised streets.

4.2.2 In addition, we note that through a review of Oxfordshire County Councils Public Rights of Way (PRoW) mapping that a series of footpaths are presented across the town centre and beyond, facilitating connectivity to the north and south. For context, the public rights of way have been included within the figure below.

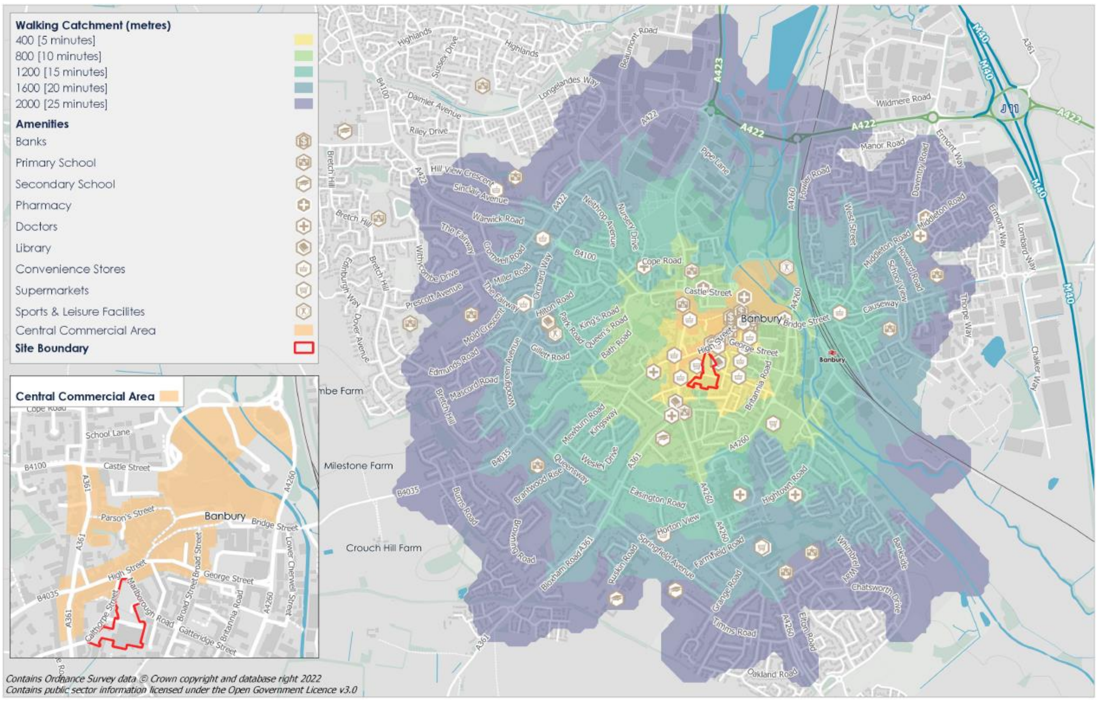
Figure 4-1 Pedestrian Infrastructure Available



4.2.3 The available infrastructure has been incorporated into an accessibility model to identify the geographical catchment area that would be accessible by foot. In this respect, it is noted that the NPPF does not define a catchment within which travel by foot is considered feasible and is the suggested maximum desirable walking distance of 2-kilometres, advocated within the document entitled 'Guidelines for Providing for Journeys on Foot' has been adopted.

4.2.4 The results of the calculated 2-kilometre catchment are shown in the figure below and at a larger scale at Appendix F.

Figure 4-2 Walking Accessibility Catchment



4.2.5 It is evident from the above figure that the application site would afford accessibility to the entirety of Banbury Town Centre and subsequently the plethora of amenities that reside within. Indeed, the catchment extends north to include the Banbury Cross Retail Park, along with stretching east to envelop Grimsbury. As such, the site would afford the opportunity for potential residents to travel to a multitude of amenities and services on foot, for example: -

- Harriers Banbury Academy Primary School
- St Mary's CoE Primary School
- Iceland Supermarket
- Morrisons Supermarket
- Castle Quay Shopping Centre
- Banbury Train Station

4.2.6 Alongside the amenities identified above, integration of Census 2011 workplace population data into the model has allowed for a determination of some 18,000 jobs available within a 25-minute walk of the site.

4.2.7 As such, it is evident that the application site is in such a location that would afford viable and attractive opportunities for travel by foot in line with various local and national sustainable transport policies.

4.3 Accessibility by Bicycle

4.3.1 With consideration of local cycle infrastructure, it is noted that there are several cycling facilities and recommended cycle routes in place in proximity of the site, primarily the Tramway Canal Towpath and National Cycle Route 5, which route to the east and south-west of the site respectively. With reference to Sustrans, the NCN5 affords connectivity to Bodcote, Bloxham, and Oxford.

4.3.2 Further to the above, it is considered that the local roads are of suitable geometry and sufficiently low vehicular speeds that informal cycling in the carriageway is possible without detriment to highway safety. Indeed, this is supported by the extract from STRAVA Heatmaps below, which demonstrates that roads within the vicinity of the site are frequently used by cyclists.

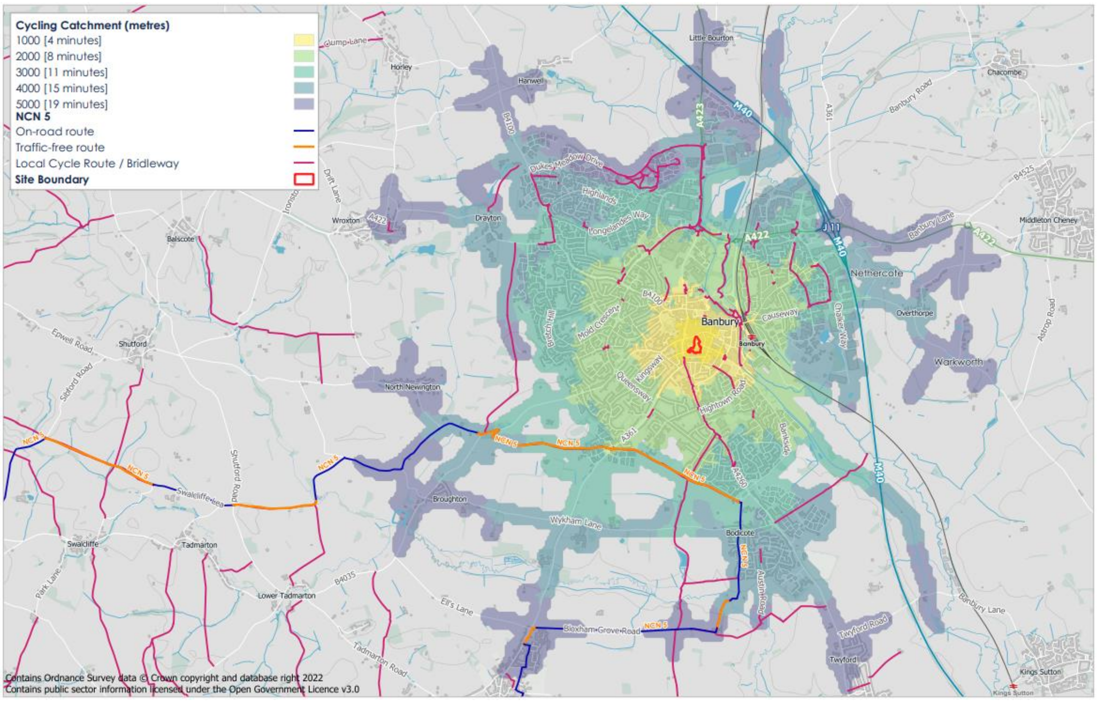
Figure 4-3 Relative Cycle Usage on Local Roads - STRAVA Heatmap

4.3.3 The cycling infrastructure identified above has subsequently been integrated into a GIS-based accessibility model to identify the accessible area by bike – with the results presented in the figure below along with a larger scale version at Appendix F.

4.3.4 With this, the industry accepted distance over which cycling is feasible for the majority of the population is 5-kilometres – although it is noted that there will always be a demographic that have natural propensity to cycle and will be willing and able to travel further by bike.

4.3.5 Indeed, the National Travel Survey (Table NTS0306) highlights that the average cycle trip is currently 3.5-miles (5.6-kilometres), whereas Local Transport Note 1/04 indicates that *"journeys up to three times [the average] distance are not uncommon for regular commuters"* and notes that *"fitness, physical ability, journey purpose….and conditions"* where relevant factors.

Figure 4-4 Cycling Accessibility Catchment



4.3.6 It is evident from the above figure that the entirety of Banbury is accessible within a short bike ride of the site. Indeed, the cycling catchment extends as Hanwell to the north and both Twyford and Bloxham, to the south. It is noted that the catchment extends east to encompass Nethercote, with Banbury train station accessible within approximately 8-minutes of the site to the east. As such, future residents of the site will have access to a multitude of retail and leisure amenities within a short cycle journey of the site.

4.3.7 In view of the number of jobs accessible, the integration of Census 2011 workplace population data indicates that are more than 26,200 jobs available within a 5-kilometre cycle journey.

4.3.8 As such, the application site is located where access by bicycle is a realistic and viable alternative to car travel for most journeys. In this way, the proposed development is acceptable in accordance with both local and national sustainable transport policies.

4.4 Accessibility by Bus

4.4.1 It is accepted that public transport comprises two principal aspects: -

1. Access to public transport which is concerned with how far the development is from the public transport network and the level of service on that network; and
2. Access by public transport which takes account of where services go to and the opportunities to access amenities located within the subsequent catchment areas served.

4.4.2 In the case of the first criterion, the nearest bus stops – named Calthorpe Street is located approximately along the site's western boundary. On this basis, the distance to the nearest bus stops lies within the desirable distance of 400-metres identified by the Institute of Highways & Transportation (CIHT) document entitled 'Buses in Urban Developments'. The bus services operating at the Calthorpe Street stop are outlined in the table below.

Table 4-1 Local Bus Service Timetable

Service	Route	Weekday			Saturday	Sunday
		Start	**Freq. (mins)**	**Finish**	**Freq. (mins)**	**Freq. (mins)**
Calthorpe Street						
75	Stratford – Shipston - Banbury	06:02	Two Services	10:15	253	No Service
	Banbury – Shipston - Stratford	11:35	Two Services	17:40	180	No Service
75A	Stratford adj NatWest Bank – Shipston - Banbury	07:35	470	19:35	One Service	No Service
	Banbury – Shipston – Stratford adj McDonalds	14:35	-	-	No service	No Service
488	Banbury Town Centre Bus Station - Chipping Norton Churchill House	07:40	60 to 80	19:05	60	120

	Chipping Norton Churchill House - Banbury Town Centre Bus Station	07:23	60 to 130	17:43	55 to 60	120
489	Banbury Town Centre Bus Station - Chipping Norton Churchill House	06:15	Two Services	06:50	One Service	One Service
	Chipping Norton Churchill House - Banbury Town Centre Bus Station	18:43	-	-	One Service	One Service
501	Banbury - Leamington	No Service	-	No Service	One Service	No Service
	Leamington - Banbury	No Service	-	No Service	One Service	No Service
502	Banbury - Leamington	No Service	-	No Service	One Service	No Service
	Leamington - Banbury	No Service	-	No Service	One Service	No Service
High Street (Includes the same services as Calthorpe Street and the following)						
5	Camden Close - Morrisons	09:20	-	One Service	No Service	No Service
	Morrisons - Camden Close	12:00	-	One Service	No Service	No Service
76	Stratford - Kineton - Banbury	09:10	185 to 240	17:45	115 to 185	No Service
	Banbury - Kineton - Stratford	07:25	100	18:32	100 to 265	No Service
76A	Stratford - Kineton - Banbury	14:15	-	One Service	One Service	No Service
	Banbury - Kineton - Stratford	10:35	-	One Service	One Service	No Service
76X	Banbury - Kineton - Stratford	15:33	-	One Service	One Service	No Service

calibro

B4	Banbury Town Centre - Hardwick Hill - Banbury Town Centre	05:47	30	18:32	30	No Service
B5	Banbury Town Centre - Bretch Hill - Banbury Town Centre	05:15	15 to 50	23:05	15 to 30	20 to 40
B8	Bridge St (Banbury) - Sinclair Avenue	09:45	60 to 90	16:45	No Service	No Service
B9	Banbury Gateway Retail Park - Hardwick Red Poll Close	06:45	30 to 35	22:15	30	30 to 60
	Hardwick Red Poll Close - Banbury Gateway Retail Park	06:03	15 to 30	23:28	20 to 30	30 to 60
B7B	Bridge Street (Banbury) - Poets Corner	10:15	90	14:45	No Service	No Service

4.4.3 Allied to the above, the High Street bus stops – some 60-metres to the north of the site – is served by routes 5, 75, 76, 488, 489, 501, 502, B4, B5, B7B, B8, and B9, which afford connectivity to destinations such as; Kineton, Stratford Upon Avon and Hardwick.

4.4.4 Beyond the first bus stop, the local stop and bus service data has been incorporated into a GIS-based accessibility model to determine the combined stop frequencies for all buses serving stops within 400-metres of the site – with the graphical output for both the morning and evening peak periods shown in the figures below.

Figure 4-5 Morning Peak (08:00-09:00) Bus Stop Frequencies

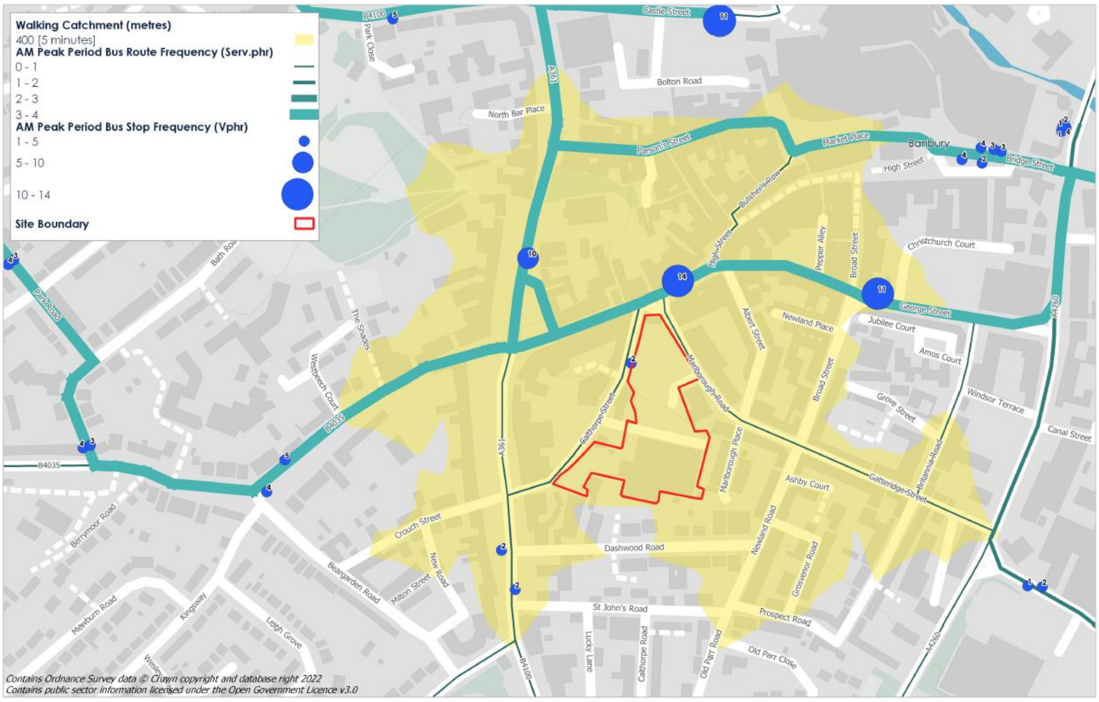
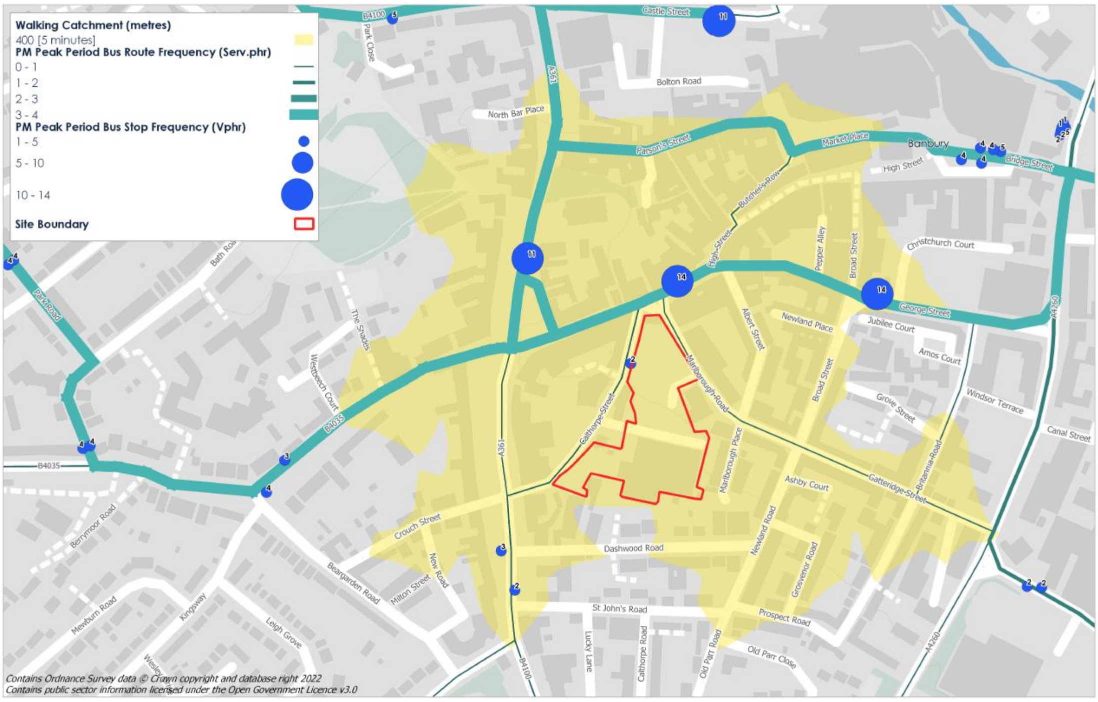


Figure 4-6 Evening Peak (17:00-18:00) Bus Stop Frequencies



4.4.5 From the above, it is evident that the site is well located in terms of accessing well serviced bus stops with the identified stops and services being used to calculate the geographical catchment that is accessible within 60-minutes intermodal travel time, i.e., walk > bus > walk. The 60-minute catchment reflects that maximum commute time considered reasonable; however, this assessment has also included the regional average commute time via bus of 36-minutes. The accessibility catchments by bus have been included in the figures below for both the morning and evening peak periods.

Figure 4-7 Bus Accessibility Catchment (morning peak period 08:00-09:00)

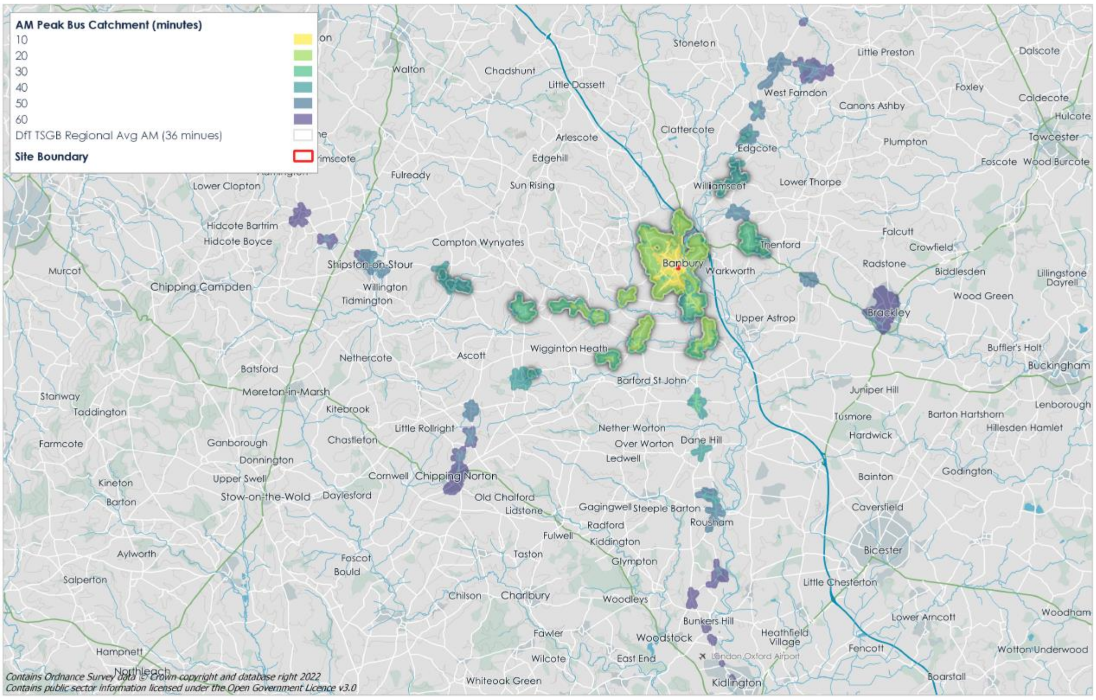
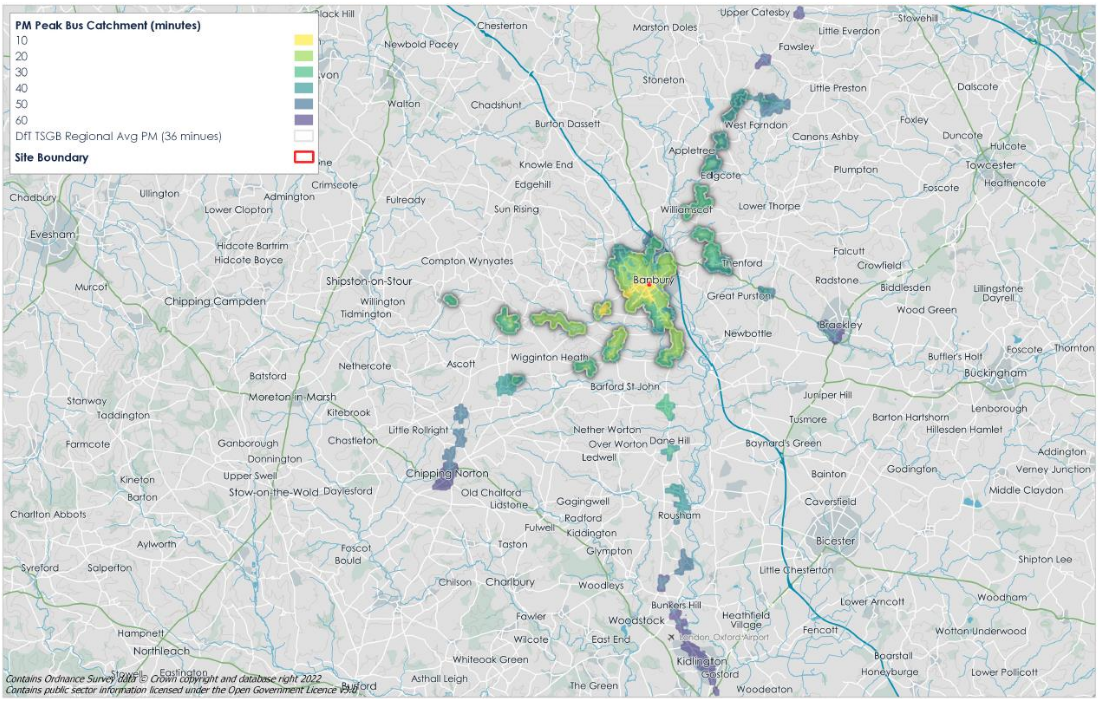


Figure 4-8 Bus Accessibility Catchment (evening peak period 17:00-18:00)



4.4.6 As illustrated by the figures above, a significant geographical area is accessible within a 60-minute bus journey of the site, with the catchments extending to include Chipping Norton, Kidlington and Brackley. With this, potential residents of the proposed development would be able to access a multitude of jobs and amenities within a relatively short bus journey.

4.4.7 Indeed, in terms of access to employment, utilising Census 2011 workplace data, the above catchments indicated that circa 28,700 jobs are accessible across both the morning and evening peak periods.

4.4.8 In view of the analysis presented above, bus travel presents a viable mode of travel for residents to and from the proposed development.

4.5 Accessibility by Rail

4.5.1 The application lies around 1-kilomtre to the east of Banbury Train Station, equivalent to a walk journey of approximately 12-minutes, or a bike ride of some 8-minutes. In terms of facilities, the station affords 63 sheltered bike stands with step-free access provided to all platforms.

4.5.2 The station is managed by Chiltern Railways and provides frequent services destinations such as Oxford, Birmingham Snow Hill, and London Marylebone. In terms of journey times, it is noted that Oxford is accessible with approximately 20-minutes of departure from the station.

4.5.3 On the basis of the above, rail represents a viable mode of travel for potential future residents of the development.

4.6 Section Conclusion

4.6.1 The analysis presented above confirms that the proposals constitute a highly accessible development that would afford future residents with the opportunity to access a multitude of amenities, leisure activities and jobs by non-car modes, in line with both national and local sustainable transport policies.

4.6.2 In this way, the proposals accord with the principles of sustainable development as they relate to transport.

5 REVIEW OF THE LOCAL STUDY AREA HIGHWAY NETWORK

5.1 Introduction

5.1.1 This section of the report contains a critical review of the existing road geometry for roads within the local study area highway network. Where applicable, the surrounding highway network has been reviewed in the context of existing guidance and policy, including MfS and Design Manual for Roads and Bridges (DMRB).

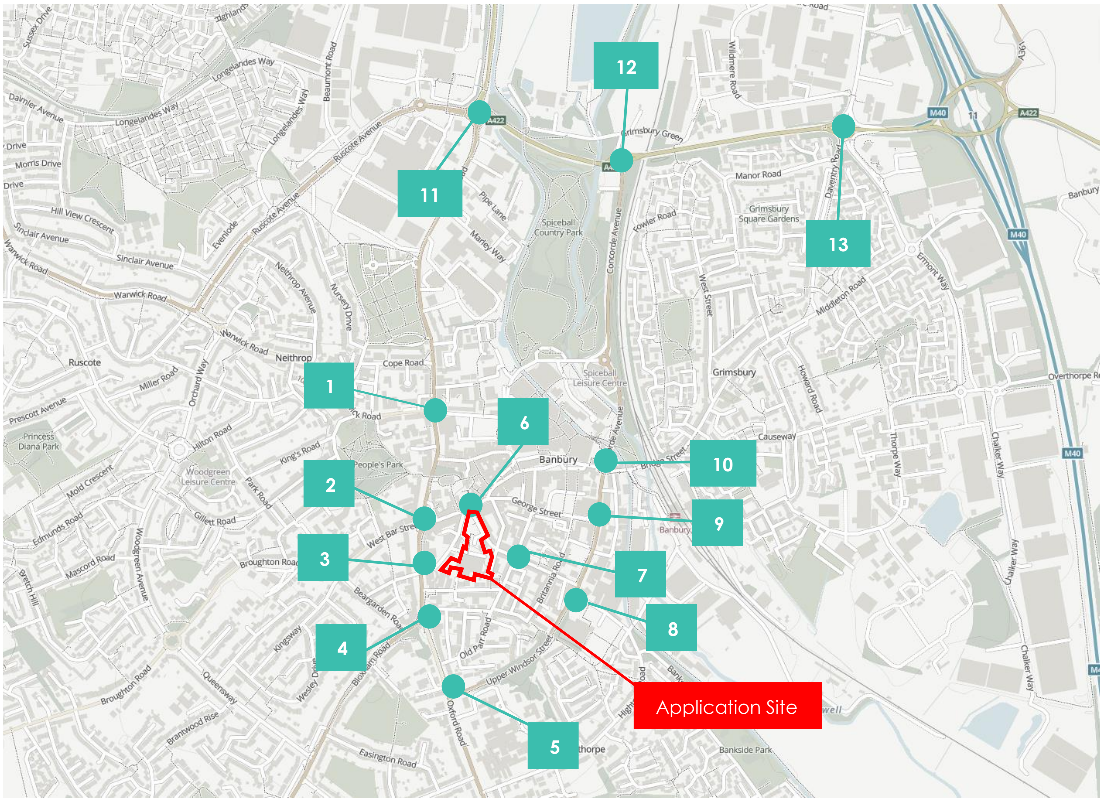
5.2 Study Area Highway Network

5.2.1 In consideration of the previous pre-app response from OCC, as the relevant Local Highway Authority (LHA), the study area highway network considered by this assessment incorporates the following junctions and interconnecting links:

1. A361-Southam Road / Castle Street / A361-Horse Fair / B4100-Warwick Road
2. A361-Horse Fair / High Street / A361- South Bar Street / B4035-West Bar Street
3. A361-South Bar Street / Calthorpe Street / A361-South Bar Street / Crouch Street
4. A361-South Bar Street / Oxford Road / A361-Bloxham Road
5. Oxford Road / A4260-Upper Windsor Street / A4260-Oxford Road
6. High Street / Marlborough Road / Calthorpe Street
7. Broad Street / Gatteridge Street / Newland Road / Marlborough Road
8. A4260-Upper Windsor Street / Swan Close Road / A4260-Upper Windsor Street / Gatteridge Street
9. A4260-Cherwell Street / A4260-Windsor Street / George Street
10. A4260-Concord Avenue / Bridge Street / A4260-Cherwell Street / Bridge Street
11. A423-Southam Road / A422-Hennef Way / A361-Southam Road / A422-Ruscote Avenue
12. Grimsbury Green / A422-Hennef Way / A4260-Concord Avenue / A422-Hennef Way
13. Wildmere Road / A422 / Ermont Way / A422-Hennef Way

5.2.2 For context, a map of the study area highway network is provided below.

Figure 5-1 Study Area



5.3 Junction 1 - A361-Southam Road / Castle Street / A361-Horse Fair / B4100-Warwick Road

5.3.1 Some 400-metres to the north of the site the A361-Southam Road forms a signalised crossroad junction with Castle Street, the A361-North Bar Street, and the B4100-Warwick Road.

5.3.2 The A361-Southam Road approach to the junction comprises a two-lane entry, with the offside lane accommodating right turn movements only – whilst the nearside allows left and ahead. Both lanes are provided with a lane width of approximately 3.3-metres. In accordance with MfS figure 7.1 the approach to the junction is sufficient in accommodating side-by-side HGV movement.

5.3.3 The Castle Street approach is provided over three lanes, with the nearside and offside lanes accommodating left turn and right turn movements only, respectively. The three lanes are provided over some 50-metres from the stop line and afford approximate widths of 3-metres – as such all three lanes can safely accommodate side-by-side HGV traffic as per figure 7.1 of MfS.

5.3.4 To the south, the A361-North Bar Street mirrors the geometry of Castle Street whilst Warwick Road to the east mirrors the geometry of Southam Road. The entire junction is therefore suitable for all vehicle types.

5.4 Junction 2 - A361-Horse Fair / High Street / A361- South Bar Street / B4035-West Bar Street (Banbury Cross Roundabout)

5.4.1 Some 240-metres to the northwest of the site the A361 meets High Street and West Bar Street to form a four-armed roundabout known locally as the Banbury Cross Roundabout.

5.4.2 The four arms of the roundabout feature a single-entry lane approach facilitating movements in all four directions. The northern arm - A361 Horse Fair - measures circa 9-metres at the give-way line, the eastern arm - High Street - some 5.3-metres, the southern arm - A361 South Bar Street - some 7.3-metres and the western arm - B4035 West Bar Street - approximately 4.6-metres.

5.4.3 The junction is therefore suitable in accommodating all vehicle types, including HGV traffic in line with figure 7.1 of MfS.

5.4.4 In terms of pedestrian amenity, the eastern, southern and western arms display a Zebra crossing located between 7- and 20-metres off of the circulatory carriageway. The northern arm provides a signalised pedestrian crossing, circa 20-metres north of the roundabout.

5.5 Junction 3 - A361-South Bar Street / Calthorpe Street / A361-South Bar Street / Crouch Street

5.5.1 Some 190-metres southwest of the site Calthorpe Street forms a crossroad junction with the A361, and Crouch Street.

5.5.2 Calthorpe Street and Crouch Street both form minor arms of the junction and comprise two-way single carriageways measuring circa 6.7-metres in width.

5.5.3 The A361 features a single carriageway allowing for two-way traffic movement running in broadly north to south alignment. In proximity to the junction, the A361 features a central lane that allows for right turns onto Calthorpe Street and Crouch Street respectively. The northbound lane of the A361 measures 4.4-metres in width, the central reservation measures 3.6-metres wide and the southbound lane measures 4.3-metres in width.

5.5.4 With reference to Figure 7.1 of MfS, the junction geometry can accommodate all vehicle types, including HGV traffic.

5.5.5 In consideration of the above, the geometry of the junction appears commensurate with the requirements of the type and quantum of vehicles anticipated with the proposed development.

5.6 Junction 4 - A361-South Bar Street / Oxford Road / A361-Bloxham Road

5.6.1 Some 330-metres to the southwest of the site, the A361-South Bar Street meets Bloxham Road and Oxford Road to form a signalised junction.

5.6.2 The northern arm, the A361 South Bar Street features a two-lane approach with the nearside lane facilitating ahead movements and the offside lane facilitating right turns onto Bloxham Road, both measuring 3.5-metres in width.

5.6.3 Oxford Road to the south features a single lane facilitating left turns onto Bloxham and ahead movements onto the A361, the lane measures 2.9-metres in width.

5.6.4 Finally, Bloxham Road to the west features a two-lane approach with the nearside lane facilitating left-turn movements and the offside lane facilitating right turns onto Oxford Road. Both lanes measure circa 3.2-metres wide. As such all lanes are sufficient in accommodating HGV traffic in line with figure 7.1 of MfS.

5.6.5 By virtue of the above, the geometric properties of the junction are considered appropriate to accommodate the type and quantum of vehicles anticipated with the proposed development.

5.7 Junction 5 - Oxford Road / A4260-Upper Windsor Street / A4260-Oxford Road

5.7.1 Some 610- metres to the southwest of the site, Oxford Road meets Upper Windsor Street to form a signalised T-junction.

5.7.2 Oxford Road to the north features a two-lane approach with the nearside lane facilitating left turn only movements onto Upper Windsor Street and the offside lane facilitating ahead only movements onto the A4260-Oxfrod Road. Both lanes measure circa 3-metres in width.

5.7.3 Upper Windsor Street to the east features a two-lane approach with the nearside lane facilitating left turn only movements onto the A4260-Oxford Road and the offside lane facilitating right turn only movements onto Oxford Road. Both lanes measure circa 3.2-metres wide.

5.7.4 Finally, the A4260-Oxford Road to the south features a two-lane approach with the nearside lane facilitating ahead only movements onto the Oxford Road and the offside lane facilitating right turn only movements onto Upper Windsor Street. Each lane offers a width of circa 2.9-metres.

5.7.5 Considering the above, the junction is sufficient in accommodating the type and quantum of vehicles anticipated with the proposed development.

5.8 Junction 6 - High Street / Marlborough Road / Calthorpe Street

5.8.1 Directly abutting the sites northern boundary sits a confluence of give way junctions between Calthorpe Street, Marlborough Road and High Street.

5.8.2 To the west of the junction, the High Street approach comprises a two-way single carriageway in east to west alignment measuring 6.9-metres in width across two lanes. To the east of the junction, High Street operates in a one-way eastbound arrangement, and measures circa 6.4-metres wide.

5.8.3 Marlborough road features a one-way northbound flow of traffic across two-lanes lane in broadly southeast to northwest alignment measuring 5.9-metres in width in total. On approach to the junction the carriageway accommodates a kerbed island that separates right and left turners.

5.8.4 The right-turn lane onto High Street (East) measures approximately 5-metres in width, whilst the left turn section flares from 3.8-metres to circa 13-metres for the last 10-metres leading to the give-way lines. There are two give-way lines, one dedicated to left-turns onto Calthorpe Street and one dedicated to left-turns onto High Street (West). Two cars can fit side-by-side at the give-way lines, whilst both left-turn movements share one single lane further upstream.

5.8.5 Finally, Calthorpe Street runs in a southwest - northeast alignment and measures in the order of 7.0-metres in width. It is a two-way single carriageway and forms the minor arm giving way to High Street traffic at its northern extents.

5.8.6 This junction is therefore suitable in terms of geometry to accommodate HGV traffic, as confirmed by Manual for Street's figure 7.1.

5.8.7 Pedestrians benefit from a zebra crossing on High Street, directly west of Calthrope Street, as well as two zebra crossings across Marlborough Road, a few metres south of High Street.

5.9 Junction 7 - Broad Street / Gatteridge Street / Newland Road / Marlborough Road

5.9.1 Located some 160-metres to the southeast of the site, the intersection of Broad Street, Gatteridge Street, Newland Road and Marlborough Road creates a crossroad priority junction, the Broad Street / Newland Road axis forming the major arm.

5.9.2 Broad Street to the north features a single carriageway only allowing for one-way southbound traffic, with on-street parking occurring on both sides for most of its extents. On approach to the junction, it accomodates two lanes across circa 7.8-metres, with the left lane allowing for ahead and left turns and the right lane allowing for right turns.

5.9.3 South of the intersection, Newland Road accommodates traffic in both directions, with parking occurring on one side of the carriageway in turns, leaving an effective width between 4.1 and 4.8-metres. Approaching the junction, two lanes measuring some 3.6-metres wide each accommodate left and right turn movements.

5.9.4 Gatteridge Street to the east measures circa 5.8-metres wide at the approach to the junction across one exit and one entry lane. Given the southbound only operation of Broad Street, Gatteridge Street traffic can only continue ahead onto Marlborough Road or left onto Newland Road. Further to the east, the effective width reduces to

5.9.5 Finally, Marlborough Road to the west operates as a westbound only street, therefore exit-only arm of the junction analysed herewith. It measures approximately 6.7-metres in width across two lanes.

5.9.6 Given the geometry outlined above, there might be a necessity for informal shuttle working if an HGV and car were to pass each other on Newland Road or Gatteridge Street, with reference to figure 7.1 of Manual for Streets. However, HGV traffic wouldn't be impeded on Broad Street and Marlborough Road.

5.10 Junction 8 - A4260-Upper Windsor Street / Swan Close Road / A4260-Upper Windsor Street / Gatteridge Street

5.10.1 Some 395-metres to the south-east of the site, Gatteridge Street forms the minor arm of a priority T-junction with the A4260-Upper Windsor Street. It is located only circa 30-metres to the north of a signalised junction formed by Upper Windsor Street and Swan Close Road. This is therefore considered to operate as one single junction.

5.10.2 At the approach to the junction, Gatteridge Street measures some 6.2-metres across two lanes, one in each direction. Vehicles can only turn left onto the northbound direction of Upper Windsor Street, both directions being separated by a central kerbed island north of the signalised junction.

5.10.3 All three arms feature a two-lane approach to the junction, with the northern and eastern arm accommodating a left-turn filter lane to the nearside. All lanes measure a minimum of 3.2-metres, enabling HGV traffic throughout the entire junction.

5.10.4 Pedestrians benefit from signalised puffin crossings across Swan Close Road and the southern arm of Upper Windsor Street.

5.11 Junction 9 - A4260-Cherwell Street / A4260-Windsor Street / George Street

5.11.1 Some 450-metres east of the site, the A4260 meets George Street to form a signalised junction.

5.11.2 All three arms feature a two-lane approach, each measuring a minimum of 2.8-metres in width. The southern and western arm accommodate one exit lane whilst the northern arm accommodates two exit lanes. In addition to this, George Street accommodates a 120-metres long left-turn filter lane dedicated to bus traffic.

5.11.3 Given the above, the junction appears sufficient in accommodating the type and number of vehicles associated with the development proposals.

5.12 Junction 10 - A4260-Concord Avenue / Bridge Street / A4260-Cherwell Street / Bridge Street

5.12.1 Some 610-metres northeast of the site, Bridge Street meets the A4260 to create a signalised crossroad junction.

5.12.2 The A4260-Concord Avenue / Cherwell Street to the north and south of the junction respectively feature a three-lane approach to the junction with the nearside lane facilitating left movements, the centre lane facilitating straight ahead movements and the offside lane facilitating right movements. All lanes measure a minimum of 3-metres wide.

5.12.3 Bridge Street to the east features a two-lane approach to the junction with the nearside lane facilitating left movements and the offside lane facilitating ahead and right movements, over a total width of 5.7-metres.

5.12.4 Finally, Bridge Street to the west features a single lane approach to the junction that facilitates movements in all three directions. The lane measures 3.5-metres in width.

5.12.5 The geometry of the junction enables traffic from all vehicle types. It is already known to accommodate HGV traffic as it is located in the vicinity of the Castle Quay shopping centre.

5.13 Junction 11, 12 & 13 - A422-Hennef Way / Southam Road, Concord Avenue & Ermont Way

5.13.1 Circa 1.5-kilometres to the north of the site, the A422-Hennef Way runs on a broadly east-west alignment. It links Banbury to the south and west with the M40 to the east and the A423 to Coventry to the north. Hennef Way is a two-way dual carriageway, accommodating two lanes in each direction in-between junctions, across a total width of circa 7.0-metres per direction. It is subject to a 50-mph speed limit.

Junction 11 - A422 Hennef Way / Southam Road

5.13.2 Hennef Way, Southam Road and Ruscote Avenue form a 4-arm priority roundabout, displaying three lanes per entry, two lanes per exit for the east-west arms and one exit lane for the north-south arms. Each arm accommodates a kerbed island to separate entry and exit.

5.13.3 The circulatory carriageway accommodates two lanes each measuring between 4.4- and 5.4-metres in width, whilst all entry lanes measure between 3.2 and 3.6-metres.

5.13.4 A staggered toucan crossing is provided across Hennef Way to the east of the roundabout.

Junction 12 - A422 Hennef Way / A4260 Concord Avenue

5.13.5 At this location, the 4-arm priority roundabout accommodates a two- to three-lane circulatory carriageway, each lane measuring a minimum of 4.1-metres wide.

5.13.6 The eastern and southern arms accommodate three entry lanes, whilst the western and northern arms offer two and one lane on entry respectively. Similarly to Junction 11, two lanes per exit are provided for the east-west arms and one exit lane for the north-south arms. Each arm accommodates a kerbed reservation to separate entry and exit.

Junction 13 - A422 Hennef Way / Ermont Way

5.13.7 This 4-arm priority roundabout is located some 350-metres to the west of J11 of the M40.

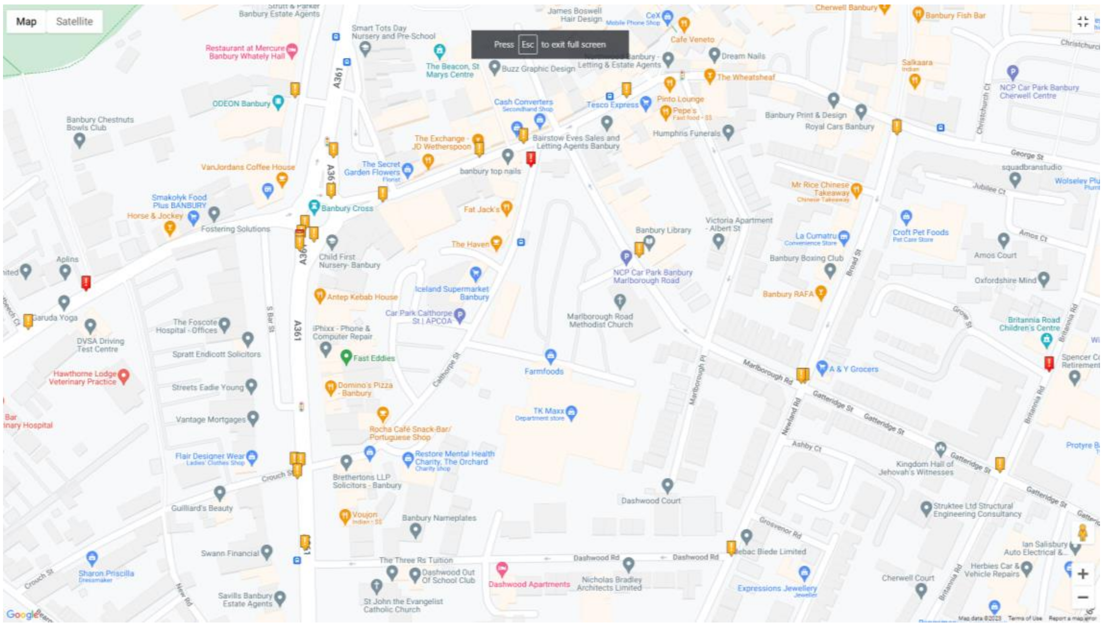
5.13.8 All 4 approach arms, as well as the circulatory carriageway are split into three lanes, all measuring a minimum of 4.0-metres in width. Both the northern and eastern approaches feature a left-turn filter lane, separated by a kerbed reservation, which subsequently gives-way to the eastern and southern exit arm respectively, some 50-metres further downstream.

5.13.9 Given the proximity of Junctions 11, 12 & 13 with the Strategic Road Network, it is already heavily trafficked and used by all vehicle types, including HGVs. The above geometry analysis therefore confirms the suitability of these junctions for any vehicle types.

5.14 Highway Accident Data

5.14.1 Personal Injury Accident (PIA) data for the study area have been obtained for the latest five-year period available from crashmap.co.uk, with the period dating from 2017 –2021, as shown in the figure below.

Figure 5-2 PIA Accident Data (2017 to 2021)



5.14.2 The available data identifies a total of 16 personal injury accidents in the vicinity of the site, with two accidents classified as 'severe'. It is evident from the above that there is not clustering of accidents that might be suggestive of a deficient in the layout or geometry of the highway network, which would then indicate an unacceptable safety risk.

5.14.3 Indeed, by way of further assessment, the accident data has been reviewed in the context of the risk assessment matrix provided in the Institute of Highways & Transport (IHT) 'Road Safety audit' document, published in October 2008. In this respect, the assessed risk of an accident occurring is related to various factors including vehicle demand, the speed of traffic, and geometric properties of the highway.

5.14.4 The assessed 'severity' of a collision is determined by impact speed, the type of vehicles involved in the collision, and the protection afforded to victims. The resultant risk is categorised within the standard matrix – shown below – as 'low', 'medium, 'high', or 'very high'.

Table 5-1 IHT Accident Severity Matrix

		Frequency of Collision			
		More than 1 per Year	One every 1-4 Years	One every 5-10 Years	Less than 1 per 10 Years
Severity	Fatal	Very High	High	High	Medium
	Serious	High	High	Medium	Medium
	Slight	High	Medium	Medium	Low

5.14.5 Typically, it is accepted that a 'low' risk is immaterial, and consideration of mitigation would not be required. Where 'medium' risk ratings are indicated, mitigation is not a prerequisite, but practical solutions should be considered where possible. 'High' risk ratings indicate that mitigation would be desirable, whereas 'very high' risk would require immediate intervention. The level of risk assessed for the accidents experienced at junction is shown in the below table.

Table 5-2 Resultant Classification of Risk – Applied

Junction	Severity of Collision		
	Slight	Serious	Fatal
1) A361-Southam Road / Castle Street / A361-Horse Fair / B4100-Warwick Road	3	0	0
2) A361-Horse Fair / High Street / A361- South Bar Street / B4035-West Bar Street	8	1	0
3) A361-South Bar Street / Calthorpe Street / A361-South Bar Street / Crouch Street	3	0	0
4) A361-South Bar Street / Oxford Road / A361-Bloxham Road	3	0	0
5) Oxford Road / A4260-Upper Windsor Street / A4260-Oxford Road	1	1	0
6) High Street / Marlborough Road / Calthorpe Street	1	1	0
7) Broad Street / Gatteridge Street / Newland Road / Marlborough Road	2	0	0
8) A4260-Upper Windsor Street / Swan Close Road / A4260-Upper Windsor Street / Gatteridge Street	1	0	0
9) A4260-Cherwell Street / A4260-Windsor Street / George Street	2	1	0
10) A4260-Concord Avenue / Bridge Street / A4260-Cherwell Street / Bridge Street	7	1	0
11) A423-Southam Road / A422-Hennef Way / A361-Southam Road / A422-Ruscote Avenue	7	1	0
12) Grimsbury Green / A422-Hennef Way / A4260-Concord Avenue / A422-Hennef Way	16	4	0
13) Wildmere Road / A422 / Ermont Way / A422-Hennef Way	17	1	0

5.14.6 As shown by the above analysis, the level of risk for the majority of the study area is a 'medium' risk of a slight accident occurring, save for the Banbury Cross Roundabout, the Bridge Street signalised junction and the and three roundabouts along Hennef Way (Junctions 11-13), which exhibit a 'high' risk of a slight accident. However, it is important to consider the high volume of traffic that passes through the aforementioned junctions on a daily basis. Indeed, AADT data extracted from Oxfordshire County Council's Annual Average Daily Traffic data evidences a daily flow of circa 39,800 vehicles on the A422-Hennef Way.

5.14.7 In view of the above and in combination with the magnitude of change in traffic demand identified later within this report, it is concluded that there is no existing safety issue that would be created or materially worsened as a result of the proposed development. Indeed, the development proposals afford a reduction in vehicular traffic which would give rise to a benefit in terms of highway safety.

5.14.8 On the basis of the above it is considered that the study area highway network does not currently suffer any abnormal highway safety risk related to the layout or geometry of the highway network that may be materially worsened by the proposed development.

5.14.9 In this regard, the proposals would be acceptable under the terms of paragraph 111 of the NPPF.

6 EXISTING PARKING DEMAND

6.1 Introduction

6.1.1 It is noted that the previous pre-application advice outlines a requirement to consider the impact of the loss of parking on the surrounding area. As such, this section of the assessment considers the development effects with regards to the removal of the public car park on the site and the capacity of alternative car parks across Banbury Town Centre.

6.2 Parking Beat Surveys

6.2.1 In order to determine the existing demand for parking at the site, 30-minute parking beat surveys were undertaken over a Thursday (market day), Saturday, and Sunday across 15 car parks within a 400-metre or 5-minute-walk from the site.

6.2.2 The surveys followed the below criteria across the corresponding dates and times: -

- Saturday 11/04/23 – 09:00-19:00
- Sunday 12/04/23 – 10:00-17:00
- Thursday 16/04/23 – 07:00-19:00

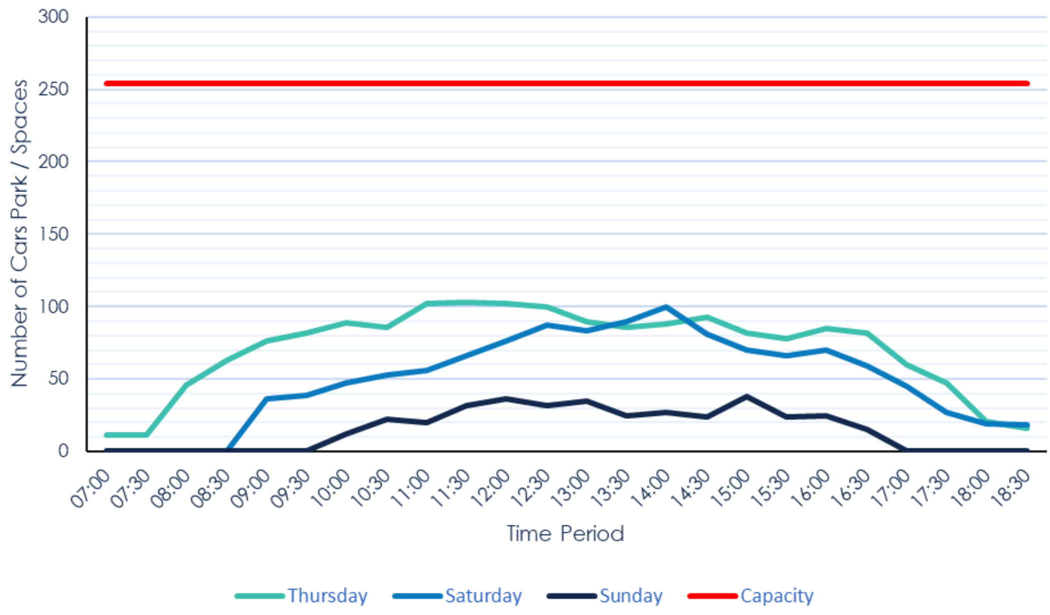
6.2.3 The above dates and times reflect the operational hours of shops and services within the Town Centre. The full survey data is contained at Appendix G of this report.

6.3 Parking Beat survey Results

6.3.1 Following the above, the figure below outlines the recorded demand at the Marlborough Road Car Park across a typical weekday, Saturday and Sunday. From the below analysis, it is evident that the demand for the Marlborough Road Car Park peaks at 103 vehicles, which is equivalent to 41% of the total capacity of 254 spaces.

6.3.2 Section 9 of this report details the operation of neighbouring car parks, and how they can accommodate the current on-site parking demand.

Figure 6-1 Marlborough Road Car Park Demand



6.3.3 The removal of the Marlborough Road Car Park would alter the total capacity of the 15 car parks surveyed from 1,150 spaces to 896 spaces. This assessment has considered the total demand across all 15 car parks surveyed against the potential future parking capacity, with the results presented within the figure below.

Figure 6-2 Resultant Banbury Town Centre Parking Capacity verus Demand

6.3.4 It is evident from the above, that there is still significant spare capacity across the nearby car parks within central Banbury to accommodate the existing Marlborough Road demand with its removal as part of the development proposals. Indeed, the surveys indicate that at peak demand, the town centre provides some 22% residual capacity with 201 spare spaces. Indeed, drilling into the data this corresponds with circa 196% of the peak demand for Marlborough Road car park – as shown within Figure 6-1.

6.3.5 Further, it is implicit that some demand at the Marlborough Road car park is derived from the existing land-uses on site that will be removed as part of the development proposals.

6.3.6 Following the above, it is evident that the proposed redevelopment of the site would not materially affect the ability of visitors to park within Banbury Town Centre using the identified car parks that are in close proximity.

7 TRAFFIC IMPACT: ASSESSMENT SCENARIOS

7.1 Introduction

7.1.1 This section of the report outlines the assessment scenarios considered in order to determine the likely impact of the development proposals.

7.2 Assessment Scenarios

7.2.1 To provide a robust assessment of the development proposals, this report considers traffic impact(s) and junction capacity assessments for the following scenarios: -

- 2023 Baseline (Survey Year)
- 2028 Baseline
- 2028 Baseline + Development

8 EXISTING TRAFFIC DEMAND

8.1 Introduction

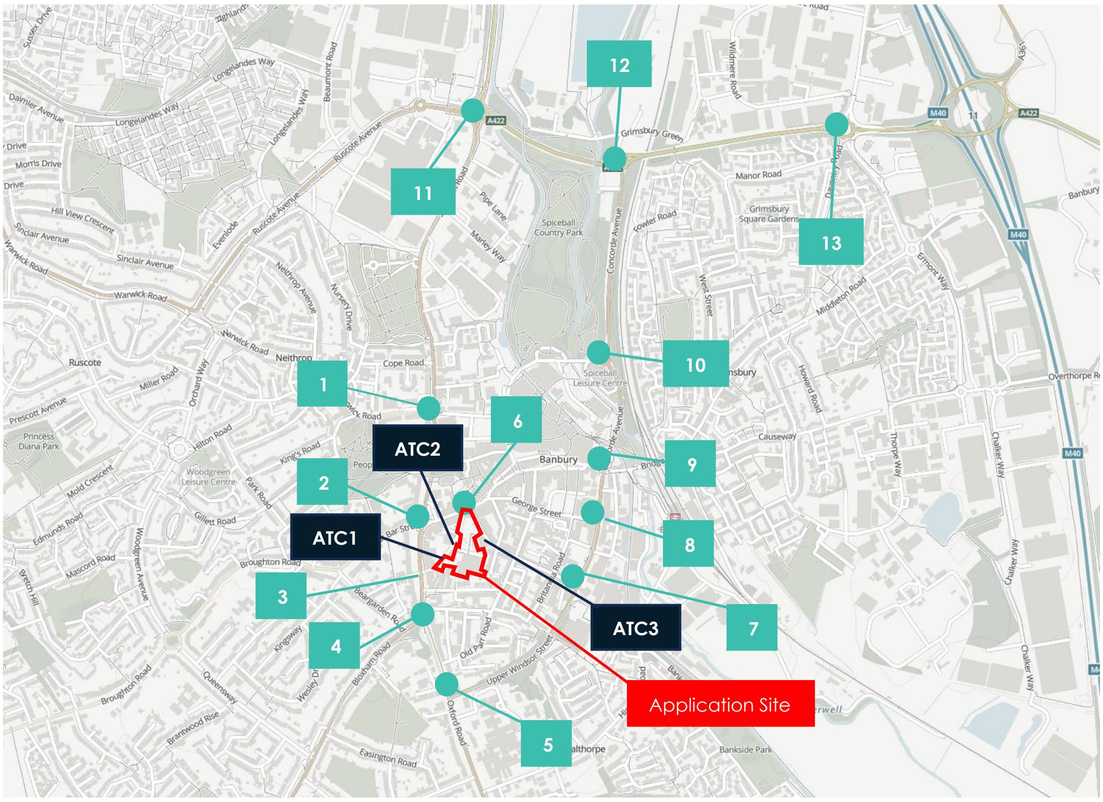
8.1.1 This section of the report identifies the cumulative baseline traffic conditions across the study area highway network, upon which any impact from the development proposals will be considered.

8.2 2023 Traffic Surveys

8.2.1 Traffic flows surveys were undertaken in the week commencing 22nd March 2023 – with the surveys being void of public holidays and major roadworks across the study area. As such, the surveys are representative of typical conditions.

8.2.2 In this context, all junctions identified in the study area as per Section 5 were surveyed via manual classified counts (MCC) and queue surveys. The junction surveys were supplemented by three Automatic Traffic Counts (ATCs). For context, the proposed study area highway network, and survey locations are shown in the below figure.

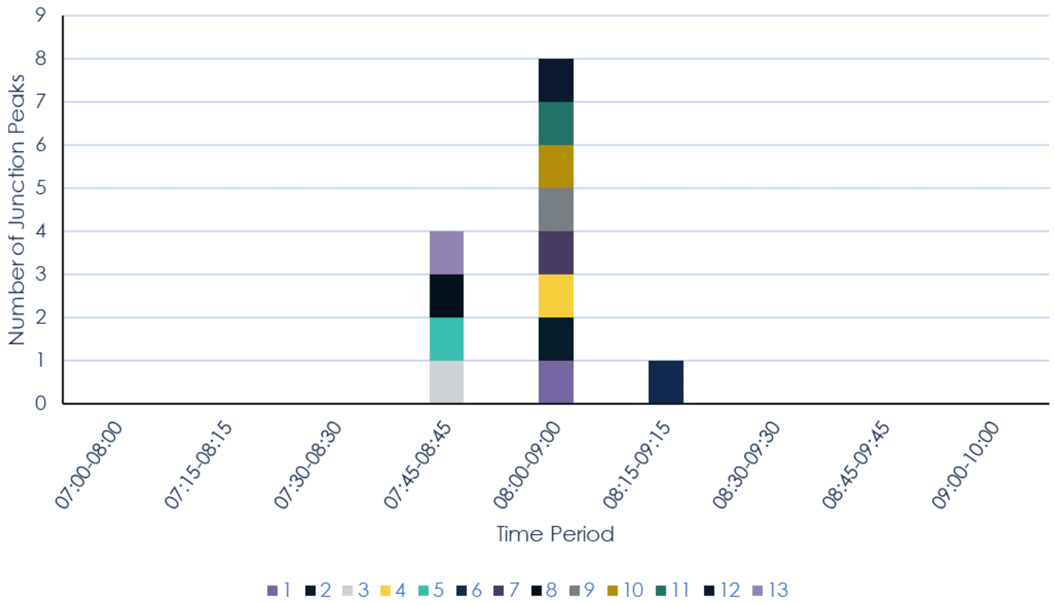
Figure 8-1 Survey Locations

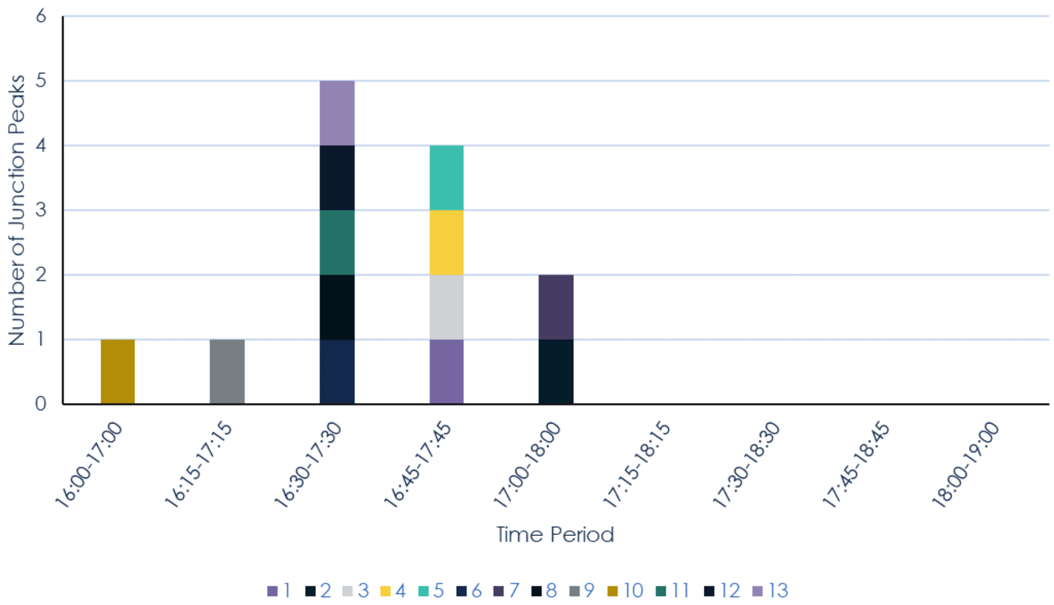


8.3 Derivation of Peak Hour

8.3.1 For the purposes of rigour, the assessment peak hour has been determined on the basis of total network demand together with traffic volume at each junction. In this way, the Figure below shows the total network counts for each 15-minute segment, for each surveyed time period.

Figure 8-2 Determination of Modelled Peak Periods





8.3.2 Based on the above, the assessment adopts a morning peak hour of 08:00-09:00. With regards, to the evening peak, it is apparent that the hour of 16:30-17:30 contains the greater number of junctions peak traffic flows. However, three of the five junctions are the roundabout junctions along the A422-Hennef Way – which are somewhat remote from the site and are likely to receive a diluted development traffic flow as trips distribute across the study area. Conversely, the hour of 16:45-17:45 contains the second highest number of junction peaks and importantly, contains the peaks for junctions 1,3,4, and 5 which are located in relative proximity to the site and are therefore likely to be impacted by the greatest percentage change in traffic flows, borne from the development proposals.

8.3.3 As such, this assessment has assumed an evening peak period of 16:45-17:45.

8.4 2023 Baseline Traffic Flows

8.4.1 The resultant 2023 Baseline traffic flows for both the weekday morning and evening peak periods are presented in traffic flow diagram contained at Appendix H.

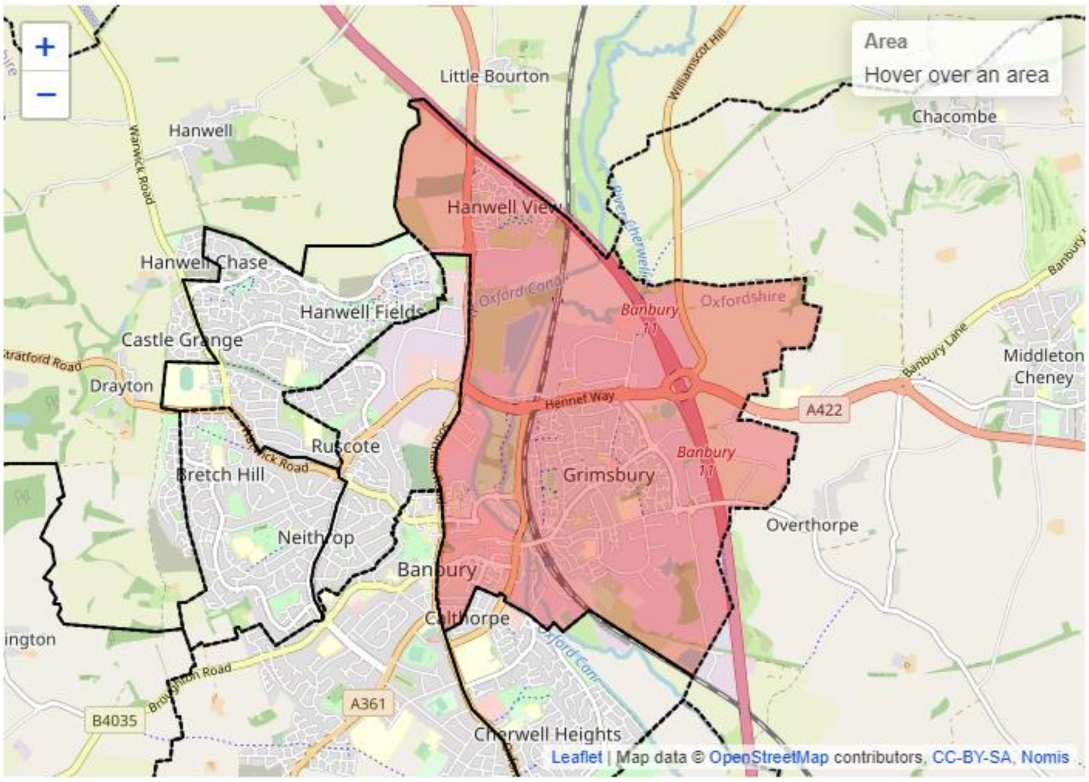
8.5 2028 Baseline Traffic Flows

8.5.1 To account for traffic growth occurring between the survey year of 2023 and future year of 2027, ambient growth factors have been obtained via the TEMPro database (version 8.0) – with the following selection criteria specified: -

NTEM Dataset > MSOA E02005924 > URBAN > PRINCIPAL ROADS

8.5.2 For context, the Middle Super Output Area ref: E02005924 are shown on the below figure with reference to the application site.

Figure 8-3 MSOA Used for TEMPro Growth Factors



8.5.3 The resultant growth factors are provided in the table below and have been subsequently applied to the 2023 Baseline traffic flows where required.

8.5.4 The 2027 Baseline traffic flows can be found at Appendix H of this report for both the morning and evening peak periods, whilst the detailed traffic calculations are contained at Appendix I.

9 EXTANT TRIP GENERATION

9.1 Introduction

9.1.1 To reflect the development proposals, this section of the report considers the trip generation of the existing land-uses at the site. Such a consideration allows for the discount of the extant land-use trips from the 2028 Baseline traffic flows before the addition of the development traffic flows to calculate the 2028 Baseline + Development scenario.

9.2 Extant Trip Generation

9.2.1 Given the site is currently occupied by both non-food and food retail units it is necessary to account for their existing trip generation potentials, against which the proposed development should be considered.

9.2.2 In this way, the trip generation potential of the existing land-uses have been determined with reference to the industry standard TRICS database, version 7.10.1. For clarity, the TRICS database calculates an average vehicular trip rate from a number of sites similar to the development in question, which have been selected based on a series of characteristics (such as, size and composition and geographical location for example).

9.2.3 With regards to the existing land-uses, the following selection criteria have been considered applicable – with all sites in Ireland, Scotland, and Greater London excluded from the assessment.

Table 9-1 TRICS Selection Criteria – Extant Land-Uses

Selection Criteria	
01 - Retail	01 - Retail
A – Food Superstore	G – Other Individual Non-Food Superstore
Excluding sites in; Ireland, Scotland, and Greater London	Excluding sites in; Ireland, Scotland, and Greater London
Town Centre & Edge of Town Centre	Town Centre & Edge of Town Centre

9.2.4 The selection criteria have subsequently provided the trip rates presented in the table below. The full TRICS outputs have been provided at Appendix J of this report.

Table 9-2 Vehicular Trip Rates – Food Retail & Non-Food Retail

Time Range	Food Retail			Non-Food Retail		
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
06:00-07:00	0.355	0.132	0.487	0.143	0.057	0.2
07:00-08:00	1.623	1.255	2.878	0.454	0.324	0.778
08:00-09:00	**2.205**	**1.691**	**3.896**	**1.524**	**1.119**	**2.643**
09:00-10:00	2.773	2.301	5.074	1.394	1.184	2.578
10:00-11:00	3.091	2.612	5.703	1.394	1.411	2.805
11:00-12:00	3.241	3.068	6.309	1.313	1.329	2.642
12:00-13:00	3.621	3.176	6.797	1.086	1.265	2.351
13:00-14:00	3.103	3.383	6.486	1.281	0.973	2.254
14:00-15:00	3.341	3.448	6.789	1.005	1.119	2.124
15:00-16:00	3.141	3.414	6.555	1.329	0.957	2.286
16:00-17:00	3.279	3.241	6.52	1.2	1.329	2.529
17:00-18:00	**3.605**	**3.824**	**7.429**	**0.929**	**1.393**	**2.322**
18:00-19:00	3.088	3.352	6.44	0.464	0.948	1.412
19:00-20:00	2.347	3.049	5.396	0	0.268	0.268
20:00-21:00	2.029	2.405	4.434	0	0	0
21:00-22:00	0.894	1.283	2.177	0	0	0
22:00-23:00	0.02	0.132	0.152	0	0	0
Daily Trip Rates:	**41.756**	**41.766**	**83.522**	**13.516**	**13.676**	**27.192**

9.2.5 The above trip rates have been factored by 3,476sqmGFA for the non-food retail store and 463sqm GFA for the food store, accounting for an overall GFA of circa 4,000sqm. The resultant trip generation potential of the existing site is presented in table below.

Table 9-3 Vehicular Trip Generation Potential – Food Retail & Non-Food Retail

Time Range	Food Retail			Non-Food Retail		
	Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
06:00-07:00	2	1	2	5	2	7
07:00-08:00	8	6	13	16	11	27
08:00-09:00	**10**	**8**	**18**	**53**	**39**	**92**
09:00-10:00	13	11	23	48	41	90
10:00-11:00	14	12	26	48	49	98
11:00-12:00	15	14	29	46	46	92
12:00-13:00	17	15	31	38	44	82
13:00-14:00	14	16	30	45	34	78
14:00-15:00	15	16	31	35	39	74
15:00-16:00	15	16	30	46	33	79

16:00-17:00	15	15	30	42	46	88
17:00-18:00	**17**	**18**	**34**	**32**	**48**	**81**
18:00-19:00	14	16	30	16	33	49
19:00-20:00	11	14	25	0	9	9
20:00-21:00	9	11	21	-	-	-
21:00-22:00	4	6	10	-	-	-
22:00-23:00	0	1	1	-	-	-
Daily Trip Rates:	**470**	**475**	**945**	**193**	**193**	**387**

9.2.6 The above table indicates that existing land-uses combine to generate some 110 two-way vehicle movements within the traditional morning peak period (08:00-09:00), whilst 115 two-way vehicle movements occur across the traditional evening peak period (17:00-18:00). The above are broadly equivalent to a vehicular trip every 30 seconds across both peaks.

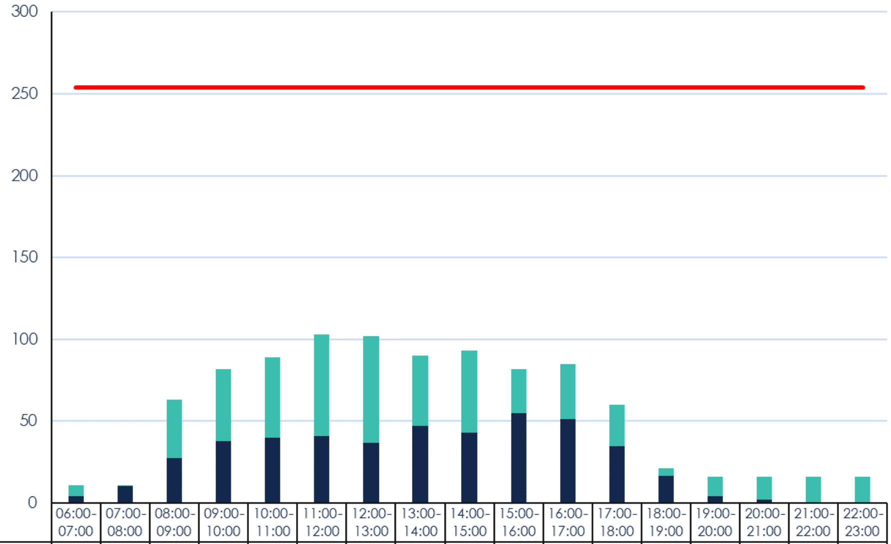
Parking Accumulation & Off-Site Trips

9.2.7 To ascertain the demand for the public car park, i.e., commuting trips / shopping or leisure trips that do not visit the retail land-uses on site, the above TRICS data has been used to determine the parking accumulation in relation to the parking beat survey undertaken on Thursday 16th March 2023.

9.2.8 In this way, the surplus parking demand not attributable to the retail land-uses on site have been assigned to off-site activity and have not been removed from the 2028 Baseline + Development scenario as part of the development proposals. Indeed, the parking attributed to off-site activities has been factored by the TEMPro growth factors across the study area highway network.

9.2.9 The results of the parking accumulation analysis are provided within the figure below.

Figure 9-1 Parking Accumulation Analysis



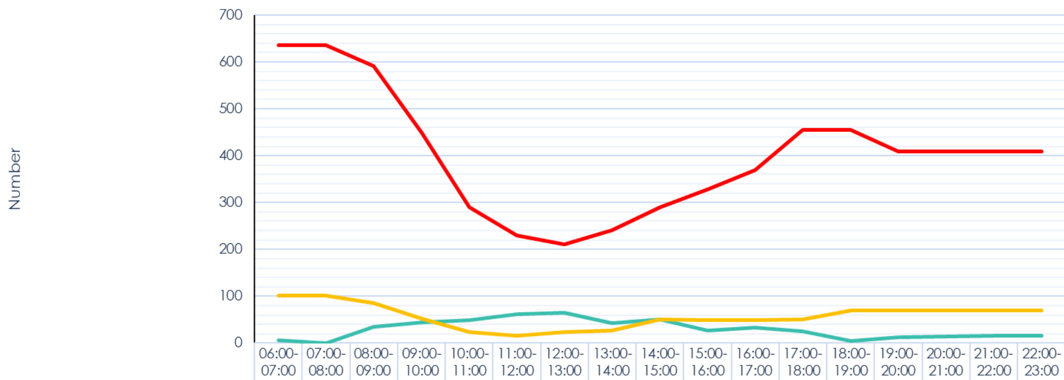
	06:00-07:00	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00	19:00-20:00	20:00-21:00	21:00-22:00	22:00-23:00
Rest of Parking Demand	7	1	35	44	49	62	65	43	50	27	34	26	4	12	14	16	16
Retail Land Uses	4	10	28	38	40	41	37	47	43	55	51	34	17	4	2	0	0
Car Park Capacity	254	254	254	254	254	254	254	254	254	254	254	254	254	254	254	254	254

9.2.10 From the above, it is evident that some 35 & 26 vehicles would be attributable to off-site activity in the traditional morning (08:00-09:00) and evening (17:00-18:00) peak periods.

9.2.11 In terms of the reassignment of those off-site activity trips, taking the data provided in Section 6, this report has assessed the capacity of the neighbouring car parks at Calthorpe Street West Long Stay, Calthorpe Street West Short Stay, and Calthorpe Street East Short Stay Car parks alongside the additional car parks within 400-metres of the Marlborough Road Car Park.

9.2.12 As part of a robust assessment the capacities of the car parks in the below analysis have been factored to 90% of their total to reflect suboptimal usage of car parks nearing capacity - the results are presented in the figure below.

Figure 9-2 Neighbouring & Local Car Park Demand vs Capacity



	06:00-07:00	07:00-08:00	08:00-09:00	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00	19:00-20:00	20:00-21:00	21:00-22:00	22:00-23:00
Residual Demand	7	1	35	44	49	62	65	43	50	27	34	26	4	12	14	16	16
Space Space at Calthorpe St.	102	102	85	52	23	16	23	27	50	49	49	51	69	69	69	69	69
Spare Space ~400m of Site	636	636	592	449	290	230	211	242	290	328	370	456	456	409	409	409	409

Time Period

9.2.13 From the above, it is apparent that the neighbouring Calthorpe Street West & Calthorpe Street East car parks have sufficient capacity to accommodate peak hour demand, with 50 spare spaces during the morning peak hour, whilst the evening peak period shows some 26 space spaces. As such, for the purposes of this assessment the peak hour vehicles have been reassigned to the neighbouring car parks.

9.2.14 It is noted that from 10:00 to 14:00 the residual demand for the neighbouring car parks would exceed the spare capacity, however, the local car parks – all within 400-metres of the proposed site - provide sufficient capacity to accommodate all demand through the day. Indeed, at maximum at 11:00-12:00 and 12:00-13:00 – where residual demand is highest, the nearby car parks, all within a 400-metre radius of the site exhibit some 230 and 211 spare spaces, respectively.

10 PROPOSED TRIP GENERATION

10.1 Introduction

10.1.1 This section of the report identifies the trip generation potential of the proposed development at key periods throughout a typical weekday, alongside the daily total quantum of trips.

10.2 Development Trip Generation Potential

10.2.1 Trip rates for the proposed development have been established using the industry standard trip generation tool – TRICS, database version 7.10.1. In order to obtain relevant trip rates for the proposed land-use, the following selection criteria have been applied as per the table below. Full criteria and TRICS outputs are contained at Appendix J.

Table 10-1 TRICS Selection Criteria – Proposed Development

Selection Criteria
03- Residential
C – Flats Privately Owned / A - Houses Privately Owned
Excluding sites in; Ireland, Scotland, and Greater London
Edge of Town Centre

10.2.2 By way of a robust assessment, this assessment has assumed that 100% of the development is to be privately owned. With this, the following trip generation rates have been derived from the TRICS database, factored in accordance with the proposed number of units as per Section 3 of this report.

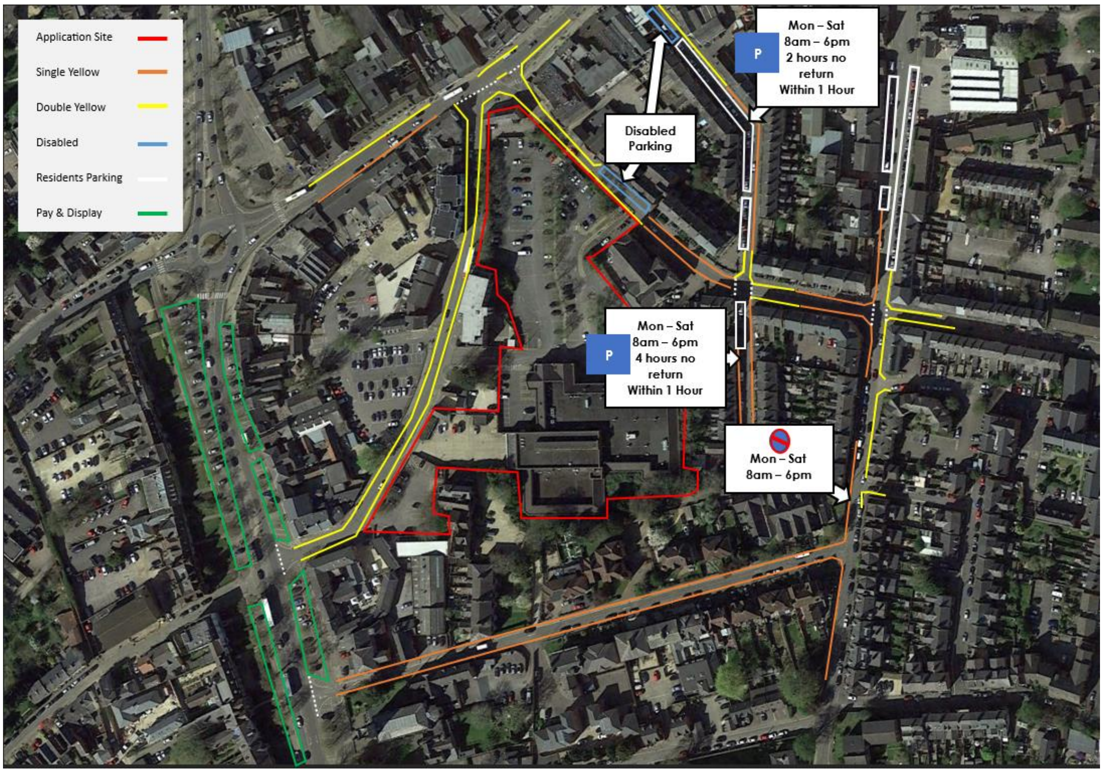
Table 10-2 Future Vehicular Trip Generation Potential - 221 Flats

Time Range	Trip Rates			Trips			Parking Accumulation
	In	Out	2-way	In	Out	2-way	66
07:00-08:00	0.038	0.198	0.236	8	44	52	66
08:00-09:00	**0.069**	**0.221**	**0.290**	**15**	**49**	**64**	31
09:00-10:00	0.071	0.079	0.150	16	17	33	-3
10:00-11:00	0.069	0.086	0.155	15	19	34	-5
11:00-12:00	0.071	0.093	0.164	16	21	36	-8

12:00-13:00	0.112	0.112	0.224	25	25	50	-13
13:00-14:00	0.074	0.081	0.155	16	18	34	-13
14:00-15:00	0.055	0.074	0.129	12	16	29	-15
15:00-16:00	0.124	0.088	0.212	27	19	47	-19
16:00-17:00	0.155	0.081	0.236	34	18	52	-11
17:00-18:00	**0.181**	**0.100**	**0.281**	**40**	**22**	**62**	5
18:00-19:00	0.262	0.131	0.393	58	29	87	23
Daily Trip Rates:	**1.281**	**1.344**	**2.625**	**283**	**297**	**580**	

10.2.3 The analysis of the nearby highways arrangements and parking provision, included in the below figure, confirms that there is no viable alternative for residents not benefiting from a car parking space within the undercroft car park to park elsewhere in the vicinity.

Figure 10-1 Parking Restrictions around Site



10.2.4 The generation of car trips is therefore capped by the car parking provision of 66 spaces. The parking accumulation calculated in the table above shows that TRICS overestimates the number of people able to travel by car by 22%. The vehicular rates have therefore been reduced by this amount in order to reach a minimum parking accumulation of 0. The resultant trip rates and trips are shown in the below table.

Table 10-3 Adapted Vehicular Trip Generation Potential - 221 Flats

Time Range	Trip Rates			Trips			Parking Accumulation
	In	Out	2-way	In	Out	2-way	66
07:00-08:00	0.029	0.154	0.183	7	34	40	39
08:00-09:00	**0.054**	**0.171**	**0.225**	**12**	**38**	**50**	13
09:00-10:00	0.055	0.061	0.116	12	14	26	11
10:00-11:00	0.054	0.067	0.120	12	15	27	8
11:00-12:00	0.055	0.072	0.127	12	16	28	4
12:00-13:00	0.087	0.087	0.174	19	19	38	4
13:00-14:00	0.057	0.063	0.120	13	14	27	3
14:00-15:00	0.043	0.057	0.100	9	13	22	0
15:00-16:00	0.096	0.068	0.164	21	15	36	6
16:00-17:00	0.120	0.063	0.183	27	14	40	19
17:00-18:00	**0.140**	**0.078**	**0.218**	**31**	**17**	**48**	33
18:00-19:00	0.203	0.102	0.305	45	22	67	55
Daily Trip Rates:	**0.994**	**1.043**	**2.036**	**220**	**230**	**450**	

10.2.5 Alongside the blocks of flats, nine townhouses are proposed, which will all have one car parking space. The TRICS rates have therefore been kept as calculated by the software. The table below displays the trips associated with the houses.

Table 10-4 Vehicular Trip Generation Potential - 9 houses

Time Range	Trip Rates			Trips		
	In	Out	2-way	In	Out	2-way
07:00-08:00	0.073	0.22	0.293	1	2	3
08:00-09:00	**0.142**	**0.306**	**0.448**	**1**	**3**	**4**
09:00-10:00	0.164	0.121	0.285	1	1	3
10:00-11:00	0.116	0.121	0.237	1	1	2
11:00-12:00	0.103	0.116	0.219	1	1	2
12:00-13:00	0.116	0.159	0.275	1	1	2
13:00-14:00	0.147	0.142	0.289	1	1	3
14:00-15:00	0.129	0.164	0.293	1	1	3
15:00-16:00	0.177	0.147	0.324	2	1	3
16:00-17:00	0.254	0.121	0.375	2	1	3
17:00-18:00	**0.306**	**0.177**	**0.483**	**3**	**2**	**4**
18:00-19:00	0.19	0.138	0.328	2	1	3
Daily Trip Rates:	**1.917**	**1.932**	**3.849**	**17**	**17**	**35**

10.2.6 For reference, the total number of trips associated with the residential development are shown in the following table.

Table 10-5 Vehicular Trip Generation - Whole Site

Time Range	Trips		
	In	Out	2-way
07:00-08:00	7	36	43
08:00-09:00	13	41	54
09:00-10:00	14	15	28
10:00-11:00	13	16	29
11:00-12:00	13	17	30
12:00-13:00	20	21	41

13:00-14:00	14	15	29
14:00-15:00	11	14	25
15:00-16:00	23	16	39
16:00-17:00	29	15	44
17:00-18:00	34	19	53
18:00-19:00	47	24	70
Daily Trip Rates:	237	248	485

10.2.7 The table above suggest that the proposed development is forecast to generate some 54 and 53 two-way vehicle trips in the traditional morning (08:00-09:00) and evening (17:00-18:00) peak periods, respectively. Over the course of an hour this equates to broadly 1 additional vehicle every 60 seconds. As such, the development proposals are not considered to be material in the context of highway safety or capacity in isolation.

10.3 Impact of Development

10.3.1 Following the above this assessment has compared the anticipated trip generation potential of the proposed development to the extant land-uses on the site. This comparison provides an indication of the likely change in traffic volume during the traditional highway peak periods and also the total daily quantum. With this, the potential change in trip generation at the site is summarised in the table below.

Table 10-6 Magnitude of Trip Generation Potential Change

Time Range	Arrivals	Departures	Two-Way
08:00-09:00	-50	-6	-53
17:00-18:00	-15	-47	-63
18:00-19:00*	16	-25	-9
Total Daily	**-426**	**-421**	**-847**

**this time period has also been included to calculate net change at anticipated evening peak period for the proposed development.*

10.3.2 The table above shows that proposed development is forecast to generate a maximum of 53 fewer vehicular trips during traditional morning peak period, whilst the traditional evening peak period (17:00-18:00) exhibits a reduction of 63 trips. Indeed, the number of total daily two-way trips is expected to decline by some 847 vehicles against the existing land-uses.

10.3.3 From the above analysis, it is therefore implicit that given the proposals do not result in any increase in traffic volume that the proposals must be acceptable in the context of highway safety and capacity.

10.3.4 Any reduction in traffic demand would give rise to a benefit in highway safety and capacity terms. For the comfort of the Local Highway Authority the following sections of this report consider the impact of the proposed development in further detail.

10.4 Trip Distribution & Assignment

10.4.1 Vehicular trips from the proposed development have been distributed across the study area highway network in accordance with Census 2011 dataset; WU03EW (Location of Usual residence and place of work, by method of travel to work) for the appropriate Middle Super Output Area. In this way, MSOA area ref: E02005924 (Cherwell 004) has been used to determine the distribution of trips to and from the proposed development. For context, the MSOA used for this analysis accords with that utilised for TEMPro as per Figure 8-3.

10.4.2 Subsequent assignment across the study area highway network has been informed by quickest path analysis per Origin / Destination utilising Google Maps typical congestion data. The table below sets out the vehicle trip distribution for the proposed development, whilst the full assessment of Census journey to work data is provided at Appendix K.

Table 10-7 Resultant Development Trip Distribution

Zone	Entry / Exit Link	Percentage
A	SOUTHAM ROAD	15.98%
B	GRIMSBY GREEN	0.00%
C	WILDMERE ROAD	5.33%
D	A422 E (M4)	32.04%
E	ERMONT WAY	0.13%
F	BRIDGE STREET	10.34%
G	SWAN CLOSE ROAD	0.00%
H	A4260 S	13.86%
I	A361	11.28%
J	CROUCH STREET	0.00%
K	B3045	3.66%

L	B4100	7.37%
M	A422 W	0.00%

10.5 Development Traffic Flows

10.5.1 The development traffic flows, having been assigned to the network are shown on the network flow diagrams contained at Appendix H for both the morning and evening peak periods.

10.6 2028 Base + Development Traffic Flows

10.6.1 Following the above, application of the determined development traffic flows to the 2027 Baseline provides an indication of the likely traffic demand with the development in situ. The 2028 Baseline + Development traffic flows are shown for both the morning and evening peak periods within the network diagrams contained at Appendix H.

10.7 Section Conclusion

10.7.1 Based on the above analysis, the trip rates associated with the proposed development are not considered material or discernible in the case of highway safety or capacity for the surrounding highway network. Indeed, as per Section 10.3 the development can be anticipated to create a reduction of some 804 vehicular trips relative to the existing retail land-uses.

10.7.2 The traffic impact of the proposed development therefore cannot be considered to be severe in terms of highway safety or capacity.

11 TRAFFIC IMPACT

11.1 Introduction

11.1.1 This section of the report considers the relative effects of the associated change in traffic demand and subsequent impact on capacity across the study area highway network borne from the proposed development.

11.2 Traffic Impact – Magnitude of Change

11.2.1 The resultant traffic flows for the 2027 Baseline + Development scenario identified above have been compared to the 2027 Baseline to identify the magnitude of change in flows. This has been undertaken for both peak periods, with the results presented in the table below.

Table 11-1 Percentage Impact

Junction	Arm	2028 Baseline		2028 Baseline + Dev		% Change	
		AM	PM	AM	PM	AM	PM
J1	1 - Southam Rd	404	426	406	433	0.4%	1.6%
	2 - Castle St	437	692	437	692	-0.1%	0.0%
	3 - North Bar St	751	876	746	865	-0.8%	-1.3%
	4 - Warwick Rd	665	459	666	462	0.1%	0.7%
	Junction Total	**2,258**	**2,454**	**2,254**	**2,452**	**-0.2%**	**-0.1%**
J2	1 - A361 Horse Fair	851	849	851	855	0.1%	0.8%
	2 - High St	335	533	307	501	-8.3%	-5.9%
	3 - A361 South Bar St	601	572	612	578	1.8%	1.1%
	4 - B4035 West Bar St	473	375	472	378	-0.2%	0.6%
	Junction Total	**2,259**	**2,329**	**2,242**	**2,312**	**-0.7%**	**-0.7%**
J3	1 - A361 (N)	662	678	666	690	0.5%	1.9%
	2 - Calthorpe St	45	142	50	128	12.7%	-9.8%
	3 - A361 (S)	686	582	679	588	-1.0%	1.0%
	4 - Crouch St	30	31	29	30	-2.5%	-1.5%
	Junction Total	**1,423**	**1,433**	**1,424**	**1,437**	**0.1%**	**0.3%**
J4	1 - South Bar St	637	699	634	683	-0.6%	-2.2%
	2 - Oxford Rd	697	770	693	773	-0.6%	0.3%
	3 - Bloxham Rd	522	416	520	420	-0.5%	0.8%
	Junction Total	**1,856**	**1,885**	**1,846**	**1,876**	**-0.6%**	**-0.5%**
J5	1 - A4260 (N)	700	700	696	691	-0.5%	-1.3%
	2 - Upper Windsor St	336	374	336	374	0.0%	0.0%
	3 - A4260 (S)	861	850	857	852	-0.5%	0.3%
	Junction Total	**1,897**	**1,924**	**1,889**	**1,917**	**-0.4%**	**-0.4%**

J6	1 - Northern Arm	3	24	3	24	0.0%	0.0%
	3 - Marlborough Rd	407	582	420	572	3.3%	-1.7%
	4 - Calthorpe St	99	141	109	147	10.5%	4.4%
	5 - High St (W)	437	349	434	347	-0.7%	-0.6%
	Junction Total	**946**	**1,096**	**966**	**1,090**	**2.2%**	**-0.5%**
J7	1 - Bridge St	278	409	260	403	-6.3%	-1.4%
	2 - Gatteridge St	212	196	187	179	-11.9%	-8.3%
	3 - Newland Rd	79	58	79	58	0.0%	0.0%
	Junction Total	**570**	**662**	**527**	**640**	**-7.5%**	**-3.3%**
J8	1 - Windsor St	840	882	839	880	-0.2%	-0.2%
	2 - Swan Close Rd	633	633	608	617	-4.0%	-2.6%
	3 - Upper Windsor St	459	415	459	415	0.0%	0.0%
	4 - Gatteridge St	76	49	76	49	0.0%	0.0%
	Junction Total	**2,009**	**1,979**	**1,982**	**1,961**	**-1.3%**	**-0.9%**
J9	1 - Cherwell St	968	1,011	950	1,005	-1.8%	-0.6%
J9	2 - Windsor St	824	734	824	734	0.0%	0.0%
	3 - George St	395	443	411	448	4.0%	1.3%
	Junction Total	**2,187**	**2,187**	**2,186**	**2,187**	**-0.1%**	**0.0%**
J10	1 - Concord Ave.	769	790	763	792	-0.7%	0.3%
	2 - Bridge St E	691	574	680	567	-1.6%	-1.2%
	3 - Cherwell St	1,096	1,027	1,113	1,035	1.6%	0.7%
	4 - Bridge St W	69	132	68	131	-0.7%	-1.0%
	Junction Total	**2,624**	**2,524**	**2,624**	**2,525**	**0.0%**	**0.1%**
J11	1 - A423	917	792	919	799	0.2%	0.9%
	2 - A422	1,348	1,593	1,348	1,593	0.0%	0.0%
	3 - A361	433	621	429	616	-0.9%	-0.9%
	4 - Ruscote Ave.	1,016	977	1,015	977	0.0%	0.0%
	Junction Total	**3,714**	**3,983**	**3,712**	**3,984**	**-0.1%**	**0.0%**
J12	1 - Grimsbury Ave.	48	44	48	44	0.0%	-0.4%
	2 - A422 E	1,914	2,206	1,909	2,209	-0.3%	0.1%
	3 - Concord Ave.	712	889	726	896	2.0%	0.7%
	4 - A422 (W)	1,442	1,290	1,442	1,290	0.0%	0.0%
	Junction Total	**4,116**	**4,429**	**4,124**	**4,438**	**0.2%**	**0.2%**
J13	1 - Wildmere Rd	278	812	278	811	0.0%	0.0%
	2 - A422 €	2,422	1,975	2,416	1,978	-0.2%	0.1%
	3 - Ermont Way	636	736	636	736	0.0%	0.0%
	4 - A422 (W)	1,837	1,682	1,851	1,689	0.8%	0.4%
	Junction Total	**5,174**	**5,205**	**5,182**	**5,214**	**0.2%**	**0.2%**

11.2.2 The above analysis indicates that the development results in a reduction in peak trips at all junctions, save for the following four junctions: -

- A361 / Calthorpe St / Crouch Street crossroads (Junction 3)
- High Street / Marlborough Road / Calthorpe Street (Junction 6)
- Cherwell Street / Windsor Street / George Street signalised T-Junction (Junction 9)
- Concord Avenue / Bridge Street / Cherwell Street signalised crossroads (Junction 10)

11.2.3 Indeed, the percentage change in traffic at the identified junctions peaks at 2.2% for the junction total, which is considered well within the day-to-day fluctuation of traffic (+/- 10%) that one might reasonably expect. Notwithstanding, it is noted that isolated arms at the junctions above exceed the 5% increase to necessitate detailed capacity modelling – the following sections of this TA details the capacity modelling methodology and results, where required.

11.3 Highway Capacity Assessments

11.3.1 Following the above, this assessment has considered the performance of those junctions exhibiting a percentage impact of 5% or greater on a junction arm in terms of further capacity modelling to determine the impact in terms of capacity.

11.3.2 Further to this, by way of a robust assessment, detailed capacity modelling has been undertaken for neighbouring junctions which exhibit a degree of delay across both the morning and evening peak periods in accordance with google traffic data.

11.3.3 With this, the junctions modelled have been outlined below with the respective software packages also outlined.

Table 11-2 Highway Study Area Junctions & Modelling

Junction	Max % Change	Software
(2) Horse Fair / High Street / South Bar St / West Bar St	1.8%	ARCADY
(3) A361 / Calthorpe St / Crouch Street	12.7%	PICADY
(4) A361 Oxford Road / A361 Bloxham Road	0.8%	LINSIG
(6) High Street / Marlborough Road / Calthorpe Street	10.5%	PICADY > LINSIG
(9) Cherwell St / Windsor St / George St	4.0%	LINSIG
(10) A4260 / Bridge Street	1.6%	LINSIG
(14) Calthorpe Street / Site Access	N/A	PICADY

11.3.4 As identified above, given the form of the High Street / Marlborough Road / Calthorpe Street (Junction 6) junction, this assessment has utilised LINSIG to link the multiple give-way junctions in proximity, allowing for the consideration of internal storage capacity. In line with best practice, individual PICADY models have been created for each give-way decision at the junction to determine the slope and intercept values to be input into the LINSIG model under its give-way parameter equations. Further detail is provided below at the relevant junction heading.

11.3.5 With regards to creating the capacity models, the junction dimensions and all necessary geometric parameters included within have been determined from the drawings included at Appendix L.

11.3.6 With regard to the signalised junctions, the signal controller specifications and signal layout documents have been obtained from the Local Highway Authority and are contained at Appendix M for reference.

11.3.7 For consistency the modelled junctions have retained the numbering system as provided within Section 5 of this report as it pertains to the overall study area highway network.

Junction 2 - A361-Horse Fair / High Street / A361-North Bar Street / West Bar Street [Banbury Cross Roundabout]

11.3.8 The priority crossroad junction has been modelled within Junctions 9: ARCADY – with the software providing a number of measurements in its outputs, with the most salient being the Ratio of Flow to Capacity (RFC), the average queue, and vehicle delay.

11.3.9 The RFC value provides an indication of the overall performance of the junction, where a value of 1.0 indicates the junction's threshold of theoretical capacity. In this way, it is common to accept that a junction is under capacity with an RFC value at or below 0.9 and that it is nearing capacity with value lying between 0.9 and 1.0.

11.3.10 In the case of the average queue, the measurement provides a broad indication of the queue length in Passenger Car Units (PCUs) which is simple measurement of the equivalent number of cars that would be in a queue.

11.3.11 Delay is a measure of the average time experienced by each driver at the junction – with the output provided in the number of seconds per vehicle.

11.3.12 The detailed output of the model is provided at Appendix N of this report, whilst a summary of the salient outputs are provided in the table below.

Table 11-3 ARCADY Outputs - Junction 2 -Banbury Cross Roundabout

2023 Baseline	Weekday Morning Peak			Weekday Evening Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
A361 North Fair	1.5	6.16	0.59	1.2	5.16	0.55
High Street	0.7	7.11	0.41	1.6	10.23	0.61
A361 North Bar Street	0.9	5.41	0.48	0.9	5.64	0.46
West Bar Street	1.2	8.68	0.54	0.8	7.42	0.44
2028 Baseline	**Weekday Morning Peak**			**Weekday Evening Peak**		
	Queue (PCU)	**Delay (s)**	**RFC**	**Queue (PCU)**	**Delay (s)**	**RFC**
A361 North Fair	1.8	6.89	0.63	1.4	5.62	0.58
High Street	0.8	7.79	0.45	1.9	12.06	0.67
A361 North Bar Street	1.1	5.83	0.51	1.0	6.12	0.49
West Bar Street	1.4	9.85	0.59	0.9	8.15	0.48
2028 Baseline + Development	**Weekday Morning Peak**			**Weekday Evening Peak**		
	Queue (PCU)	**Delay (s)**	**RFC**	**Queue (PCU)**	**Delay (s)**	**RFC**
A361 North Fair	1.8	6.89	0.63	1.4	5.69	0.59
High Street	0.7	7.38	0.42	1.7	11.07	0.63
A361 North Bar Street	1.1	5.70	0.50	1.0	5.93	0.49
West Bar Street	1.4	9.60	0.58	0.9	8.02	0.48

11.3.13 The results presented above confirm that the A361-Horse Fair / High Street / A361-North Bar Street / West Bar Street will operate well within theoretical capacity for both the morning and evening peak periods with the development in place. Indeed, the worst-case RFC of 0.63 – as exhibited within the evening peak – is suggestive of the junction operating with some 37% reserve capacity.

11.3.14 This is an improvement from the 2028 Baseline which accounts for the existing use of the site, the proposals increasing the junction spare capacity by some 4%.

11.3.15 In consideration of the above, the Banbury Cross Roundabout is sufficient in accommodating the traffic demand arising from the proposed development. Indeed, as above – this assessment has assumed 230 dwellings at the site. As such, further comfort can be taken from the results presented above.

Junction 3 - A361-South Bar Street / Calthorpe Street / A361-South Bar Street / Crouch Street

11.3.16 The results for Junction 3 are presented in the table below.

Table 11-4 PICADY Outputs - Junction 3 - South Bar St / Calthorpe St

2023 Baseline	Weekday Morning Peak			Weekday Evening Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Calthorpe Street	0.2	9.52	0.16	0.6	12.82	0.36
A361 South Bar St N	0.1	6.82	0.08	0.0	6.17	0.03
Crouch Street	0.1	11.50	0.09	0.1	10.07	0.07
A361 South Bar St S	0.2	7.51	0.19	0.2	7.60	0.13
2028 Baseline	**Weekday Morning Peak**			**Weekday Evening Peak**		
	Queue (PCU)	**Delay (s)**	**RFC**	**Queue (PCU)**	**Delay (s)**	**RFC**
Calthorpe Street	0.2	9.86	0.17	0.6	13.69	0.39
A361 South Bar St N	0.1	6.98	0.09	0.0	6.27	0.04
Crouch Street	0.1	12.11	0.10	0.1	10.47	0.08
A361 South Bar St S	0.3	7.74	0.20	0.2	7.83	0.14
2028 Baseline + Development	**Weekday Morning Peak**			**Weekday Evening Peak**		
	Queue (PCU)	**Delay (s)**	**RFC**	**Queue (PCU)**	**Delay (s)**	**RFC**
Calthorpe Street	0.2	11.54	0.19	0.6	13.89	0.38
A361 South Bar St N	0.1	6.96	0.09	0.0	6.29	0.04
Crouch Street	0.1	11.87	0.09	0.1	10.37	0.07
A361 South Bar St S	0.2	7.63	0.19	0.2	7.97	0.15

11.3.17 The results presented above confirm that the A361-Horse Fair / High Street / A361-North Bar Street / West Bar Street will operate well within theoretical capacity for both the morning and evening peak periods with the development in place. Indeed, the worst-case RFC of 0.38 – as exhibited within the evening peak – is suggestive of the junction operating with some 62% reserve capacity.

11.3.18 This is comparable to the 2028 Baseline which accounts for the existing use of the site, the proposals increasing the junction spare capacity by 1%.

11.3.19 On this basis, the existing crossroads junction is more than capable of accommodating the traffic demand arising from the proposed development. Indeed, the change in junction performance as consequence of the development proposals would be indiscernible and immaterial.

Junction 4 - A361-South Bar Street / Oxford Road / A361-Bloxham Road

11.3.20 The detailed results are contained at Appendix O, whilst a summary of the most relevant outputs is provided below.

Table 11-5 LinSig Outputs - Junction 4 - A361-South Bar St / Oxford Rd / A361-Bloxham Rd

	Morning Peak				Evening Peak			
	Practical Reserve Capacity (PRC)	Total Junction Delay (seconds)	MMQ on worst performing arm (PCU)	DoS on worst performing arm	Practical Reserve Capacity (PRC)	Total Junction Delay (seconds)	MMQ on worst performing arm (PCU)	DoS on worst performing arm
2023 Baseline	9.0%	15.48	16.6	82.6%	3.4%	16.37	19.7	87%
2028 Baseline	3.1%	18.05	18.8	87.3%	-2.2%	20.20	23.3	92%
2028 Base + Development	3.2%	17.45	19.3	87.2%	-2.5%	20.34	23.5	92.3%

11.3.21 The analysis outlined above shows that the junction is forecast to operate within theoretical capacity across all scenarios considered. It is noted that the junction exhibits a PRC of -2.2% for the evening peak, with a corresponding max DoS at 92% - as such the junction shows broadly 8% spare capacity.

11.3.22 In consideration of the development proposals, it is evident that any impact associated would be negligible with the total junction PRC exhibiting a maximum change of -0.3% to provide a future year PRC of -2.5%, suggestive of the junction affording some 7.5% space capacity.

Junction 6 - High Street / Marlborough Road / Calthorpe Street

11.3.23 Given the complex arrangement of the junction, and the limitations of Junctions 9 in terms of being able to model multiple linked give-way junctions – this assessment has utilised the software LINSIG with the give-way parameters informed by discrete PICADY models. In this way, the junction(s) has been modelled initially via Junctions 9 in order to calculate the slope and intercept factors for all give-way movements – which have then been implemented into the give-way parameters within LINSIG. The PICADY model for the junctions are contained at Appendix N – whilst the full input parameters and results of the LINSIG model are provided at Appendix O.

11.3.24 Following the above, LINSIG (v3) provides numerous measurements in its output, the most salient of which are the Degree of Saturation (DoS), the Mean Max Queue (MMQ), Vehicle Delay, and the Practical Reserve Capacity (PRC).

11.3.25 The DoS provides a measure of the utilisation of each link within the junction as a measure of zero to 100, whereby 100 indicates the threshold of capacity. The MMQ is a measure of the extent of queuing at the end of red period as the lights turn green, taking into account arrivals at the back of queue as vehicles at the front are discharging, together with a factor to allow for randomness. Vehicle delay is measured in seconds per vehicle per PCU.

11.3.26 With regards to PRC, a junction is considered to nearing capacity when the calculated PRC is between 0.0% and -10.0%, and over capacity when the PRC is greater than - 10.0%.

11.3.27 The detailed results are contained at Appendix O, whilst a summary of the most relevant outputs is provided below.

Table 11-6 LinSig Outputs - Junction 6 - High St / Marlborough Rd / Calthorpe St

	Morning Peak				Evening Peak			
	Practical Reserve Capacity (PRC)	Total Junction Delay (seconds)	MMQ on worst performing arm (PCU)	DoS on worst performing arm	Practical Reserve Capacity (PRC)	Total Junction Delay (seconds)	MMQ on worst performing arm (PCU)	DoS on worst performing arm
2023 Baseline	60.1%	0.86	0.6	56.2%	10.7%	2.34	2.1	81.3%
2028 Baseline	51.4%	0.97	0.7	59.4%	4.5%	3.14	2.9	86.1%
2028 Base + Development	59.6%	0.88	0.6	56.4%	10.6%	2.36	2.1	81.4%

11.3.28 The analysis presented above demonstrates that the proposals will have a slight beneficial impact on the operation of the junction. Indeed, in the morning peak, the PRC will increase from 51.4% to 59.6%, and from 4.5% to 10.6% in the evening peak.

Junction 9 - A4260-Cherwell Street / A4260-Windsor Street / George Street

11.3.29 The detailed results are contained at Appendix O, whilst a summary of the most relevant outputs is provided below.

Table 11-7 LinSig Outputs - Junction 9 - A4260-Cherwell St / A4260-Windsor St / George St

	Morning Peak				Evening Peak			
	Practical Reserve Capacity (PRC)	Total Junction Delay (seconds)	MMQ on worst performing arm (PCU)	DoS on worst performing arm	Practical Reserve Capacity (PRC)	Total Junction Delay (seconds)	MMQ on worst performing arm (PCU)	DoS on worst performing arm
2023 Baseline	17.9%	14.33	17.1	76.3%	23.1%	13.89	14.9	73.1%
2028 Baseline	11.5%	16.03	19.2	80.7%	16.5%	15.42	16.3	77.2%
2028 Base + Development	9.1%	16.31	19.6	82.5%	16.5%	15.48	16.3	77.2%

11.3.30 The analysis presented above demonstrates that the proposals will have little to no impact on the operation of the Cherwell Street / George Street junction. In the morning peak, the implementation of the proposals is forecast to reduce the PRC from 11.5% to 9.1%, which leaves the junction operating well within capacity. In the evening peak, the redevelopment of the site will have virtually no impact on the junction's capacity – with the PRC value and DoS remaining static.

11.3.31 Given the above, it is evident that the existing junction could accommodate the traffic demand associated with development proposals.

Junction 10 - A4260-Concord Avenue / Bridge Street / A4260-Cherwell Street

11.3.32 Junction 10 - A4260-Concord Avenue / Bridge Street / A4260-Cherwell Street / Bridge Street has been modelled within LINSIG, with the detailed results contained at Appendix O, and a summary of the most relevant outputs provided below.

Table 11-8 LinSig Outputs - Junction 10 - A4260-Concord Ave / Bridge St / A4260-Cherwell St

	Morning Peak				Evening Peak			
	Practical Reserve Capacity (PRC)	Total Junction Delay (seconds)	MMQ on worst performing arm (PCU)	DoS on worst performing arm	Practical Reserve Capacity (PRC)	Total Junction Delay (seconds)	MMQ on worst performing arm (PCU)	DoS on worst performing arm
2023 Baseline	1.6%	33.48	19.5	88.6%	-2.1%	36.11	20.6	91.9%
2028 Baseline	-7.9%	50.41	22.7	97.1%	-7.6%	46.01	25.5	96.8%

2028 Base + Development	-7.6%	49.68	30.1	96.9%	-7.1%	46.00	24.7	96.4%

11.3.33 As exhibited in the table above, it is apparent that the junction is nearing theoretical capacity (-10%) within the 2028 Baseline scenario, for both the morning and evening peak periods – with -7.9% and -7.6% values, respectively.

11.3.34 The redevelopment of the site will have the effect of improving the capacity at this junction slightly, increasing the PRC by 0.3% and 0.5% in the morning and evening peaks respectively.

Junction 14 - Site Access / Calthorpe Street

11.3.35 The results for the primary site access onto Calthorpe Street are presented in the table below.

Table 11-9 PICADY Outputs - Site Access / Calthorpe St

2028 Baseline Development	Weekday Morning Peak			Weekday Evening Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Site Access	0.1	7.75	0.10	0.1	8.44	0.09
Calthorpe St RightTurn	0.0	5.52	0.02	0.1	5.45	0.05

11.3.36 The results presented above confirm that the proposed site access onto Calthorpe Street would operate significantly under the threshold of theoretical capacity with the development in-situ. Indeed, the model calculates a maximum RFC value of 0.11 for the morning peak period – which is suggestive of the junction operating with some 89% reserve capacity.

11.3.37 In consideration of the above, the proposed site access junction is sufficient on accommodating the traffic demand arising from the proposed development. Indeed, the further comfort can be taken from the above with the assessment assuming the development proposals comprise 230 dwellings.

11.3.38 As such, the High Street / Marlborough Road / Calthorpe Street junction(s) are more than able to accommodate the traffic demand arising from the development proposals. Indeed, as above, the change in junction performance would be indiscernible and immaterial for the morning peak and beneficial across the evening peak.

11.4 Section Conclusion

11.4.1 The evidence presented throughout this section of the report demonstrates that the anticipated effects of the site's redevelopment would have no material impact on the capacity of the study area highway network. Indeed, it is evident from the above analysis that the proposals could be accommodated within the capacity of the existing highway network, as they have an indiscernible effect on the queuing, delay and capacity of all analysed junctions.

11.4.2 In this regard, the proposed development would not result in a cumulative residual impact that would be classified as 'severe' which is the only threshold by which a refusal be justified in the context of the revised NPPF, in respect of traffic impact.

12 SUMMARY & CONCLUSIONS

12.1 Report Summary

12.1.1 This assessment has been prepared on behalf of the Applicant to assess the traffic and transport implications of the proposed development of up to 230 dwellings at Calthorpe Street, Banbury. The findings of this assessment may be summarised as follows: -

The proposed access strategy incorporates two access junctions onto Calthorpe Street and a single access onto Marlborough Road. With all junctions comprising priority T-junctions. The northernmost access onto Calthorpe Street affords access to the lower ground floor car park, which serves 63 spaces.

The non-car accessibility credentials of the site and its local environs have been considered using centralised GIS networks and this report has demonstrated that the application site lies in an area of high accessibility, where the need to travel by car can be greatly reduced in favour of more sustainable travel modes that would assist in the Councils' response to the climate emergency.

The surrounding highway network has also been appraised, with the review concluding that it adheres to existing guidance and would be of suitable standards to accommodate the number and type of vehicular trips associated with the scheme.

Baseline traffic flows have been calculated from independent survey movements and adjusted to allow for ambient growth to the future year 2028, using the industry standard TEMPro software.

The trip generation potential of the proposed development has been considered using industry standard software, which has identified that proposed development would result in a decrease in vehicular travel demand across the study area highway network. As such, the development would afford a betterment in terms of highway safety and capacity. Consequently, there can be no residual cumulative severe impact on capacity or an unacceptable safety impact.

The relative change in traffic flows on a junction-by-junction basis have been considered and the results of the analysis indicates that the effects of the development would afford a reduction in traffic at most junctions across the study area.

Junction capacity modelling indicates that all junctions will continue to operate within theoretical capacity with the development in-situ. Indeed, the analysis shows that the development would result in an indiscernible and immaterial change to the operation of the network, as evidence by minimal changes in junction delay and junction queuing.

The removal of the Marlborough Road Car Park as part of the development proposals has also been considered within this report. With reference to the parking beat analyses contained above, it is evident that the residual parking capacity within the nearby car parks across Banbury town centre is more than sufficient in accommodating demand.

12.2 Report Conclusion

12.2.1 The report confirms that the proposed development complies with and actively supports the principles of sustainable development, and in this way would support the response to the climate emergency and decarbonising transport agenda.

12.2.2 The report also demonstrates in detail that traffic arising from the proposals would not only be accommodated within the capacity limits of the highway network, but that it would in fact provide betterment in terms of a reduction in traffic for most of the wider Banbury network, compared with the future year baseline scenario.

12.2.3 Taken together, therefore, this assessment confirms that the development proposals are in accordance with all relevant policies and, given the limiting conditions of paragraph 111 of the Revised NPPF, could not be refused on transport grounds.

12.2.4 Consequently, the over-riding conclusion of this report is that there can be no defensible reasons to refuse planning permission on grounds of highway capacity, highway safety, or accessibility. In this regard, the proposed development should be permitted.