mayer brown

OAKHILL GROUP LIMITED
PROPOSED RESIDENTIAL DEVELOPMENT
NEWBRIDGE ROAD, BATH

TRANSPORT ASSESSMENT

APRIL 2019

the journey is the reward

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Oakhill Group Limited
Proposed Residential Development
Newbridge Road, Bath
Transport Assessment

List of Contents

Sections

Figures

Tables

Appendices

1 Introduction

Introduction

1.1 Mayer Brown Limited was commissioned by Oakhill Group Limited in August 2018 to set out a Transport Assessment as part of a planning application for a new residential housing development on land at Hartwell garage, Newbridge Road, Bath, comprising 104 standard residential units and 186 student bedrooms. The application will be for outline planning permission with all matters reserved except for layout and access as follows:

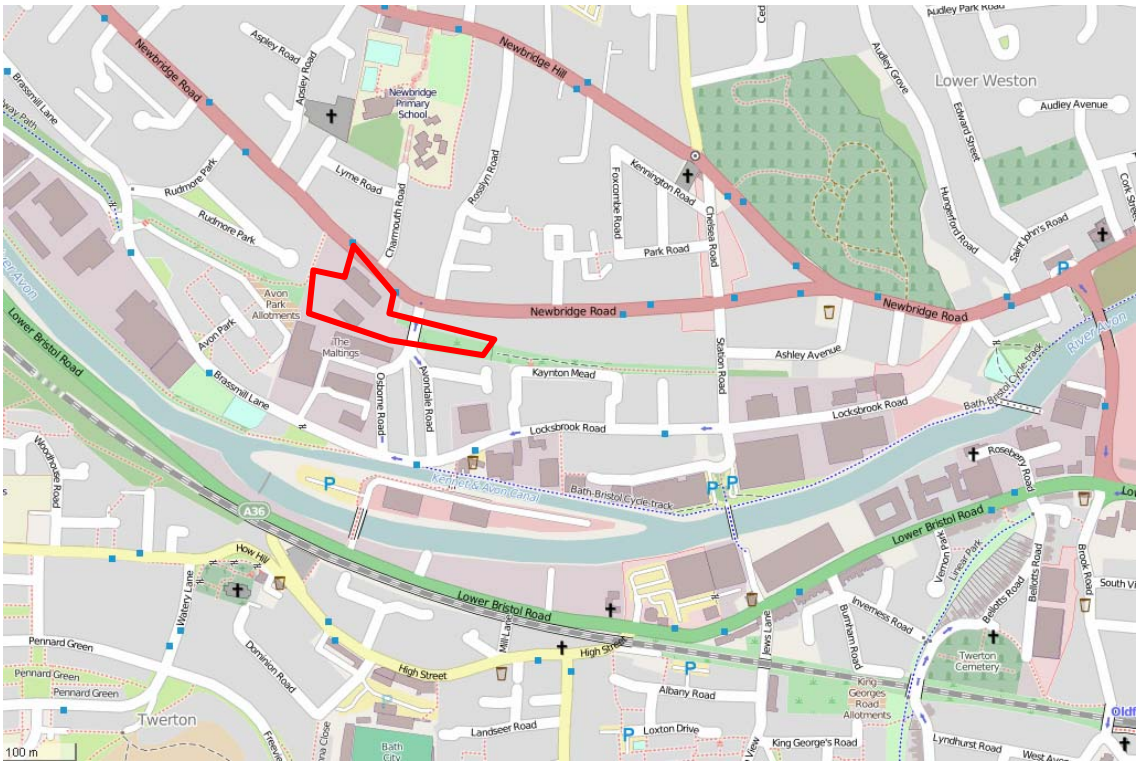
> *"Outline application with all matters reserved except for access and layout comprising the demolition of the existing buildings on the site; construction of replacement buildings ranging in height from 3 to 5 storeys providing a mixed use development comprising up to 104 residential units (Class C3 Use), up to 186 student bedrooms (Sui Generis Use), and a commercial retail unit (flexible A1/A3 Use); formation of new vehicular access from Newbridge Road, construction of new access ramp, and provision of vehicle parking spaces; provision of new shared bicycle and pedestrian sustainable transport route through the site and formation of new access and linkages on the eastern and western boundary; provision of hard and soft landscaping scheme across entire site."*

1.2 A site location plan is included in **Figure 1.1**.

1.3 The site is located on the north western side of Bath and is accessed from the A4 Newbridge Road. It is bounded to the east and west by housing and to the south by an industrial estate. The site is located within a former quarry and on the route formed by the former Midland Railways Bristol to Bath line, which results in a level difference of approximately 7m between Newbridge Road and the bottom of the site.

1.4 Although the planning application is outline only, feasibility work has been undertaken to ensure the proposed level of development can be accommodated, including an accessibility appraisal to determine parking levels. The development plans involve four new blocks, comprising two blocks of residential units adjacent to Newbridge Road and two blocks of student accommodation at the lower level of the site, as well as a flexible use commercial unit. Access will be taken from a new priority junction onto Newbridge Road, and pedestrian and cycle links will also be provided to the east and west. A total of 117 parking spaces are proposed, for use by the residential apartments, visitors and users of the commercial units; no parking is proposed for students.

1.5 The previous use of the site, the Hartwell garage, was closed at the end of February 2019.



Map data © OpenStreetMap contributors, CC BY-SA; www.openstreetmap.org; www.creativecommons.org

Figure 1.1: Site location plan

1.6 A previous planning application for student-only development on the site was submitted in 2014 but later withdrawn. This included a Transport Assessment by Mayer Brown, incorporating traffic surveys of the garage at full operation.

Transport Assessment

1.7 This document has been produced to analyse the impact of the development proposals on the local transport infrastructure and to look at the area-wide accessibility to the site.

1.8 Oakhill Group Limited has undertaken pre-application discussions with Bath and North East Somerset Council (BaNES) using the Development Team process. Mayer Brown produced a scoping report as part of this process to determine the scale of report needed to support this planning application, and associated methodologies as part of the transport planning input. A preliminary meeting was held with BaNES on 16th October 2018, and advice dated 29th October 2018 was received from BaNES. A follow up meeting including the highways department was held on 30th January 2019, and the scheme and proposals reviewed and updated to take into account the Council's comments. A meeting was also undertaken with Sustrans in February 2019 to discuss the proposals for the cycleway/footway link through the site.

1.9 A copy of the scoping report (excluding appendices to avoid repetition) issued to BaNES in October 2018 is included in **Appendix A**, which sets out proposed methodology for the traffic appraisal that was agreed by the highway officer in an email dated 11th January 2019.

1.10 The Transport Assessment covers the following:

- Site location and review of local highway network;
- Development proposals including parking;
- Site accessibility;
- Trip generation and distribution; and
- Junction analysis.

1.11 A separate Framework Travel Plan has been produced to support the planning application.

Public Consultation

1.12 A public consultation event regarding the proposals was held at Newbridge Methodist Church on Tuesday 29th January 2019. Mayer Brown attended as one of the project team, and there were a total of 76 attendees plus some local Councillors. Following the event, 159 written/emailed responses were recorded as feedback.

1.13 With regards to traffic and transport, local and proposed parking was raised as an issue by many attendees, in particular in relation to the lack of parking for students. The Newbridge area has no controlled parking zone, plus large numbers of existing properties with no off-street parking and this, along with staff vehicles from the nearby Royal United Hospital, means that current residents have existing difficulties in parking and are concerned that this would get worse following introduction of a student residence.

1.14 There was support for the proposed cycle route through the southern section of the site, with nearly 80% of respondents being in favour of this and over half indicating they would use this route.

1.15 Local parents were also keen to ensure that the design of the site frontage would allow sufficient space for students to wait at the bus stop without blocking children walking along the footway to access the pedestrian crossing outside the site and the nearby school. They indicated that this is a busy area at the start and end of the school day.

1.16 A full Statement of Community Involvement has been provided with the planning application, which provides further detail on the responses received.

Local policy

1.17 The Transport Assessment and site layout has been developed with consideration for the following national and local policy documents:

- Bath and North East Somerset Local Plan Core Strategy and Placemaking Plan (2017), particularly Policy SB15 on the Hartwells garage and Policy ST2 on sustainable transport routes;
- Joint Local Transport Plan (2011-2026);
- Manual for Streets; and
- National Planning Policy Framework (2019).

1.18 The underlying focus of the NPPF is achieving sustainable development and whilst it states that *"Planning policies and decisions should play an active role in guiding development towards sustainable solutions"* it acknowledges that *"in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area"* (paragraph 9).

1.19 The NPPF states that *"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"* (paragraph 103).

1.20 In considering development proposals, the NPPF requires that:

a) *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location*

b) *safe and suitable access to the site can be achieved for all users; and*

c) *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree"* (paragraph 108).

1.21 Paragraph 109 states *"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."*

1.22 All developments that will generate *"significant amounts of movement"* should be required to provide a travel plan and the application supported by a transport statement or transport assessment so that *"the likely impacts of the proposal can be addressed"* (paragraph 111).

Summary

1.23 The proposal, in highway and transportation terms, can be considered commensurate with aspirations of NPPF for the following reasons:

- Good opportunities for travel by sustainable transport modes, being located next to bus stops and near cycle routes;
- New facilities for pedestrians and cyclists;
- Minimal impact on local highway network; and
- Safe access achievable.

2 Site Description and Review of Local Highway Network

Site Description

2.1 Until its recent closure, the site was occupied by a car showroom with servicing garage and a concrete batching plant. The garage comprised 537sqm of showrooms, a 654sqm bodyshop, 3,355sqm of workshops and ancillary space, and 284sqm of offices. It employed 40.5 full time equivalent members of staff. Its hours of operation were 07:30 to 19:00 Monday to Friday, with reduced hours on weekends.

2.2 The site is located within a former quarry and on the route formed by the former Midland Railway Bristol to Bath line, which results in a level difference of approximately 7m between Newbridge Road and the bottom of the site.

Review of local highway network

2.3 The site is located on the A4 Newbridge Road. Locally to the site, this is a wide single carriageway road with central hatching and a 30mph speed limit and footways on both sides. On-street parking is permitted on both sides of the road to the west of the development site, but in the immediate vicinity, where the road begins to narrow, this is prevented by double yellow lines.

2.4 The A4 Newbridge Road forms one of the major routes into Bath (along with the A36 Lower Bristol Road which is south of the River Avon) from Bristol, Keynsham and Saltford. It provides a link into the centre of Bath, routing through the city past Queen Square and the top of Broad Street, before continuing through the west of Bath as London Road to its junction with the A46. The A46 provides a northwards link to the M4 motorway.

2.5 Approximately 700m to the east of the site, the A4 Newbridge Road forms a signal controlled “Y” junction with the A431 Newbridge Hill. Newbridge Hill provides a link through the north western areas of Bath and runs roughly parallel to Newbridge Road. It provides a link to Kelston and Bitton, before reaching the edges of Bristol at Willsbridge.

2.6 Around 1.4km west of the development site, the A4 Newbridge Road forms a signal-controlled junction with the A36 Lower Bristol Road. The road continues westwards as the A4 Bristol Road dual carriageway, providing the main link towards Keynsham, Bristol and Saltford.

Review of local highway safety

2.7 Personal Injury Collision (PIC) data for a five-year period (August 2013 to July 2018) was provided by the Road Safety team at BaNES. This covered an area along Newbridge Road between its junctions with Brassmill Lane and Locksbrook Road. Data only included accidents which resulted in injuries, not those resulting in damage only, and is included in **Appendix B.**

2.8 A total of 16 accidents took place within the study area over the five-year period – this is a reduction from the 27 accidents in the five years assessed in the 2014 reports. There were three serious accidents with no fatalities and the remaining 13 were slight accidents.

2.9 The plot of accidents is shown in **Appendix B** and this demonstrates that only one injury accident occurred outside the development site during the last five years. This resulted from a driver failing to stop on a red signal at the pedestrian crossing and colliding with a woman and child who both received slight injuries. Defective eyesight was listed as one of the causation factors. No injury accidents occurred at the nearby Rosslyn Road junction, a location that was perceived by a number of consultation attendees as being dangerous.

2.10 The first serious PIC occurred at the junction of Chelsea Road / Station Road with Newbridge Road. A motorcyclist was travelling outbound and was hit by a car turning across his path into Station Road, resulting in serious injuries to the motorcyclist.

2.11 The next happened at the junction of Westfield Park when a car indicating to turn right was hit by an overtaking motorcyclist, who received serious injuries.

2.12 The third occurred at the junction of Newbridge Road with Old Newbridge Hill to the west of the site. A driver from Old Newbridge Hill pulled into the path of a passing vehicle and received serious injuries as a result.

2.13 There were two additional PICs that involved pedestrians, one at the junction of Shaftesbury Road where a driver reversed into an elderly pedestrian who was crossing the road, and one at a small car park on Chelsea Road where a driver also reversed into an elderly pedestrian.

2.14 Three incidents resulted in slight injuries to cyclists. All three involved drivers pulling into the path of cyclists travelling along Newbridge Road, two at the Station Road / Chelsea Road junction.

2.15 A total of four accidents involved motorcyclists including the serious accidents at Westfield Park and Station Road. The remaining two PICs resulted in slight injuries and can be summarised as follows:

- A car driver pulled out from Apsley Road into the path of a motorcyclist on Newbridge Road; and
- A motorcyclist travelled along Newbridge Road close to Chelsea Road swerved and fell off bike when the vehicle in front (to which the motorcyclist was travelling to close) braked, following which his foot was run over.

2.16 Other slight accidents can be summarised as follows:

- Rear end shunt near Newbridge Park and Ride;
- Driver turning into path of another vehicle at junction (three separate PICs); and
- Open car door was clipped by a passing vehicle, closing on the first driver.

2.17 Five accidents occurred at or near the Station Road / Chelsea Road / Newbridge Road junction, including two of those involving motorcyclists, two of the cyclist collisions and one of the pedestrian accidents. This was the only cluster point of more than two PICs.

2.18 Newbridge Road is an A-road with heavy traffic flows and as a result, some level of accident record is to be expected, although it is noted that accident numbers have reduced compared to the previous five-year assessment.

2.19 None of the accidents in the study area appear to be directly related to the existing Hartwell garage. Based on the information in the output report, the accidents are considered to be due to driver error, particularly failure to look properly when turning. With the exception of several clusters, in particular five PICs at or near the Chelsea Road junction, none of which had similar causations, the incidents along the study area were distributed along the length of Newbridge Road.

2.20 None of the injury accidents local to the site were caused by highway layout or highway visibility issues, and as a result it is concluded that there are no existing highway safety issues in the vicinity of the Hartwell residential development that have resulted in personal injury. Additionally, the proposed site entrance location has good visibility in line with observed traffic speeds and higher towards the east than from the current access (see later in this chapter and Development Proposals chapter) which will ensure safety for exiting vehicles.

Base traffic conditions

2.21 Traffic surveys were undertaken at local junctions as agreed with Dan Friel, highway officer at BaNES, in email correspondence dated 12th September 2018.

2.22 Junction turning surveys were carried out at the following junctions by MHC Data Collection on Thursday 4th October 2018 for 07:00-10:00 and 15:00-19:00:

- A4 Upper Bristol Road / A4 Newbridge Road / A431 Newbridge Hill – signal-controlled junction;
- A4 Newbridge Road / Hartwells Garage / Charmouth Road – four-arm staggered priority junction;
- A4 Newbridge Road / Hartwells Garage (Hansons) – three-arm priority junction;
- A4 Newbridge Road / Old Newbridge Hill / Brassmill Lane – four-arm crossroad junction.

2.23 Traffic count data is included in **Appendix C** with observed movements shown on TFD01 in **Appendix D**. No vehicular movements were observed entering or exiting the Hansons site, so this junction has been excluded from the flow diagrams.

2.24 The network peak hours were calculated to be 07:45-08:45 and 15:45–16:45.

2.25 Previous 12-hour multi-modal surveys undertaken in May 2014 at the Hartwells entrance demonstrated just one pedestrian trip and one cycle trip to the site through the day, both to the garage. There were no trips by bus or drop-offs nearby. All other trips were made by car or HGV. At the time of the surveys, the Hartwells garage was not fully operational compared to previous surveys due to the loss of certain car franchises at the site. Historically the site included a petrol filling station on its forecourt which would have had a much higher level of trip attraction.

2.26 Additionally, an Automatic Traffic Count (ATC) was carried out by MHC Data Collection between Tuesday 16th October and Monday 22nd October 2018 inclusive on Newbridge Road, adjacent to the site entrance and to the east of the pedestrian crossing. A summary of the speed results is set out in **Table 2.1**, along with the required visibility splays for the access junction based on Manual for Streets standards.

Direction	85th percentile observed speed	Visibility requirement
Northwest-bound	30.2mph	43m to east
Southeast-bound	29.6mph	42m to west

Table 2.1: Speed survey results

2.27 These observed 85th percentile speeds are around 4mph slower than the speeds observed in 2012 when speed surveys were undertaken for a previous application on the site.

2.28 Pedestrian counts were also undertaken on Thursday 4th October 2018 at the signal-controlled crossing over Newbridge Road adjacent to the site. This has a central pedestrian refuse so not all pedestrians will press the button to call the signal. The results of these surveys for the vehicular peak hours are summarised in **Table 2.4**. The survey recorded both pedestrians crossing with the green man and also those that crossed using the pedestrian island at this location at other times without calling the signals.

Time	Crossing with green man		Crossing at other times	
	Northbound	Southbound	Northbound	Southbound
07:45-08:45	81	6	14	5
15:45-16:45	9	29	5	18

Table 2.4: Pedestrian flows at signal-controlled crossings

2.29 Pedestrian flows were particularly high at the crossing adjacent to the site in the morning peak hour, due to the proximity of the primary school on Charmouth Road.

3 Site Accessibility

3.1 A key to the success of any development is accessibility and it is important to achieve a balance between offering travel choices to all and promoting sustainability both now and into the future.

Walking

3.2 There are footways along both sides of Newbridge Road in the vicinity of the site. These linkages continue to the east towards the city centre and to the west towards the edge of the urban area. Footways are also provided along Brassmill Lane, south of the site. Footways in this area are not continuous, and pedestrians will need to cross the road several times to remain on the footway. However, they do provide a link towards the riverside path towards the city centre, and towards the footbridges across the river at Weston Island and Fielding's Road, which provide pedestrian access to the Lower Bristol Road.

3.3 There is a Puffin signal-controlled pedestrian crossing immediately outside the site, which will enable pedestrians to easily cross Newbridge Road and safely access facilities to the north.

3.4 There is a public footpath immediately to the west of the site which provides a link from Newbridge Road to Avon Park and Brassmill Lane. This is a narrow route with steps and an unpaved surface but does provide a useful shortcut for residents who can use the path easily.

3.5 Suitable walking facilities will be provided within the development site, which includes footways where appropriate, streetlighting and funding towards new dedicated footway-cycleway links to the surrounding areas including Brassmill Lane to the southwest and towards Station Road to the east.

Cycling

3.6 A new cycle route will be formed through the site which is central to the scheme and will greatly enhance cycling potential to and from the site. Further detail of this is set out in Chapter 4.

3.7 The site is very well located for access to the local cycling network. It is located 400m by road from the off-road Bristol-Bath Railway Path, which starts nearby on Brassmill Lane and forms part of National Cycle Network (NCN) Route 4. This will allow residents to cycle off-road towards Bristol, Saltford and Keynsham for leisure purposes.

3.8 A cycle path also provides an off-road link from the Railway Path to Bath Spa University. A ramp is provided off the Railway Path, near the Twerton Fork, with a path running alongside the A4 and a Toucan crossing near the Newton St Loe roundabout, to allow cyclists and pedestrians to safely access Bath Spa University.

3.9 The city centre is approximately 3km from the development site, which is within a reasonable cycling distance. NCN Route 4 provides an off-road cycle link from Brassmill Lane to Green Park Road near the city centre, running alongside the river.

3.10 Within the site, a 3.5m shared cycleway/footway will be provided along the southern edge of the site. Discussions have been undertaken with BaNES regarding financial contributions through the S106 agreement towards a pedestrian and cycle link from the western end of the site to Brassmill Lane and eastern end towards Station Road. These routes would offer a more direct route towards NCN Route 4 from the site, as well as the off-road route towards Bath Spa University and will avoid the need for cyclists accessing this route to travel along Newbridge Road.

3.11 Communal cycle storage areas will be provided for residents, with 72 spaces for students and 208 spaces for residents. Additionally, external cycle parking stands will be installed to accommodate visitors' bicycles.

Bus Access

3.12 There are bus stops located immediately outside the site on Newbridge Road, with regular services passing the site directly to Bath Spa University. During term time, this service offers buses at a minimum 15-minute daytime frequency. During university holidays, a reduced frequency is provided.

3.13 The eastbound stop has a shelter and seat, while the westbound stop is a pole and flag only. These stops are served by a range of routes which access the city centre (stopping at the bus station, which is located next to the rail station) and also provide links to

Saltford, Keynsham and central Bristol, as well as Bristol Airport which may be of use to foreign students. Term time bus services are summarised in **Table 3.1**.

3.14 Additionally, services 4, 9, 19 and 37 stop near the junction of Newbridge Road with Newbridge Hill, approximately 750m east of the site. These offer the potential for bus travel to other areas such as Weston, Odd Down and Cribbs Causeway via Kingswood.

Number	Route	Operator	Monday - Saturday		Sunday
			Daytime	Evening	
19A	Bath – Keynsham – Kingswood – UWE – Bristol Parkway	First	Hourly	No service	No service
39	Bath – Keynsham – Brislington - Bristol	First	No service	Every 30 minutes	Every 20 minutes
A4 Air Decker	Bath – South Bristol - Bristol Airport	Bath Bus Company	Every 30 minutes	Hourly	Every 30 minutes
U5	Bath City Centre – Bath Spa University	First	Every 12-15 minutes	Every 30 minutes	Every 30 minutes
U6	Bath City Centre – Bath Spa University (Circular, westbound only)	First	Every 20 minutes	No service	No service
X39	Bath – Saltford – Brislington – Bristol	First	Every 15 minutes	No service	No service

Table 3.1: Bus services stopping near site (as February 2019)

Rail Access

3.15 There are two rail stations located within Bath: Bath Spa (in the centre of the city) and Oldfield Park. The nearest to the development site is Oldfield Park Station, which is 1.4km from the site, but has only local services. Bath Spa station is approximately 3.2km away from the proposed development but has more frequent services and is located near to the end of the waterside walking and cycling route from Newbridge, as well as being next to the bus station where the various bus services passing the site stop.

3.16 Services from Oldfield Park run approximately hourly to Bath, continuing onwards to a range of destinations including Westbury, Weymouth and Southampton. Services also run hourly to Bristol, continuing northwards to Gloucester or Great Malvern, plus morning peak hour services to Cardiff Central.

3.17 **Table 3.2** summarises train services from Bath Spa rail station.

Destination	Weekday frequency
London Paddington (via Swindon, Reading)	2 per hour
Bristol Temple Meads	4 per hour
Cardiff Central	1 per hour
Weymouth (via Westbury)	Every 2 hours
Portsmouth (via Salisbury, Southampton)	1 per hour

Table 3.2: Weekday frequency of rail services from Bath Spa station

Accessibility Appraisal

3.18 The calculation sheet set out in Appendix C of the BaNES 2017 Parking Strategy has been used to determine the accessibility level of the site, with a copy of the calculations included in **Appendix E**. The assessment has been undertaken for the completed site and therefore the following assumptions about site provisions have been made:

- New bus shelter provided outside site;
- Car club bay provided on upper decked car park;
- Cycling/walking link is provided between Brassmill Lane and Station Road through the site.

3.19 This results in a score of 42, reflecting a moderate level of accessibility and permitting a reduction of up to 25% in minimum parking levels.

Summary

3.20 The site is well designed and located to encourage walking and cycling, with links to the surrounding streets, Bristol-Bath cycle path and a proposed new cycle link through the site. There are regular bus services outside the site, which link to the city centre and rail station as well as to Bath Spa University.

3.21 It is therefore concluded that the site benefits from good provision of infrastructure to support sustainable forms of travel, particularly travel by bus and bicycle.

4 Development Proposals

4.1 The planning application is in outline only, with access and layout to be agreed. An indicative site plan is shown in **Appendix F**.

4.2 The Hanson site does not form part of the application and its access will not be affected or changed by these proposals.

4.3 The site will be a mixed-use residential development with a 148sqm flexible A1/A3 commercial unit. The proposals are for 104 residential units, being a mixture of studio, one- and two-bedroom homes. These will all be purpose built privately rented properties, with Oakhill retaining the freehold and acting as landlord. Additionally, 186 new student bedrooms will be provided in two purpose-built buildings.

4.4 Given the levels difference from Newbridge Road to the bottom of the site (around 7.5m), there will be a series of stepped pedestrian routes leading into the site, as well as a lift from Newbridge Road to the quarry floor which will provide access for disabled users.

4.5 A new 3.5m wide shared footway/cycleway will be provided along the southern part of the site and following the alignment of a sewer easement within the site. Discussions have been undertaken with BaNES regarding financial contributions through the Section 106 agreement to enable continuation of this route, linking Brassmill Lane and Avon Park towards Kayton Mead and Station Road. This would allow residents of the site to more easily access the Bristol-Bath Railway Path on foot or bicycle, either towards the centre of Bath or towards Bath Spa University, as well as providing an improved connection for other local residents.

Site access

4.6 Access to the residential elements of the site will be taken from a new junction formed at the eastern edge of the site, east of the nearby signal-controlled pedestrian crossing and bus stop (which will remain in situ), at a location on the outside of a bend in order to maximise visibility.

4.7 The form of the junction will be a priority arrangement with kerb radii of 5m. Visibility splays of 2.4m x 43m to the east and 2.4m x 42m to the west will be required at this location, based on the observed 85th percentile speeds, calculated with Manual for Streets standards. The required visibility splays are shown on drawing B/WPBath2.1/01 in **Appendix G**. Visibility splays exceeding the requirements, of up to 150m, will be

achievable from the access junction within controlled and highway land, and this provides an improvement towards the east compared to the current site access.

4.8 The access will lead to a two-way ramp of 5.9m in width for use by cars and small vans that will be private and unadopted. A gated access will be provided, with the gates set back 8m from the carriageway edge to allow space for a vehicle to wait while the gates open. All larger vehicles will access via The Maltings (see "Servicing" below). A 1:20 gradient section will be provided in front of the gates at the approach from the ramp to Newbridge Road, whilst lower sections of the ramp will be up to a 1:10 gradient.

4.9 Access to the car park on the decked area (currently used by the garage for an external display area) will be via a new crossover junction of approximately 6m width, located around 6m to the east of the Hansons access that will remain unchanged. Visibility splays of 2.4m x 42m to the east and 43m to the west are required from this access, but again splays of up to 150m are achievable due to the alignment of the carriageway.

4.10 A new 2m wide section of footway will be provided along the site frontage, to the rear of the existing footway. This area will be open to the public but will not be offered for adoption, due to the existing trees and proposed trees located within this area.

4.11 A new westbound bus shelter at the existing stop on the site frontage will be provided and funded by the development.

Servicing

4.12 The site will be fully accessible for all service and emergency vehicles, with access taken from The Maltings industrial estate. Preliminary swept path analysis for service vehicles has been undertaken and is shown on the site layout plan to ensure this area can operate suitably, and as the site design progresses further analysis will be undertaken to ensure that refuse vehicles can travel through the site. Turning areas will be provided where required.

4.13 The owners of the site retain a right of access for vehicles and pedestrians over The Maltings industrial estate to the south of the site, which is also a benefit to successors in title, subject to intensity of traffic usage being comparable to existing – surveys of this entrance showed daily movements of up to 39 arrivals and 40 departures. Gates are provided in the site boundary to accommodate this right of access.

Car parking

4.14 A total of 117 parking spaces are proposed across the site including four disabled residential spaces, one car club space and three spaces (including one disabled) for the

commercial unit. This level of provision allows for one space per residential unit, plus around nine visitor spaces.

4.15 A total of 37 spaces will be provided on the decked area to the west of the site, of which three will be for use by commercial customers (commensurate with parking standards for A1 or A3 use), one for a car club vehicle and 33 dedicated for use by residents.

4.16 On the quarry floor, 51 spaces, including two disabled, will be provided off the main site road, in the narrow area leading towards the Osbourne Road railway bridge. A gravelled parking area with 16 further spaces will be provided to the east of the Osbourne Road bridge. A further nine parking spaces will be located around the edge of the service yard, accessed from The Maltings. Spaces will not be allocated, although permits will be required, and therefore the areas east of the bridge and accessed from The Maltings are likely to be the last areas to be occupied.

4.17 No parking will be provided for students, in line with local parking standards, and they will not have access to the parking areas on the quarry floor level.

4.18 Parking standards set out in Appendix B of the 2017 BaNES Parking Strategy indicate a minimum requirement of one parking space per one-bed property and two parking spaces per two-bed dwelling, equating to 144 spaces based on the proposed development mix. However, there is scope for this to be reduced based on accessibility levels. As set out in Chapter 3, the site has a moderate accessibility rating based on the calculator from Appendix C of the Parking Strategy, which will allow a discount of 10-25% in parking numbers. This brings the requirement down to 108 spaces, which has been provided by the combination of residential and visitor spaces.

4.19 Census data from 2011 has been reviewed. This indicates that overall in the BaNES district, 49% of households in flats/apartments do not have a car, with 42% having one car and just 9% having more than one. Locally to the site, within the BaNES 008 middle layer super output area, 36% of households in private rented accommodation do not have a car, with 41% having one car. This indicates that locally, for rented properties or for flats, demand for parking is likely to be lower than for owner occupied properties and therefore the proposed provision is expected to be suitable to meet demand.

4.20 Based on 104 residential units, it is expected that the site might result in ownership of between 62 cars (based on flat/apartment Census data) and 90 cars (based on rented Census data). The proposed provision of 104 residential spaces plus visitor parking is therefore commensurate with local standards permitting a 25% reduction and will allow some spaces for variation in these figures without overspill onto surrounding streets.

Car Club

4.21 Initial correspondence has been undertaken with Enterprise Car Club who operate the car club scheme within Bath and have vehicles nearby. They have indicated an interest in the site and therefore further discussions will be held in the future as the scheme develops.

Parking controls

4.22 All apartments will be eligible for one parking permit, which they may choose to use for their own vehicle or for their visitors. Spaces will not be allocated to maximise usage of spaces and enable residents to park as close as possible to their homes but residents will need to display a parking permit to use the site.

4.23 Should any residents decide they do not require a parking permit, spare permits will be allocated to residents who require a second permit although this may be on a monthly basis, to enable permits to be reallocated if occupiers change.

Students

4.24 It is proposed that students will sign up to tenancy agreements which will prevent them from bringing their vehicle to the city. This will be set out in the Section 106 agreement for the site. Students will not be permitted to keep a motor vehicle within 3km of the site, unless they are eligible to use the disabled parking bays, and this will be highlighted in welcome packs and during any induction events.

4.25 A disciplinary process will be set out in tenancy agreements and student information packs for students who do park in surrounding streets. This is likely to include verbal warnings followed by written warnings in the first instances, potentially financial fines, legal proceedings and ultimately loss of tenancy for students who do not comply with the terms of their tenancy.

4.26 The on-site management team will undertake checks where possible to observe if any students are using cars – this may include reviewing the upper decked car park where students might use the visitors parking to drop off shopping, for example. This area is likely to be covered by CCTV which will also provide photographic evidence of this. Local residents who believe students from the site are parking in their roads should bring this to the attention of the site management, to enable investigation and disciplinary processes to commence.

4.27 Parking surveys of the site will be undertaken prior to first occupation by the students and following completion of the buildings and their first occupation. The pre-occupation

term-time survey would need to be undertaken during term time, excluding exam weeks, reading weeks and any end of term periods when student numbers may be lower. The post-occupation term-time survey would be undertaken within two months of occupation, again avoiding any non-standard time periods during term. If these surveys demonstrate any significant change in on-street parking following initial completion and occupation of the buildings, further investigation will need to be undertaken to demonstrate whether this is related to the Hartwell development site, and if so, further review of students who may be parking off-site will be carried out.

4.28 These measures are commensurate with those set out in other recent planning applications for large scale student accommodation in Bath, including permitted developments 13/01876/EFUL and 14/00480/FUL, which have been used to inform the proposed management measures. Parking management processes, including limitations on car ownership for resident students, will be secured through planning conditions and/or the Section 106 agreement for the site.

4.29 Given the site location, the majority of students are likely to be studying at Bath Spa University, which does not allow students living in BA1 or BA2 postcodes to have a campus parking permit, nor does the University of Bath permit residents of BA2 to obtain a permit. This should assist in reducing the demand for parking spaces at the accommodation development, as the students will not be able to drive to their classes, thus making a car less desirable.

4.30 On agreed moving days, either the visitor parking or the parking area adjacent to the Maltings will be used to enable loading and unloading, with standard use of these spaces suspended. As part of the resident application process, students will be asked to select preferred times from 20- or 30-minute-long arrival periods between 09:00 and 17:00 on set days, and these will be allocated individually. This will be organised by the site management to ensure a physical spread through the building at each time to reduce pressure on lifts and staircases, and the agreed times will be non-negotiable. Further details of the proposals for “moving in” days are set out in the Travel Plan for the site.

Cycle parking

4.31 A total of 72 cycle spaces will be provided for the students, equating to approximately one stand per 2.6 beds, in line with local standards.

4.32 Information from Bath Spa University’s 2017 Travel Plan indicates that in 2015/16 only 2.6% of students cycled to that university, although the improved A4 cycle path provided since then may have increased this proportion. The University of Bath’s 2014 surveys

indicated 9.4% of students cycled to the university. Based on these proportions, the proposed level of cycle parking is considered appropriate.

4.33 Two cycle spaces per residential unit will be provided, giving 208 spaces, commensurate with local parking standards.

4.34 The residential and student cycle parking will all be provided in covered secure storage areas at ground floor level; this will include some bike lockers for residential use.

4.35 Usage of cycle parking will be monitored through the Travel Plan and consideration given to provision of additional spaces if required.

4.36 Additionally, 24 external spaces will be provided in the form of 12 Sheffield stands, for use by visitors. These will be spread around the site.

4.37 A shared cycle scheme called Nextbike has recently closed in Bath, but will be replaced in summer 2019 with an electric bike scheme, the operator of which has yet to be announced. The target markets for the scheme are students and tourists. There is therefore potential for a new cycle docking station to be provided at this site in Newbridge, which will allow students who do not own bicycles to hire these vehicles for short time periods for journeys to the city centre or Bath Spa University – particularly given the provision of a cycle path from the Bristol-Bath cycle path to Bath Spa University by BaNES. Discussions will be held with BaNES and the operator at an appropriate time about the provision of a docking station.

5 Trip Generation and Distribution

5.1 In order to determine the level of traffic which will be generated by the new residential development, the TRICS 7.5.2 database was interrogated. Full TRICS outputs are included in **Appendix H**. Where possible, sites were filtered to include suburban, edge of town and neighbourhood centre locations as appropriate, excluding sites in Greater London and Ireland.

5.2 The observed network peak hours are 07:45-08:45 and 15:45-16:45. To ensure a robust analysis, trip generation has been based on the figures for the typical development peak hours of 08:00-09:00 and 17:00-18:00 and then added to the network peak traffic.

Residential properties

5.3 The proposed vehicular trip rates and likely trip generation for the residential units is set out in **Table 5.1**. Although the residential properties are expected to be rented, TRICS only separates privately owned flats from affordable/Local Authority flats. It is considered that given the likely tenants of these flats (young professionals, graduates, hospital staff, key workers) the privately-owned category is more likely to be applicable and therefore has been used for this analysis.

Time Period	Vehicular trip Rate (Per Dwelling)			Traffic Generation (104 Dwellings)		
	In	Out	Total	In	Out	Total
Weekday AM Peak (08.00-09.00)	0.054	0.311	0.365	6	32	38
Weekday PM Peak (17.00-18.00)	0.271	0.110	0.381	28	11	40
Weekday (12 Hours) (07.00-19.00)	1.433	1.549	2.982	149	161	310

Table 5.1: Trip generation for residential apartments

Student accommodation

5.4 Trip rates for students are set out in **Table 5.2**, using the "student accommodation" category. As expected for a scheme with no parking, vehicular trip generation is low and likely to reflect students getting a lift from friends or a taxi. Students will not have access to the car parks on the quarry floor and would therefore be expected to drop off and pick up either on-street or using the decked car park area accessed from Newbridge Road.

Time Period	Vehicular trip Rate (Per Bedroom)			Traffic Generation (186 bedrooms)		
	In	Out	Total	In	Out	Total
Weekday AM Peak (08.00-09.00)	0.011	0.014	0.025	2	3	5
Weekday PM Peak (17.00-18.00)	0.007	0.007	0.014	1	1	3
Weekday (12 Hours) (07.00-19.00)	0.234	0.245	0.479	44	46	89

Table 5.2: Trip generation for student accommodation

Mixed use commercial unit

5.5 For purposes of assessment and based on the worst-case trip generator, the commercial unit has been assumed to be a coffee shop.

5.6 There are no comparable sites within TRICS for the coffee shop, as there is no similar category included within the database. The duration of stay is generally likely to be short, with many customers who drive to the site picking up a coffee to take away particularly during the peak hours. It is also expected that a coffee shop will be busier in the morning peak hour than the evening peak hour, with customers stopping to purchase coffee on the way to work.

5.7 It is assumed for purpose of junction assessment that there will be 50 arrivals and 50 departures from the coffee shop in the morning peak hour and 25 arrivals and 25 departures in the evening peak hour. This is based on observed traffic data for a Costa outlet on Calthorpe Road in Birmingham which was surveyed by David Tucker Associates in 2016 as part of a planning application (see Trip Generation Review document under Surrey Heath planning application 15/0872). It is expected that in reality the trip generation may be lower if the site is not occupied by a national chain particularly given the low level of parking that is permitted for this use by local parking standards.

Trip distribution

Residential and student traffic

5.8 Trip distribution for the residential traffic has been based on 2011 ‘Location of usual residence and place of work’ data taken from NOMIS for all employed people living in output area Bath and North East Somerset 008, and routes allocated using Google maps. This has also been applied to the student vehicular trips. It has been assumed that all people accessing output areas 007, 009 and 009 (city centre, Newbridge Road

and Upper Bristol Road corridors) will travel by foot, bicycle or public transport and therefore these people have been excluded from the distribution calculations.

5.9 A copy of the data is included in **Appendix I**, and traffic has been distributed in the directions shown in **Table 5.4**.

Direction	Route from site	Percentage of traffic
West	West along Newbridge Road	53%
East	East along Newbridge Road towards Upper Bristol Road	43%
Apsley Road	West along Newbridge Road then north onto Apsley Road to access Newbridge Hill	6%

Table 5.4: Traffic distribution

5.10 Traffic distribution is shown on TFD03 in **Appendix D**, with generated traffic for the morning and evening peak hours shown on TFD04.

Mixed use commercial traffic

5.11 Based on the trip generation of this usage being calculated as a coffee shop, it has been assumed that 100% of peak hour trips will be "pass-by" journeys, as few people are likely to make a special trip by car to purchase coffee during network peak hours due to the risk of getting caught in traffic. These are shown on TFD05 in **Appendix D**.

5.12 Pass-by traffic will turn into the site to use the parking spaces, and journeys to/from the east and west on Newbridge Road have been based upon observed directional split from the traffic surveys as follows:

- AM network peak: 67% from west, 33% from east; and
- PM network peak: 43% from west, 57% from east.

Comparison with existing garage use

5.13 **Table 5.5** sets out the predicted change in vehicular flows at the development, as a result of the change in use, considering both the front and rear entrances together. The 12-hour garage traffic flows for the Newbridge Road entrance have been taken from surveys undertaken in 2014 as part of a previous withdrawn planning application, as the 2018 surveys only considered the morning and afternoon peak periods. Traffic relating to the commercial unit has not been included in these calculations as these vehicles are expected to be mainly pass-by trips, particularly in the peak hours.

Time period	Existing garage	Proposed scheme	Difference
08:00-09:00	31	41	+10
17:00-18:00	32	41	+9
12-hour	406	387	-19

Table 5.5: Comparison of vehicular trips (two-way combined)

5.14 These results demonstrate that the residential scheme will produce around one additional vehicular movements every six minutes compared to the garage during each peak hour. Overall flows through a 12-hour period will be similar to the previous use.

6 Base Traffic Flows

6.1 Junction analysis has been undertaken for 2024, being five years after application, and the growth rates from TEMPRO set out in **Table 6.1** have been used to factor the observed traffic accordingly.

Local NTEM growth rate (Bath and North East Somerset 008, All Urban Roads	2018-2024
AM Peak	1.0796
PM Peak	1.0775

Table 6.1: Proposed TEMPRO growth factors

6.2 The background 2024 traffic flows, which incorporate the observed flows with the TEMPRO growth factor, are shown on TFD02 in **Appendix D**.

6.3 No further allowance has been made for committed developments in the surrounding area.

7 Junction Analysis

7.1 Junction assessment has been undertaken for the following locations, for the 2024 baseline and 2024 forecast (with development) scenarios:

- A4 Newbridge Road / residential site access / Charmouth Road – four-arm staggered priority junction (PICADY);
- A4 Upper Bristol Road / A4 Newbridge Road / A431 Newbridge Hill – signal-controlled junction (LinSig); and
- A4 Newbridge Road / Old Newbridge Hill / Brassmill Lane – four-arm crossroad junction (PICADY).

Site access

7.2 A summary of the modelling results from the PICADY model for the 2024 forecast (with development) scenario is shown in **Table 8.1**, with full output included as **Appendix J**; this includes the pedestrian crossing to the west of the junction and assumes for a robust model that all site traffic would use one access. The site has not been tested with the current land use.

Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Site access	0.256	0	0.100	0
Newbridge Road (east)	0.072	0	0.048	0
Charmouth Road	0.028	0	0.021	0
Newbridge Road (west)	0.517	2	0.297	1

Table 7.1: PICADY results – 2024 forecast – site access

7.3 These results demonstrate that the junction will work well within capacity following redevelopment of the site and will not cause congestion at this location.

A4 Upper Bristol Road / A4 Newbridge Road / A431 Newbridge Hill

7.4 A summary of the modelling results from the LinSig model for the 2024 forecast (with development) scenario is shown in **Table 7.2** with full output including observed and base model results included as **Appendix K**. This is based on a 90 second cycle time.

Arm	AM Peak		PM Peak	
	DoS	Queue	DoS	Queue
Newbridge Road	77.3%	16	76.4%	12
Newbridge Hill	78.9%	16	53.1%	10
Upper Bristol Road	78.3%	13	77.1%	15
PRC	+14.1%		+16.7%	

Table 7.2: LinSig results – 2024 forecast – Upper Bristol Road / Newbridge Road / Newbridge Hill

7.5 These results demonstrate that the junction will work well within capacity following redevelopment of the site, with the queues expected to clear each cycle.

A4 Newbridge Road / Old Newbridge Hill / Brassmill Lane

7.6 A summary of the modelling results from the PICADY model for the 2024 baseline and forecast (with development) scenarios is shown in **Tables 7.3** and **7.4**, with full output included as **Appendix L**.

Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Brassmill Lane	0.234	0	0.559	1
Newbridge Road (east)	0.025	0	0.017	0
Old Newbridge Hill	1.111	17	0.977	10
Newbridge Road (west)	0.282	0	0.082	0

Table 7.3: PICADY results – 2024 baseline – Newbridge Road / Old Newbridge Hill / Brassmill Lane

Arm	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
Brassmill Lane	0.245	0	0.564	1
Newbridge Road (east)	0.025	0	0.017	0
Old Newbridge Hill	1.137	18	0.992	11
Newbridge Road (west)	0.284	0	0.082	0

Table 7.4: PICADY results – 2024 forecast – Newbridge Road / Old Newbridge Hill / Brassmill Lane

7.7 These results demonstrate that the junction will be operating close to or over capacity in the baseline scenarios, with delays of up to five minutes in each peak hour. Following

redevelopment of the site, ratios of flow to capacity increase only marginally with queuing on Old Newbridge Hill increasing by just one vehicle.

8 Summary and Conclusions

8.1 Mayer Brown has produced this Transport Assessment to support the outline planning application for the redevelopment of the Hartwell garage site on Newbridge Road in Bath to provide 104 privately rented apartments, 186 student bedrooms and a small flexible A1/A3 commercial unit. A new access will be provided to the site with visibility splays achievable in line with observed traffic speeds and in accordance with the guidance set out in the Manual for Streets.

8.2 The site is well located for access to public transport, with frequent buses stopping immediately outside the proposed development giving direct links to Bath Spa University as well as to Bath, Keynsham and Bristol. The site is located close to the Bristol-Bath railway cycle path, and off-road routes towards Bath city centre and Bath Spa University. There is a pedestrian crossing immediately outside the site, and footway links will be provided to the surrounding network, including a new footway/cycleway along the southern boundary of the site, with contributions made to continue this between Avon Park and Station Road. Improvements will be made to the footway and bus stop on the site frontage.

8.3 Accident data has been reviewed and it has been concluded that there are no highway safety issues at the site entrance, and no local safety issues that can be confirmed as having resulted from highway design or visibility problems.

8.4 Trip generation has been undertaken using the TRICS database, to determine the new flows that will be derived from the site; there will be slight increase in vehicular movements during the network peak hours and similar overall flows throughout the day when compared with the former use of the site.

8.5 Parking is a key concern of current local residents, due to limited existing on-street availability. A total of 117 spaces are therefore proposed to address these concerns, allow 1:1 provision for the residential apartments; this meets likely demand based on Census car ownership data for the proposed land use and surrounding area. In line with BaNES parking standards, no parking is provided for the student development. Parking will be allocated to residential apartments and students will have to sign a tenancy agreement stating that they will not bring a car within 3km of the site. This level of provision and mechanisms of control are considered to be appropriate and commensurate with requirements for other student schemes. Cycle parking will be provided for the residential apartments and student units in line with local standards.

8.6 A Travel Plan has been set out for the development, which will include measures such as travel packs for new residents, as well as setting out a proposed car park management scheme.

8.7 It is concluded that the proposals will result in only a slight increase in vehicular trips on the local highway network compared to the existing garage use and that proposed parking levels are appropriate for the land use in this location. A safe and suitable access is proposed, there is not expected to be an impact on highway safety, and the residual cumulative effects will be only minor; therefore there are no transportation or highways matters that should preclude the granting of planning permission.

APPENDIX A: Scoping correspondence

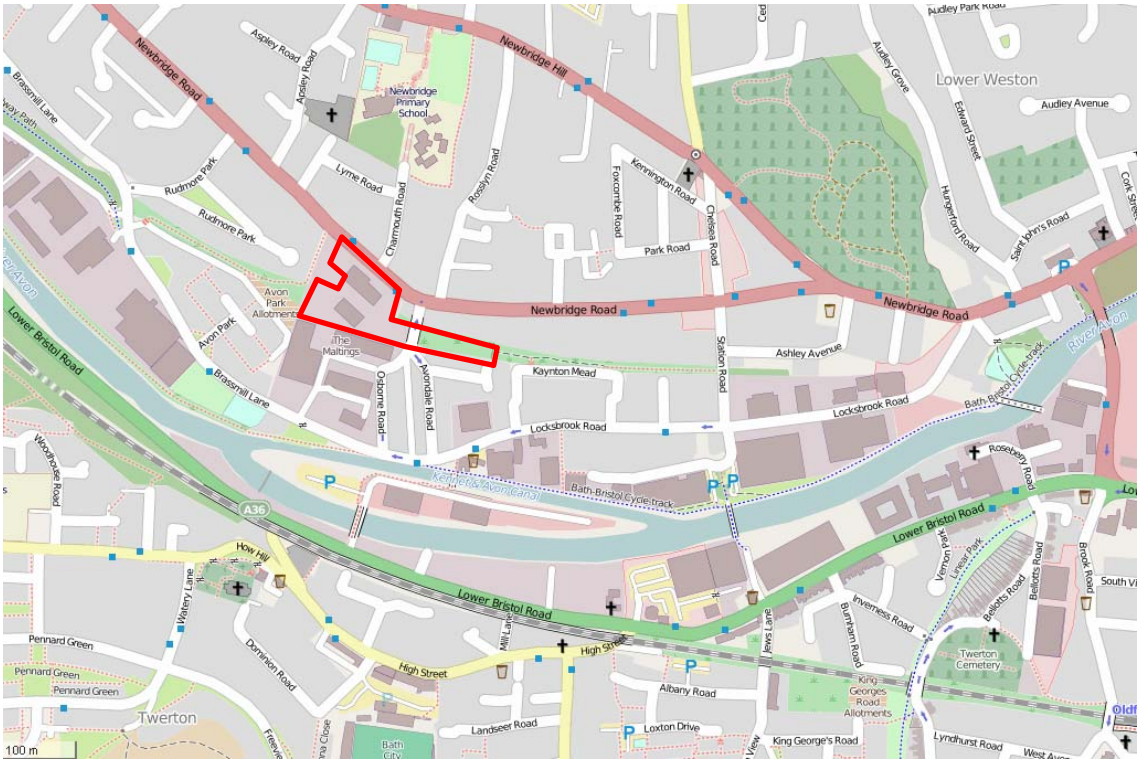
Transport Scoping Note

Introduction

1.1 Oakhill Group Limited proposes to redevelop their Hartwell car garage site on Newbridge Road for a mixed development of privately rented apartments, student accommodation and a small retail offering.

1.2 The site is located on the north western side of Bath and is accessed from the A4 Newbridge Road. It is bounded to the east and west by housing and to the south by an industrial estate. The site was originally the route of the Midland Railway Bristol to Bath railway line.

1.3 An indicative site location plan is shown as **Figure 1**.



Map data © OpenStreetMap contributors, CC BY-SA; www.openstreetmap.org; www.creativecommons.org

Figure 1: Site location plan

1.4 Mayer Brown provided the transport inputs to previous development schemes on the site, including an outline planning application for 264 student apartments in 2014 (14/03977/OUT) which was withdrawn. The transport inputs for that scheme have been used to inform the proposed methodology for the transport planning work for the new proposals.

Development proposals

1.5 The scheme is proposed as an outline planning application, comprising:

- 103 residential apartments (studio to two-bedroom) which are expected to be privately rented, with Oakhill Group Limited retaining the freehold and letting directly to tenants;
- 191 student bedrooms, mainly arranged in clusters;
- Two retail units, one of approximately 400sqm (expected to be convenience food retail) and one of around 140sqm (expected to be coffee shop), with 31 parking spaces;
- 86 residential parking spaces for the rented apartments – zero parking for students.

1.6 Vehicular access for the residential element will be taken from Newbridge Road, at the eastern end of the site frontage. This is a similar location to the previously proposed access. Servicing and emergency access to the residential and student apartments will occur from the south through the Maltings industrial estate, over which Hartwells and successors in title have a right of way. This will be controlled so that it is not used by residents for day-to-day access.

1.7 An indicative site layout plan is attached as **Appendix A**. This is subject to change following receipt of pre-application comments.

Transport Report

1.8 It is proposed to produce a Transport Assessment for the proposed residential units and commercial unit.

1.9 This report will contain information regarding:

- Existing site overview/operation;
- Adjacent highway network;
- Highway safety – data has been purchased for the latest five years along Newbridge Road between its junctions with Brassmill Lane and Locksbrook Road. This shows no highway safety issues in the vicinity of the site;
- Baseline traffic conditions;
- Accessibility via non-car travel modes (walking, cycling and public transport);
- Details of proposals, including access arrangements;
- Trip generation and distribution; and
- Junction capacity assessments.

1.10 Following email correspondence with Dan Friel at BaNES, traffic surveys have been arranged at the following junctions for the time periods of 07:00-10:00 and 15:00-19:00 on Thursday 4th October 2018:

- Hartwell garage / Newbridge Road priority junctions;
- Newbridge Road / Newbridge Hill / Upper Bristol Road signal controlled "Y-junction"; and
- Newbridge Road / Old Newbridge Hill / Brassmill Lane crossroad.

1.11 Junction analysis will be undertaken for 2023, being five years after application, and the growth rates from TEMPRO set out in **Table 1** will used to factor the observed traffic accordingly.

Local NTEM growth rate (Bath and North East Somerset 008, All Urban Roads)	2018-2023
AM Peak	1.0796
PM Peak	1.0775

Table 1: Proposed TEMPRO growth factors

1.12 Committed traffic from local significant developments can be included if required by BaNES Council – if so, BaNES are to provide application references.

Trip generation

1.13 Trip generation will be undertaken using the TRICS database, and it is intended to assess the morning and evening weekday peak hours.

1.14 The proposed vehicular trip rates and likely trip generation for the residential units is set out in **Table 2**. Although the residential properties are expected to be rented, TRICS only separates privately owned flats from affordable/Local Authority flats. It is considered that given the likely tenants of these flats (young professionals, graduates, hospital staff, key workers) the privately-owned category is more likely to be applicable and therefore has been used for this analysis. Full TRICS outputs are included in **Appendix B**.

Time Period	Vehicular trip Rate (Per Dwelling)			Traffic Generation (103 Dwellings)		
	In	Out	Total	In	Out	Total
Weekday AM Peak (08.00-09.00)	0.054	0.311	0.365	6	32	38
Weekday PM Peak (17.00-18.00)	0.271	0.110	0.381	28	11	39
Weekday (12 Hours) (07.00-19.00)	1.433	1.549	2.982	148	160	307

Table 2: Trip generation for residential apartments

1.15 Trip rates for students are set out in **Table 3**, using the "student accommodation" category. As expected for a scheme with no parking, vehicular trip generation is low and likely to reflect students getting a lift from friends or a taxi.

Time Period	Vehicular trip Rate (Per Bedroom)			Traffic Generation (191 bedrooms)		
	In	Out	Total	In	Out	Total
Weekday AM Peak (08.00-09.00)	0.011	0.014	0.025	2	3	5
Weekday PM Peak (17.00-18.00)	0.007	0.007	0.014	1	1	3
Weekday (12 Hours) (07.00-19.00)	0.234	0.245	0.479	45	47	91

Table 3: Trip generation for student accommodation

1.16 Proposed trip rates and likely trip generation is set out in **Table 4** for the retail use.

Time Period	Vehicular trip Rate (Per 100sqm)			Traffic Generation (400sqm)		
	In	Out	Total	In	Out	Total
Weekday AM Peak (08.00-09.00)	8.394	7.751	16.145	34	31	65
Weekday PM Peak (17.00-18.00)	12.249	12.018	24.297	49	48	97
Weekday (12 Hours) (07.00-19.00)	558.754	558.04	1116.758	2235	2232	4467

Table 4: Trip generation for convenience store

1.17 There are no comparable sites within TRICS for the coffee shop, as there is no similar category included within the database. The duration of stay is generally likely to be short,

with many customers who drive to the site picking up a coffee to take away. It is also expected that a coffee shop will be busier in the morning peak hour than the evening peak hour, with customers stopping to purchase coffee on the way to work. It is therefore proposed to assume that there will be 50 arrivals and 50 departures from the coffee shop in the morning peak hour and 25 arrivals and 25 departures in the evening peak hour. This is based on observed traffic data for a Costa outlet on Calthorpe Road in Birmingham which was surveyed by David Tucker Associates in 2016 as part of a planning application (see Trip Generation Review document under Surrey Heath planning application 15/0872).

Trip distribution

1.18 Trip distribution for the residential traffic will be undertaken based on 2011 'Location of usual residence and place of work' data taken from NOMIS for all employed people living in output area Bath and North East Somerset 008, and routes allocated using Google maps. This will also be applied to any student vehicular trips.

1.19 For the retail unit, it will be assumed that only 50% of trips will be entirely new to this section of the highway network – the remaining 50% will be "pass-by" journeys, where traffic that is currently on the highway network will stop at the store before continuing its journey.

1.20 For the coffee shop, it will be assumed that 100% of peak hour trips will be "pass-by" journeys.

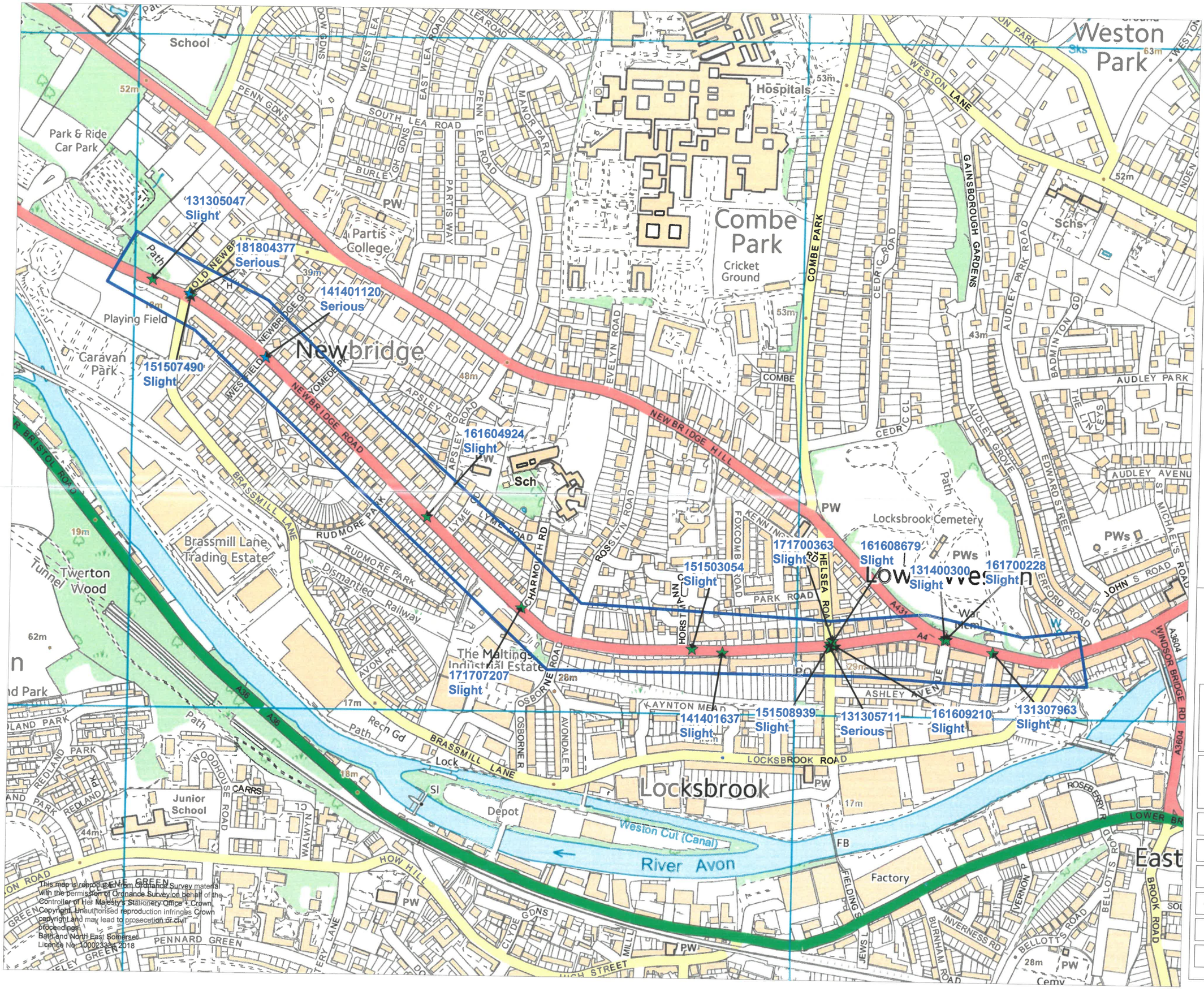
1.21 Pass-by traffic will turn into the site to use the parking spaces, and journeys to/from the east and west on Newbridge Road will be based upon observed directional split from the traffic surveys.

1.22 Census population data for the five mid-output areas surrounding the site will be used to determine the distribution of the new retail trips. This covers the likely catchment area, with customers unlikely to pass an alternative store or travel significant distances for this type of shopping. Areas to the south of the river have been assumed not to travel to this store despite their proximity, given the longer distance when travelling by road.

Junction analysis

1.23 The new site access will be analysed along with the Newbridge Hill and Old Newbridge Hill junctions that will be surveyed, for the 2023 without development and with development scenarios. Traffic signal data has been provided by signal engineers at BaNES for the Newbridge Hill signals.

APPENDIX B: Accident data



5 Year Accident Plot
Newbridge Road, Bath
01/08/2013 - 31/07/2018
(2018 data provisional)

N

BATH & NORTH EAST SOMERSET

DRAWING TITLE	
SCALE	1 : 5170
DATE	19/09/2018
DRAWING No.	
DRAWN BY	

Bath & North East Somerset Council

Accident Data Analysis

Newbridge Road, Bath

Mayer Brown Ltd

Prepared by:
Road Safety
Civic Centre
Market Walk
Keynsham
Bristol
BS31 1LA

ROAD SAFETY TEAM

Project Ref.:	
Issue Ref.:	10-18/19
Issue Date:	19 September 2018
Issued by:	R Edmondson

Bath & North East Somerset Council

Road Safety Team
Civic Centre, Market Walk, Keynsham. BS31 1LA

Date: 19/09/2018
Our ref: 10-18/19
Direct line: 01225 394277
Email: Rebecca_edmondson@bathnes.gov.uk

Helen Iorwerth,
Mayer Brown Limited
Suite 501
CityPoint
Temple Gate
Bristol
BS1 6PL

Dear Helen,

Thank you for your e-mail dated 17th September 2018 requesting accident data information for Newbridge Road, Bath. You will appreciate that I only hold records of accidents that involve personal injury and which have been reported to the police.

I attach a report of road traffic accidents that have been reported in the requested area, during the period from 01/08/2013 to 31/07/2018.

The information for accident details is collected by Avon & Somerset Constabulary and its accuracy cannot be guaranteed by the Council.

There is a charge of £150.00 for this enquiry. The invoice will follow shortly.

Yours sincerely,

Rebecca Edmondson
Road Safety Team

Details of Personal Injury Accidents for Period - **01/08/2013** **to** **31/07/2018** (60) months

Selection:
Selected using Pre-defined Query :

Notes:

Police Ref. / Road No. / 2nd Road No. / Grid Ref.	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class	Casualties: Sex / Age / Sev
131305047 **R1: A 4** **R2: U** **E 372,027** **N 165,637**	Thursday 01/08/2013 1715hrs Dry Fine without high winds 40 mph	A4 NEWBRIDGE ROAD (BY PARK AND RIDE NEWBRIDGE) 20 METRES WEST OF OLD NEWBRIDGE HILL,	Veh 1 Car Going ahead W to E Veh 2 Car Going ahead E to W Dri Veh 3 Car Going ahead W to E Veh 4 Car Going ahead E to W	M 52 Slight

Causation Factor:

		Participant:	Confidence:
1st:	Illness or disability, mental or physical	Vehicle 003	Very Likely

V2 TRAVELLING WEST COLLIDED WITH REAR OF V4 IN SLOW MOVING TRAFFIC AND THEN CROSSED TO OFFSIDE OF ROAD AND HIT V1 FAR TO FAST BEFORE TURNING AND COLLIDED WITH V3 TRAVELLING EAST.

Police Ref. / Road No. / 2nd Road No. / Grid Ref.	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class	Casualties: Sex / Age / Sev
131305711 **R1: U** **R2: U** **E 373,051** **N 165,102**	Monday 26/08/2013 1536hrs Dry Fine without high winds 30 mph	NEWBRIDGE ROAD AT JUNCTION WITH STATION ROAD, BATH	Veh 1 Car Turning right W to S Veh 2 M/C > 125 cc Going ahead E to W Dri	M 24 Serious

Causation Factor:

		Participant:	Confidence:
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Poor turn or manoevre	Vehicle 001	Very Likely

V2 WAS TRAVELLING OUTBOUND ON NEWBRIDGE ROAD AND WAS PASSING THE CROSS ROAD JUNCTION WITH STATION ROAD AND CHELSEA ROAD. V1 WAS TRAVELLING INBOUND ALONG NEWBRIDGE ROAD AND TURNED RIGHT IN THE DIRECTION OF STATION ROAD, V2 COLLIDED WITH V1.

Police Ref. / Road No. / 2nd Road No. / Grid Ref.	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class	Casualties: Sex / Age / Sev
131307963 **R1: U** **R2: A 4** **E 373,295** **N 165,098**	Tuesday 22/10/2013 1400hrs Dry Fine without high winds 20 mph	SHAFTSBURY AVENUE, OUTSIDE NO.1 AT JUNCTION WITH A4 UPPER BRISTOL ROAD, BATH	Veh 1 Car Reversing S to N Ped	M 80 Slight

V1 WAS REVERSING CASUALTY WAS CROSSING UPPER BRISTOL ROAD TOWARDS SHAFTESBURY AVENUE. V1 HIT C1 CAUSING CASUALTY TO STUMBLE AND FALL ONTO THE PAVEMENT.

Details of Personal Injury Accidents for Period - **01/08/2013** **to** **31/07/2018** (60) months

Selection:
Selected using Pre-defined Query :

Notes:

Police Ref. / Road No. / 2nd Road No. / Grid Ref.	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class				Casualties: Sex / Age / Sev
131400300	Friday 13/12/2013	A4 UPPER BRISTOL ROAD AT JUNCTION WITH ASHLEY AVENUE, BATH	Veh 1 Car	Turning right	W to S		
			Veh 2 Car	Going ahead	E to W Dri	F 42	Slight
R1: A 4	1912hrs						
R2: U	Darkness: street lights present a						
E 373,222	Wet/Damp						
N 165,116	Raining without high winds						
	30 mph						

Causation Factor:		Participant:	Confidence:
1st:	Failed to look properly	Vehicle 001	Possible
2nd:	Exceeding speed limit	Vehicle 002	Possible

V1 TRAVELLING FROM A WESTERLY DIRECTION AND TURNED RIGHT INTO ASHLEY AVENUE. V2 TRAVELLING IN OPPOSITE DIRECTION COLLIDED WITH V1.

141401120	Wednesday 15/01/2014	A4 NEWBRIDGE ROAD, OUTSIDE NO.37, AT JUNCTION WITH WESTFIELD PARK, BATH	Veh 1	M/C < 125 cc	O/take on n/side	SE to NW Dri	M	54	Serious
			Veh 2	Car	Turning right	NW to SW			
R1: A 4	0847hrs								
R2: U									
E 372,199	Wet/Damp								
N 165,523	Other								
	30 mph								

Causation Factor:		Participant:	Confidence:
1st:	Careless/Reckless/In a hurry	Vehicle 001	Very Likely
2nd:	Poor turn or manoevre	Vehicle 002	Very Likely
3rd:	Exceeding speed limit	Vehicle 001	Possible
4th:	Failed to look properly	Vehicle 002	Possible

V2 WAS TRAVELLING ALONG NEWBRIDGE IN AN EASTERLY DIRECTION, TOWARDS BATH CITY CENTRE. V2 INDICATED TO DO A RIGHT TURN AND PULL INTO A PARKING SPACE V1 WAS OVERTAKING OTHER VEHICLES AND FAILED TO NOTICE V2 WAS TURNING RIGHT AND COLLIDED WITH V1

141401637	Monday 10/03/2014	NEWBRIDGE ROAD BATH OUTSIDE NO.77, BATH	Veh 1	Car	Parked	0 to 0 Dri	F	37	Slight
			Veh 2	Car	Going ahead	N to S			
R1: U	0810hrs								
E 372,890	Dry								
N 165,092	Other								
	30 mph								

V1 WAS PARKED AND OCCUPANT WAS PUTTING A CHILD IN CAR SEAT AT THE BACK OF VEHICLE. V2 PASSED AND THE WING MIRROR HIT V1 REAR PASSENGER DOOR CAUSING THE DOOR TO CLOSE ONTO V1 OWNER

Details of Personal Injury Accidents for Period - **01/08/2013** **to** **31/07/2018** (60) months

Selection:
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Notes:

Police Ref. / Road No. / 2nd Road No. / Grid Ref.	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class			Casualties: Sex / Age / Sev
151503054	Monday 13/04/2015	NEWBRIDGE ROAD AT JUNCTION WITH HORSTMANN CLOSE, BATH	Veh 1 Car U turn 9 to 9 Veh 2 Pedal cycle Going ahead W to E Dri			M 44 Slight
R1: U	0830hrs					
R2: U						
E 372,844	Dry					
N 165,097	Fine without high winds					
	30 mph					

V1 HAS BEEN TRAVELLING ALONG NEWBRIDGE IN THE DIRECTION OF THE CITY CENTRE. THE DRIVER HAS STATED HE CHECKED HIS MIRROR & IT WAS ALL CLEAR BEHIND HIM. HE HAS TURNED LEFT INTO HORSTMANN CLOSE TO COMPLETE A U TURN. AS HE HAS PULLED BACK ONTO NEWBRIDGE
ROAD HE COLLIDED WITH V2

151507490	Thursday 08/10/2015	A4 NEWBRIDGE ROAD AT JUNCTION WITH OLD NEWBRIDGE HILL, BATH	Veh 1 Car Turning right NE to NW Veh 2 Bus/coach Going ahead W to S Dri			M 34 Slight
R1: A 4	1012hrs					
R2: U						
E 372,085	Dry					
N 165,613	Fine without high winds					
	30 mph					

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 001	Very Likely

V1 OLD NEWBRIDGE HILL JUNCTION WITH A4 WAITING TO TURN RIGHT ONTO A4. V2 A4 NEWBRIDGE ROAD APPROACHING OLD NEWBRIDGE HILL N/S V1 PULLED OUT INTO PATH OF V2

151508939	Monday 23/11/2015	CHELSEA ROAD AT JUNCTION WITH NEWBRIDGE ROAD, BATH	Veh 1 Car Starting N to S Veh 2 Pedal cycle Going ahead W to E Dri			M 42 Slight
R1: U	0915hrs					
R2: U						
E 373,051	Dry					
N 165,108	Fine without high winds					
	30 mph					

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Casualty 002	Very Likely
2nd:	Inexperience of driving on the left	Vehicle 001	Very Likely
3rd:	Failed to look properly	Vehicle 001	

V1 TRAVELLING DOWN CHELSEA RD, TOWARDS NEWBRIDGE RD, V1 REACHED JUNCTION AND PULLED OUT NOT OBSERVING THE CYCLIST, V2. V1 COLLIDED WITH V2.

Details of Personal Injury Accidents for Period - **01/08/2013** **to** **31/07/2018** (60) months

Selection:
Selected using Pre-defined Query :

Notes:

Police Ref. / Road No. / 2nd Road No. / Grid Ref.	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class				Casualties: Sex / Age / Sev
161604924	Friday 03/06/201€ 0800hrs	NEWBRIDGE ROAD AT JUNCTION WITH APSLEY ROAD, BATH	Veh 1	M/C > 500 cc	Going ahead	W to E Dri	M 33 Slight
			Veh 2	Car	Turning right	N to W	
R1: U							
R2: U							
E 372,444	Dry						
N 165,289	Fine without high winds						
	30 mph						

Causation Factor:		Participant:	Confidence:
1st:	Stationary or parked vehicle	Vehicle 002	Possible
2nd:	Failed to look properly	Vehicle 002	Possible

V1 WAS TRAVELLING ALONG NEWBRIDGE ROAD, BATH INTO THE CITY CENTRE. V2 PULLED OUT OF THE JCT, APSLEY ROAD, TURNING RIGHT ONTO NEWBRIDGE ROAD TO TRAVEL OUT OF THE CITY CENTRE. V1 HAS TRIED TO BRAKE TO AVOID THE V2 AND CLIPPED THE REAR OFFSIDE OF V2.

161608679	Friday 28/10/201€ 1735hrs	A4 NEWBRIDGE ROAD AT JUNCTION WITH STATION ROAD, BATH	Veh 1	Car	Going ahead	E to W	
			Veh 2	Pedal cycle	Turning right	N to W Dri	M 33 Slight
R1: A 4							
R2: U							
E 373,050	Dry						
N 165,102	Fine without high winds						
	30 mph						

Causation Factor:		Participant:	Confidence:
1st:	Failed to look properly	Casualty 001	Very Likely
2nd:	Failed to judge other persons path or speed	Casualty 001	Very Likely

V1 WAS TRAVELLING ALONG NEWBRIDGE ROAD WHEN V2 HAS APPROACHED JUNCTION OF CHELSEA ROAD, DID NOT STOP AT JUNCTION AND PULLED STRAIGHT OUT ONTO NEWBRIDGE ROAD, COLLIDING WITH V1 AT THE JUNCTION WITH STATION ROAD.

161609210	Wednesday 23/11/201€ 1215hrs	A4 NEWBRIDGE ROAD OUTSIDE/BY NO.37 AT JUNCTION WITH CHELSEA ROAD, BATH	Veh 1	M/C < 50 cc	Going ahead	E to W Dri	M 38 Slight
			Veh 2	Car	Going ahead	E to W	
R1: A 4							
R2: U							
E 373,058	Dry						
N 165,104	Fine without high winds						
	30 mph						

Causation Factor:		Participant:	Confidence:
1st:	Following too close	Vehicle 001	Very Likely

V1 DRIVING ALONG NEWBRIDGE ROAD INTO BATH WHEN V2 STOPPED IN FRONT OF V1. V1 SWERVED TO AVOID THE VAN AND RIDER TOPPLED OFF OF HIS MOTORCYCLE. AS HE DID THIS V2 DROVE OVER HIS FOOT WHICH WAS UNAVOIDABLE CAUSING SLIGHT INJURIES.

Details of Personal Injury Accidents for Period - **01/08/2013** **to** **31/07/2018** (60) months

Selection:
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Notes:

Police Ref. / **Road No.** / **2nd Road No.** / **Grid Ref.**	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class				Casualties: Sex / Age / Sev
161700228	Monday 05/12/201€ 0715hrs	A4 UPPER BRISTOL ROAD AT JUNCTION WITH ASHLEY AVENUE	Veh 1 Car	Turning right	NW to S		
			Veh 2 Car	Going ahead	SE to NW Dri	F 33	Slight
R1: A 4							
R2: U	Darkness: street lights present a						
E 373,225	Wet/Damp						
N 165,117	Fine without high winds						
	30 mph						

Causation Factor:		**Participant:**	**Confidence:**
1st:	Junction overshoot	Vehicle 001	Very Likely
2nd:	Poor turn or manoevre	Vehicle 001	Very Likely
3rd:	Failed to look properly	Vehicle 001	Very Likely
4th:	Nervous/Uncertain/Panic	Vehicle 001	Very Likely
5th:	Other	Vehicle 001	Very Likely

V2 WAS DRIVING TOWARDS BRISTOL FROM BATH ON THE UPPER BRISTOL ROAD. AS V2 DROVE PAST THE JUNCTION OF ASHLEY AVENUE V1 WAS DRIVING IN THE OPPOSITE DIRECTION AND TURNING RIGHT. V1 CUT ACCROSS THE PATH OF V2 AND STRUCK THE VEHICLE SENDING V2 INTO A WALL

.

171700363	Sunday 08/01/2017 1030hrs	U CHELSEA ROAD OUTSIDE/BY CHELSEA RD AT JUNCTION WITH A4 NEWBRIDGE ROAD, BATH	Veh 1	Car	Reversing	W to E	Ped	M 79 Slight
R1: U								
R2: A 4								
E 373,054	Dry							
N 165,112	Fine without high winds							
	20 mph							

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Careless/Reckless/In a hurry	Vehicle 001	Very Likely

P1 WAS WALKING ACROSS A SMALL CAR PARK. V1 REVERSED INTO THE CAR PARK ON AN ATTEMPT TO TURN ROUND. V1 APPEARS TO HAVE NOT SEEN P1 STRIKING P1 IN THE BACK. THIS CAUSED P1 TO FALL ON THEIR FRONT. V1 CONTINUED TO REVERSE DRAGGING P1 A SHORT DISTANCE.

Details of Personal Injury Accidents for Period - **01/08/2013** **to** **31/07/2018** (60) months

Selection: **Notes:**
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Police Ref. / Road No. / 2nd Road No. / Grid Ref.	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class				Casualties: Sex / Age / Sev
171707207	Friday 22/09/2017 1230hrs	NEWBRIDGE ROAD AT JUNCTION WITH CHARMOUTH ROAD, BATH	Veh 1 Car Going ahead E to W Ped				F 36 Slight
			Veh 1 Car Going ahead E to W Ped				M 4 Slight
R1: U							
R2: U							
E 372,588	Dry						
N 165,155	Fine without high winds						
	20 mph						

Causation Factor:		**Participant:**	**Confidence:**
1st:	Disobeyed pedestrian crossing facility	Vehicle 001	Very Likely
2nd:	Uncorrected, defective eyesight	Vehicle 001	Very Likely

V1 WAS DRIVING ALONG NEWBRIDGE ROAD IN THE DIRECTION OF BATH ON THE UPPER BRISTOL ROAD. THE VEHICLE HAS APPROACHED A PED CROSSING. THE LIGHTS ON THE CROSSING INDICATED RED FOR VEHICLES TO STOP. P1 AND P2 HAVE STARTED TO STEP ONTO THE CROSSING, V1 HAS
CONTINUED THROUGH THE CROSSING ON A RED LIGHT HITTING P1 AND P2.

Police Ref. / Road No. / 2nd Road No. / Grid Ref.	Day / Date / Time / D/L / R.S.C / Weather / Speed / Account of Accident	Location Description	Vehicles: Veh No / Type / Manv / Dir / Class				Casualties: Sex / Age / Sev
181804377	Thursday 31/05/2018 0838hrs	A4 NEWBRIDGE ROAD JUNCTION WITH A431 OLD NEWBRIDGE HILL, BATH	Veh 1 Car Going ahead NW to SE Dri				F 42 Serious
			Veh 2 Car Going ahead NW to SE				
R1: A 4							
R2: A 431							
E 372,083	Dry						
N 165,617	Fine without high winds						
	30 mph						

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Possible
2nd:	Poor turn or manoevre	Vehicle 001	Possible
3rd:	Other	Vehicle 002	

V1 OLD NEWBRIDGE HILL TOWARDS JUNCTION WITH NEWBRIDGE ROAD AND GIVE WAY LINES. V2 NEWBRIDGE ROAD PASSING NEWBRIDGE HILL TO NEARSIDE. V1 PULLS OUT INTO PATH OF V2.
