



Peter Evans Partnership
**Transport Planning
& Highway Consultants**

Proposed Residential Development Land South of Leadon Way (east), Ledbury

Bovis Homes Limited

Transport Assessment

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1.0 INTRODUCTION

1.1 Aim of Assessment

- 1.1.1 This Transport Assessment accompanies an outline planning application submitted on behalf of Bovis Homes Group Limited for a proposed residential development of up to 140 dwellings (use Class C3) with associated parking, access roads, public open space, landscaping, sustainable urban drainage, and associated works, on land to the south of Leadon Way (east), Ledbury, Herefordshire.
- 1.1.2 The proposed development is shaped around numerous improvements to a previously withdrawn appeal for the Site (App Ref. P174745/O), including:
- Highway improvements, including a reduced extent of development to alleviate highways impacts/capacities, and the removal of the previously proposed highway intervention and associated physical works along the Southend (A449); and
 - Enhanced pedestrian and cycle connectivity to the south of Ledbury, including a dedicated link over Leadon Way to the north via a staggered toucan crossing, connecting to Jubilee Close and directly on to Ledbury further north.
- 1.1.3 The aim of this Assessment is to provide background information, details of the development proposals and to assess the effect of the development in transport terms. A review of national and local policy is undertaken, including parking standards. The accessibility of the site is considered, including by non-car means of transport. The effect of the proposal on traffic on the local road network is also considered.

1.2 Contents

- 1.2.1 The Assessment continues:
- in Section 2 with a description of the existing transport context including a review of existing accessibility for all road users, existing traffic flows, relevant extant permissions, a summary of discussions held with highways officers and the existing highway safety record;
 - in Section 3 with a review of relevant transport policy and guidance;
 - in Section 4 with a description of the transport elements of the application including details of access and layout and predicted traffic generation;
 - in Section 5 with an appraisal of the proposals from a transport perspective; and
 - in Section 6 with our conclusions.

2.0 TRANSPORT CONTEXT

2.1 Strategic Location

- 2.1.1 The application site lies to the south of Ledbury, directly south of Leadon Way some 1.5km south of Ledbury town centre as shown at Appendix 1.
- 2.1.2 Leadon Way is a single carriageway local distributor road through the southern and western boundaries of Ledbury.
- 2.1.3 Leadon Way meets the A449 The Southend and the A417 Gloucester Road at a roundabout some 350m east of the site. The A417 continues some 6.4km south of the roundabout where it meets the M50. The M50 provides a link between Ross-on-Wye, some 18km south west of the A417/M50 junction and the M5 some 17km north east. The A417 continues some 17km south of the M50 to Gloucester.
- 2.1.4 North of the Leadon Way/A417 Gloucester Road/A449 The Southend roundabout, The Southend continues north for some 850m where it meets the B4216 New Street and the A449 Worcester Road at a signal controlled junction. The B4216 is an eastbound only residential road to the west whilst the A449 continues north east for some 13km to Malvern before continuing a further 12km to central Worcester. North of the signal controlled junction the A449 continues as the A438 The Homend providing the main High Street through central Ledbury. The A438 meets Leadon Way and New Mills Way at a roundabout some 3km north west of the site. The A438 continues for some 19.5km west of the A438/New Mills Way/Leadon Way roundabout to central Hereford.
- 2.1.5 West of the site Leadon Way meets the A449 Ross Road and the B1426 at a roundabout known locally as the Full Pitcher roundabout. The A449 continues some 17km west of the roundabout to Ross-on-Wye. North West of the Full Pitcher roundabout the B4216 forms a residential road known as New Street. South of the roundabout the B4216 is relatively rural in nature, continuing for some 6km south to the village of Dymock.

2.2 Local Roads

- 2.2.1 The site is bounded to the south and east by agricultural land. The land immediately to the west of the application site is currently under construction by Barratt Homes with the erection of 321 dwellings with vehicular access from Leadon Way granted permission under appeal reference: APP/W1850/W/15/3009456. A plan of the local area is shown at Appendix 2. Access to this land off Leadon Way has recently been constructed.
- 2.2.2 Leadon Way is subject to the national speed limit past the site frontage. A 40mph speed limit is to be introduced, subject to a Traffic Regulation Order on Leadon Way west of the site, associated with the adjacent development.

- 2.2.3 Leadon Way meets Martins Way and the new access road to the permitted Barratt Homes development at a roundabout some 600m west of the site. Martins Way is a residential road providing access to a number of residential cul-de-sacs. Some 300m north of the Leadon Way/Martins Way/Barratt Homes junction Martins Way meets Biddulph Way at a further priority junction. Biddulph Way continues some 950m east providing access to a number of residential dwellings in the south of Ledbury. Some 190m north west of the Martins Way/Biddulph Way junction Biddulph Way meets Oakland Drive at a further priority junction. East of the Biddulph Way/Oakland Drive junction Oakland Drive provides access to more residential areas in the south of Ledbury. To the west Oakland drive meets the B4216 New Street at a priority junction.
- 2.2.4 New Street is a road primarily residential in nature connecting Leadon Way in the west of Ledbury to The Southend and The Homend in the east. New Street is one-way eastbound for an 110m stretch at its eastern end but is otherwise a two way carriageway providing access to both residential dwellings and local facilities such as a food store and doctors surgery.
- 2.2.5 New Street meets Leadon Way, Ross Road and the B4216 at the Full Pitcher roundabout 1km west of the application site. Leadon Way continues north of the roundabout for some 500m where it meets Little Marcle Road and Lower Road at a further roundabout. Little Marcle Road provides access to a Heineken Factory some 190m west of the roundabout before continuing as a rural road known as Lilly Hall Lane. Lower Road runs parallel to New Street connecting Leadon Way with The Homend in the east of Ledbury. Lower Road provides access to both residential and employment areas and connects to New Street via Little Marcle Road.
- 2.2.6 Some 650m north of the Leadon Way/Little Marcle Road/Lower Road roundabout Leadon Way meets New Mills Way and an unnamed industrial estate road at a roundabout. The industrial estate road continues south through an industrial employment area for some 450m where it joins lower park road at a priority junction. New Mills Way continues north for some 850m providing access to residential cul-de-sacs in the north of Ledbury before meeting Leadon Way and the A438 at a roundabout.

2.3 Footways and Cycleways

- 2.3.1 There is currently no footway along Leadon Way directly adjacent to the site boundary.
- 2.3.2 Footway/cycleway works are proposed as part of the permitted development to provide a continuous footway/cycleway on both sides of Leadon Way between the new roundabout and the existing Full Pitcher roundabout. A footway/cycleway is also proposed along Martins Way as part of the permitted Barratt development with a pedestrian crossing point provided on the eastern Leadon Way arm of the roundabout to the west. Public Footpath LR7 is provided along the eastern boundary of the site from north to south continuing over Leadon Way and across another section of grassland before joining the footway provided on Jubilee Close. From Jubilee Close there is continuous footway and footpath provision to the majority of the residential areas in the south of Ledbury as well as to The Southend and The Homend which provide the main high street through Ledbury town centre.
- 2.3.3 A number of footpath routes are provided through the southern residential estate north of Leadon Way which connect Biddulph Way and Blenheim Drive with Mabel's Furlong where John Masefield High School is located. This network of footpaths runs to the rear of residential properties.
- 2.3.4 There are currently no official cycle routes within the vicinity of the site however a number of local residential roads are indicated as being suggested quieter routes within the Ledbury Walking and Cycling Guide produced by Herefordshire Council and shown at Appendix 3.
- 2.3.5 The Ledbury Town Trail is provided along the route of a historic railway line through the middle of Ledbury, running from Leadon Way to Ledbury railway station. The Town Trail is a traffic free route and is suitable for both cyclists and pedestrians with various entry and exit points along the route. Entry and exit points to the Town Trail are located on Little Marcle Road, Oatleys Road, Bridge Street, Robinsons Meadow and Hereford Road. Exit and entry points onto the trail are also provided adjacent to the swimming pool and recreation ground on Lawnside Road as well as Ledbury Primary School.

2.4 Local Facilities

- 2.4.1 A plan of local facilities is shown at Appendix 4.

Education

- 2.4.2 Ledbury Primary school provided on Orchard Lane to the north of the application site is the closest primary school. Ledbury Primary school is some 2km north of the site by both foot and car.

- 2.4.3 John Masefield High School provided on Mabel's Furlong to the north of the site is the closest Secondary school. The school is some 900m north of the site on foot and 1.1km by car. John Masefield High School caters for students from age 11-18 as it also includes a sixth form centre.

Retail and Leisure

- 2.4.4 The Full Pitcher pub and Ledbury Town Football Club are all on New Street some 1.1km west of the site. The area of grassland behind the Full Pitcher Pub was formerly Ledbury Cricket Club, and is now the location of the permitted 100 dwelling Full Pitcher development. Ledbury Cricket Club has been relocated to the A449 Ross Road as a result.
- 2.4.5 There is a recreational field and children's park located on Martins way some 900m north west of the site.
- 2.4.6 The nearest food store to the site is a Co-operative located some 1.4km north of the site on New Street. A Tesco superstore is provided on Orchard Lane some 1.9km north of the site. There is also a petrol filling station with Spar convenience store provided directly opposite the Tesco superstore on The Homend. An Aldi food store is provided on Leadon Way some 2.5km north of the site.
- 2.4.7 A majority of the bars, restaurants and shopping opportunities within Ledbury, including a number of high street banks, are located within the town centre along The Homend, which forms the main high street for the town. A market is also held here along the High Street every Tuesday and Saturday.
- 2.4.8 Halo leisure centre is provided on the same grounds as John Masefield High School and is similarly accessed from Mabel's Furlong some 900m north of the site on foot.
- 2.4.9 The Market Theatre is on Market Street and shows a number of theatre productions as well as films. The theatre is some 1.6km north of the application site.
- 2.4.10 Ledbury Library is some 1.3km north of the site on Bye Street. Ledbury Swimming Pool is also located just off Bye Street on Lawnside Road some 1.3km north of the site.

Healthcare

- 2.4.11 Ledbury Market Surgery, St Katherine's Surgery and Ledbury Community Health and Care Centre are all provided on Market Street some 1.6km north of the application site.
- 2.4.12 There are two dental practices provided along The Southend within 100m of each other. Ledbury Dental Care is provided 1km north of the site whilst SpaDental is provided some 100m further north. Employment

- 2.4.13 There is a small area of industrial and retail employment directly south of the Leadon Way/Ross Road/B4216 roundabout accessed via the B4216 some 1.1km west of the site.
- 2.4.14 A Heineken Brewery is provided on Little Marcle Road some 1.8km west of the site.
- 2.4.15 New Mills Industrial Estate is located off Lower Road some 2.2km north of the site. The industrial estate is some 2.2km north of the site. Bromyard Road industrial estate is a further area of industrial employment provided on Bromyard Road some 4km north of the site.
- 2.4.16 A majority of the retail and tertiary employment is provided along The Southend and The Homend on Ledbury High Street.

2.5 Public Transport

Bus Services

- 2.5.1 The closest bus stop to the site is the Orchard Place bus stop on Biddulph Way some 130m north of the site. There is no formal bus stop infrastructure provided at either the westbound or eastbound bus stop. Bus services operating from these stops are as follows:

Services from Orchard Place		Service Frequency (minutes)					
Service	Route	Monday - Friday		Saturday		Sunday	
		Day	Eve	Day	Eve	Day	Eve
132	Ledbury - Ross-on-Wye - Newent - Gloucester	120	-	120	-	-	-
417	Ledbury - Cradley - Worcester	*3	-	*4	-	-	-
476	Ledbury - Hereford	60	-	60	120	*4	-

* = Number of Services per Day

- 2.5.2 The full bus service summary and routes for these services are shown at Appendix 5.
- 2.5.3 In addition George Youngs Coaches operates Service 459 once a day between Ledbury and Ross on Wye in both directions.

Train Services

- 2.5.4 Ledbury railway station is provided on The Homend some 2.2km north of the site. The station lies on the Worcester to Hereford line.

2.5.5 Monday to Saturday there is one service per hour in each direction with trains running between Birmingham New Street and Hereford. There are additional trains during the peak periods on weekdays.

2.5.6 The service is reduced to a 2-hourly service on Sundays.

2.6 Safety Record

2.6.1 Personal injury accident records have been provided by Herefordshire Council for the five year period between 30th March 2014 and 22nd February 2019 inclusive. The data covers the stretch of Leadon Road between the Leadon Way/Ross Road/B4216 roundabout and the Leadon Way/The Southend/Gloucester Road Roundabout. The data also covers Gloucester Road to the east of the site. A plan of the accident locations and the accident details are provided at Appendix 6.

2.6.2 During the five year period there have been no accidents recorded on Leadon Way directly adjacent to the site. In the same time period there was one serious accident recorded on Gloucester Road some 50m south of the Leadon Way/The Southend/Gloucester Road roundabout.

2.6.3 A total of two accidents were recorded on the Leadon Way/Ross Road/B4216 roundabout. Both of the accidents were recorded as slight in severity.

2.6.4 One slight accident was recorded at the new roundabout between Leadon Way, Martins Way and the Barratt site access whilst a further slight accident was recorded on Leadon Way along the Barratt site frontage.

2.7 Existing Traffic Flows

ATC

2.7.1 Peter Evans Partnership Ltd commissioned an ATC survey to be undertaken on Leadon Way adjacent to the site for the 7 day period between 7th June 2017 and the 13th June 2017.

2.7.2 The weekday average peak hour vehicle approach flows along Leadon Way are shown in Appendix 7 and are summarised below:

Road	Peak Hour	Vehicle Direction	Weekday Average Hourly Traffic Total
Leadon Way	AM Peak 08:00-09:00	Westbound	443
		Eastbound	409
	PM Peak 17:00-18:00	Westbound	525
		Eastbound	282

- 2.7.3 In addition to recording traffic movements the ATC also recorded vehicle speeds past the site. The 85th percentile speeds were recorded at 54.3mph for westbound vehicles and 58.7mph for eastbound vehicles.

Classified Count and Queue Length Surveys

- 2.7.4 Peter Evans Partnership Ltd commissioned traffic and queue length surveys at three local junctions:

- Leaddon Way/The Southend/Gloucester Road Roundabout
- Leaddon Way/Martins Way Priority Junction
- Full Pitcher Roundabout

- 2.7.5 All turning movements at the junctions were recorded on Wednesday 7th June 2017 between 07:00-09:30 and 16:00-19:30.

- 2.7.6 The typical road network peak hour vehicle approach flows to the junctions surveyed are summarised below. The full movement peak hour traffic flows are shown in Appendix 7.

Leaddon Way/The Southend/Gloucester Road Roundabout

Junction	Peak Hour	Road	Arm Hour Total (Vehs)	Junction Hour Total (Vehs)
Leaddon Way/The Southend/Gloucester Road	AM Peak 08:00-09:00	Gloucester Road	414	1093
		Leaddon Way	360	
		The Southend	318	
	PM Peak 17:00-18:00	Gloucester Road	532	1066
		Leaddon Way	267	
		The Southend	267	

Leaddon Way/Martins Way Priority Junction

Junction	Peak Hour	Road	Arm Hour Total (Vehs)	Junction Hour Total (Vehs)
Leaddon Way/Martins Way	AM Peak 08:00-09:00	Leaddon Way W	384	1093
		Martins Way	87	
		Leaddon Way E	388	
	PM Peak 17:00-18:00	Leaddon Way W	346	1066
		Martins Way	60	
		Leaddon Way E	384	

Full Pitcher Roundabout

Junction	Peak Hour	Road	Arm Hour Total (Vehs)	Junction Hour Total (Vehs)
Full Pitcher Roundabout	AM Peak 08:00-09:00	Leadon Way E	469	1341
		B4216 S	113	
		A449 Ross Road	295	
		Leadon Way W	383	
		B4216 New Street	81	
	PM Peak 17:00-18:00	Leadon Way E	507	1508
		B4216 S	147	
		A449 Ross Road	317	
		Leadon Way W	447	
		B4216 New Street	90	

Third Party Data

2.7.7 The Ashley Helme Associates Transport Assessment dated March 2015 submitted as part of the permitted residential scheme to the west of the site provides 2014 turning count traffic data at the following junctions that PEP has assessed:

- New Street/The Southend/Worcester Road signal controlled junction (Top Cross)
- Leadon Way/Little Marcle Road/Lower Road roundabout
- Leadon Way/New Mills Way/Trading Estate roundabout
- Leadon Way/A438 Hereford Road roundabout
- A438 Hereford Road/Bromyard Road priority junction

New Street/The Southend/Worcester Road signal controlled junction (Top Cross)

Junction	Peak Hour	Road	Arm Hour Total (Vehs)	Junction Hour Total (Vehs)
New Street/The Southend/Worcester Road	AM Peak 08:00-09:00	Worcester Road	291	1049
		The Southend	211	
		New Street	279	
		The Homend	268	
	PM Peak 17:00-18:00	Worcester Road	305	1140
		The Southend	266	
		New Street	280	
		The Homend	289	

Leaddon Way/Little Marcle Road/Lower Road roundabout

Junction	Peak Hour	Road	Arm Hour Total (Vehs)	Junction Hour Total (Vehs)
Leaddon Way/Little Marcle Road/Lower Road	AM Peak 08:00-09:00	Lower Road	165	935
		Leaddon Way South	368	
		Little Marcle Road	39	
		Leaddon Road North	363	
	PM Peak 17:00-18:00	Lower Road	216	919
		Leaddon Way South	327	
		Little Marcle Road	83	
		Leaddon Road North	293	

Leadon Way/New Mills Way/Trading Estate roundabout

Junction	Peak Hour	Road	Arm Hour Total (Vehs)	Junction Hour Total (Vehs)
Leadon Way/New Mills Way/Trading Estate	AM Peak 08:00-09:00	Leadon Way South	254	836
		Leadon Way North	362	
		New Mills Way	131	
		Trading Estate	89	
	PM Peak 17:00-18:00	Leadon Way South	276	782
		Leadon Way North	284	
		New Mills Way	65	
		Trading Estate	157	

Leadon Way/A438 Hereford Road roundabout

Junction	Peak Hour	Road	Arm Hour Total (Vehs)	Junction Hour Total (Vehs)
Leadon Way/A438 Hereford Road	AM Peak 08:00-09:00	Leadon Way	249	1169
		A438 Hereford Road West	387	
		Unnamed Road	1	
		A438 Hereford Road East	406	
		New Mills Way	126	
	PM Peak 17:00-18:00	Leadon Way	278	1107
		A438 Hereford Road West	344	
		Unnamed Road	3	
		A438 Hereford Road East	422	
		New Mills Way	60	

A438 Hereford Road/Bromyard Road Priority Junction

Junction	Peak Hour	Road	Arm Hour Total (Vehs)	Junction Hour Total (Vehs)
A438 Hereford Road/Bromyard Road Priority Junction	AM Peak 08:00-09:00	A438 Hereford Road West	448	1175
		Bromyard Road	314	
		A438 Hereford Road South	413	
	PM Peak 17:00-18:00	A438 Hereford Road West	377	1188
		Bromyard Road	324	
		A438 Hereford Road South	487	

2.8 Local Car Ownership

- 2.8.1 The existing car ownership of the residential areas in the south of Ledbury has been reviewed using 2011 census data. Data from the Lower Super Output Areas (LSOAs) Herefordshire 019C and 019D have been used as these cover the residential areas within southern Ledbury and are likely to be most representative of the site.
- 2.8.2 The data from both LSOA's has been collated and the resulting average car ownership for this area is:

Local car ownership – Southern Ledbury	
Number of cars	2011 Census Residents
No car	19%
One car	48%
Two cars	26%
Three cars	5%
Four cars	2%

2.9 Existing Modal Split

- 2.9.1 The 2011 Census method of travel to work data for the same LSOA's has been reviewed to identify the current mode of travel used by residents living in the local area around the site to travel to work.

- 2.9.2 The average method of travel to work data for the southern residential area of Ledbury is set out below:

Mode of Travel	2011 Census – Method of Travel to Work
Car Driver	64.9%
Car Passenger	6.0%
Bus	1.6%
Train	1.2%
Cycle	2.7%
Walk	22.6%
Motorcycle	0.8%
Taxi	0%
Other	0.3%

2.10 Existing Site, Planning History and Extant Permissions/Applications

Existing Site Use

- 2.10.1 The application site is composed of two agricultural fields.
- 2.10.2 In December 2017 an application (reference P174745/O) was submitted for outline planning permission with all matters reserved (except for access) for the erection of up to 185 residential dwellings with associated car parking, access roads, public open space, landscaping and associated works on the proposed development site.
- 2.10.3 An appeal against non-determination was submitted for the site in April 2018 (reference: APP/W1850/W/18/3199584). This appeal was withdrawn by the applicant on the 3rd July 2018.

Extant Permissions/Applications

Land South of Leaddon Way

- 2.10.4 An outline planning application (reference: P150884/O) submitted by Gladman was granted at appeal (ref: APP/W1850/W/15/3009456) in June 2015 on the land directly west of the application site for the erection of up to 321 residential dwellings, planting, landscaping and informal public open space to include a children's play area, as noted in para 2.2.1.

2.10.5 A new roundabout access has been provided on Leadon Way which creates a junction between Leadon Way, Martins Way and the permitted site access. Local widening of the Leadon Road carriageway and new footways along both sides of Leadon Way and the west side of Martins Way are under construction as part of the new roundabout junction. It is also proposed that a speed limit of 40mph is introduced along Leadon Way within the vicinity of the proposed access roundabout.

2.10.6 A Transport Assessment produced by Ashley Helme Associates and dated March 2015 was submitted to Herefordshire County Council as part of the planning application. The Transport Assessment contains the permitted traffic generation figures for the site during the morning and evening peak hours. The permitted traffic generation for the permitted Barratt site is summarised below:

Time Period	Trips		
	Arrivals	Departures	Total
AM Peak 08:00 - 09:00	51	148	199
PM Peak 17:00 - 18:00	140	79	219

2.10.7 The development is being taken forward by Barratt with reserved matters for 275 dwellings has been submitted and awaits determination.

Land to the East of The Full Pitcher Pub

2.10.8 Outline planning permission (application reference: 141651) was granted in August 2015 on the land to the rear of The Full Pitcher pub on New Street for the erection of up to 100 residential dwellings with associated means of access and parking.

2.10.9 A new priority junction access is indicated to the north of The Full Pitcher pub off of New Street. The existing access would be closed up under the permitted development with a new car park for The Full Pitcher pub being provided off of the proposed access road. Footways are to be provided along the new access road to link with the existing footway on the east side of New Street.

2.10.10 As part of the permitted development Herefordshire Council propose to alter the geometry and layout of the Full Pitcher Roundabout by reducing all arms of the roundabout to single entry lanes.

2.10.11 A Transport Assessment produced by Townsend Associates and dated May 2014 was submitted to Herefordshire County Council as part of the planning application. The Transport Assessment contains the permitted traffic generation figures for the site during the morning and evening peak hours. The permitted traffic generation for the permitted Full Pitcher site is summarised below:

Time Period	Trips		
	Arrivals	Departures	Total
AM Peak 08:00 - 09:00	30	50	80
PM Peak 17:00 - 18:00	50	30	80

Ledbury Urban Extension

2.10.12 The Ledbury Urban Extension proposals (reference P171532/O) comprise a residential development of up to 625 dwellings as well as B1 employment uses on land to the north of the Ledbury viaduct.

2.10.13 At the time of preparing this report the Ledbury Urban Extension application has not been determined.

2.10.14 The Transport Assessment produced by PJA and dated December 2018 that accompanied the application contains the proposed development flows which are summarised below:

Time Period	Trips		
	Arrivals	Departures	Total
AM Peak 08:00 - 09:00	212	256	467
PM Peak 17:00 - 18:00	243	234	476

Land off Dymock Road Proposals

2.10.15 At the time of preparing this report the Land off Dymock Road application has recently been submitted for Gladman is the subject of an appeal.

2.10.16 The proposed development comprises a residential development of up to 420 dwellings with all matters reserved except for access. The application site is directly south of the permitted Barratt site and it is proposed that a vehicular, pedestrian and cycle link is provided through to the Barratt access road to provide access to the proposed site. The Transport Assessment produced by Ashley Helme Associates and dated October 2018 that accompanies the application includes the proposed traffic generation for the land off Dymock Road:

Time Period	Trips		
	Arrivals	Departures	Total
AM Peak 08:00 - 09:00	66	194	260
PM Peak 17:00 - 18:00	184	103	287

3.0 PLANNING POLICY

3.1 National Planning Policy

National Planning Policy Framework

- 3.1.1 The updated National Planning Policy Framework (NPPF) was published in February 2019.
- 3.1.2 NPPF 2019 retains 'at the heart of the Framework is a presumption in favour of sustainable development' (para 10 and 11).
- 3.1.3 In terms of transport it states that planning should actively manage patterns of growth in support of the opportunities to promote walking, cycling and public transport use. (paras 102 and 103). In assessing applications for development paragraph 108 notes assessments should ensure:
- 'appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
 - safe and suitable access to the site can be achieved for all users; and
 - 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.'
- 3.1.4 The NPPF states specifically at paragraph 109 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 of development are severe.'
- 3.1.5 Applications should also:
- give priority to pedestrian and cycle movements, and public transport access;
 - address the needs of people with disabilities;
 - create safe, secure and attractive places;
 - allow for efficient delivery of goods, and access by emergency vehicles; and
 - enable charging of plug-in and low emission vehicles. (para 110).
- 3.1.6 Local parking standards should also take into account site accessibility, availability and opportunity for public transport, mix of development and car ownership levels (para 105).

3.2 Herefordshire Development Plan

Local Plan Core Strategy 2011-2031

- 3.2.1 The Herefordshire Local Plan Core Strategy document was adopted on the 16th October 2015. The Core Strategy is one of the key documents of the Local Plan and provides the strategic planning framework for future development in the county up to the year 2031. The document outlines a strategic urban extension for residential development with a commitment to provide 800 new homes by the end of the plan period.
- 3.2.2 Policy LB1 states that Ledbury will accommodate a minimum of 800 new homes with the majority of the new housing development focussed to the north of the town. The policy states that the residential developments will need to be balanced with a minimum of 15ha of employment land. The policy outlines that new development will be encouraged within Ledbury where they:
- Improve accessibility within Ledbury by walking, cycling and public transport particularly where they enhance connectivity with local facilities, employment and the town centre;
 - protect and enhance its green infrastructure including connections to the public right of way network
- 3.2.3 Policy SS4 states that new developments should be designed and located to minimise the impacts on the transport network and should be accessible by modes of travel other than the private car. The policy outlines that developments that are not in a sustainable location will be required to demonstrate that they can be made sustainable by reducing unsustainable transport patterns and by promoting more sustainable travel. Policy SS4 also states that proposals to provide new and improved public transport, walking and cycling infrastructure will be supported.
- 3.2.4 Policy SS7 of the Core Strategy deals with climate change and outlines that new developments will be required to mitigate their impact on climate change by seeking to reduce the need to travel by private car and encourage sustainable travel options including walking, cycling and public transport.

3.2.5 Policy MT1 states that development proposals should incorporate the following principle requirements covering movement and transportation:

- demonstrate that the strategic and local highway network can absorb the traffic impact of the new development without adversely affecting safety and the efficient flow of traffic and that any adverse impacts are mitigated;
- promote and incorporate integrated transport connections;
- encourage active travel behaviour to reduce numbers of short distance car journeys through the use of travel plans and other promotional activities;
- ensure that developments are designed and laid out to achieve safe entrance and exit and are accessible by all modes of transport;
- protect existing or provide alternative footways, cycleways and bridleways; and
- have regard to both the council's Highways Development Design Guide and cycle and vehicle parking standards as prescribed in the Local Transport Plan.

Ledbury Neighbourhood Development Plan

3.2.6 The Ledbury Neighbourhood Development Plan was made on 11th January 2019 and now forms part of the Herefordshire Development Plan.

3.2.7 Policy TR1.1 supports proposals which contribute to and improve the network of pedestrian and cycling routes in the town to encourage greater accessibility.

3.3 Local Transport Plan

3.3.1 Herefordshire Council's Local Transport Plan 2016 to 2031 Delivery Strategy 2016 to 2031 sets out the council's vision and transport objectives as "a transport network that supports growth enabling the provision of new jobs and houses, whilst providing the conditions for safe and active travel, which reduces congestion and increases accessibility by less polluting and healthier forms of transport than the private car."

3.3.2 Ledbury is identified as being on the primary bus network of the priority network of core bus services. It is recognised as a market town within which the core strategy has set out proposals for new housing. The Council commits to undertaking detailed studies of each market town and provide an opportunity for local stakeholders to identify priorities in relation to development proposals and the complimentary transport measures which might be required for delivery.

3.3.3 The 'A' Roads running through and into Ledbury are noted as part of the strategic network following a Transport Resilience Review in 2014.

3.4 Manual for Streets

- 3.4.1 Manual for Streets (MfS) was published in 2007 by the Department for Transport, the Department of Communities and Local Government and the Welsh Assembly Government. The aim of the report was to put well-designed residential streets at the heart of sustainable communities, including through encouraging the creation of a sense of place and promoting walking and cycling.
- 3.4.2 The report was based on extensive research which identified that many of the criteria then routinely applied in street design were based on questionable or outdated practice, including on visibility standards. A further report, Manual for Streets 2, was published subsequently to extend similar principles to roads other than residential streets.

3.5 Herefordshire Highways Design Guide for New Developments 2006

- 3.5.1 The Herefordshire Design Guide for New Development was adopted in July 2006 and sets out guidance to aid developers in preparing transport infrastructure related to new developments. The document outlines the parking standards for the county however these are stated as maximum standards and reference PPG 13 which has now been superseded.

3.6 CIHT Guidance

- 3.6.1 The Chartered Institute of Highways and Transportation (CIHT) published 'Guidelines for Providing for Journeys on Foot' in 2000. This document indicates that the average length of a walking journey is 1 km. The report also provides advice on acceptable walking distances to various facilities.
- 3.6.2 The suggested distances are provided in Table 3.2 of the document as set out below:

	Suggested Acceptable Walking Distance (metres)		
	Town centres	Commuting/School	Elsewhere
Desirable	200	500	400
Acceptable	400	1000	800
Preferred Maximum	800	2000	1200

- 3.6.3 For new developments it is also important to anticipate desire lines and associated crossing locations. The attractiveness of walking would be affected by ease of pedestrian access to the site and the location of buildings and access arrangements within the site.

3.6.4 The CIHT guidance 'Buses in Urban Developments' 2018, sets out the following recommended maximum walk distances to bus stops:

- Core bus corridors with two or more high frequency services – 500m;
- Single high-frequency routes (every 12 minutes or better) – 400m;
- Less frequent routes – 300m.

3.7 Department for Transport Guidance

3.7.1 The Department for Transport suggests in 'Local Transport Note 2/08: Cycling Infrastructure Design' that 5km is a reasonable distance to cycle for utility purposes whereas an 8km cycle distance is not an unreasonable cycle distance for commuter journeys.

4.0 DEVELOPMENT PROPOSALS

4.1 Scheme Proposals

- 4.1.1 The proposals comprise a residential development of up to 140 dwellings with associated parking, access roads, public open space, landscaping, sustainable urban drainage, and associated works.
- 4.1.2 The application is in outline with all matters reserved except for the access.
- 4.1.3 The detailed housing mix would be determined through a reserved matters application.
- 4.1.4 The illustrative masterplan submitted with the application is shown at Appendix 8.

4.2 Vehicular Access and Estate Roads

- 4.2.1 It is proposed that a three-arm 40m ICD roundabout junction on Leadon Way is provided as the vehicular access point to serve the development as shown at Appendix 9.1.
- 4.2.2 A single lane carriageway entry width of 3m would be provided on the Leadon Way approach arms and on the development access arm.
- 4.2.3 It is proposed that the speed limit along Leadon Way adjacent to the site frontage is reduced to 40mph east of the proposed roundabout to the A449/A417 roundabout and west of the proposed roundabout to the new roundabout provided as part of the Barratt scheme. The roundabout has therefore been designed accordingly with forward visibility of 120m achievable.
- 4.2.4 The internal access road would continue south from the proposed roundabout to serve all residential dwellings. The estate roads would be a combination of roads with footways designed to 20mph speed limits and lower speed shared surfaces.

4.3 Pedestrian/Cycle Access

- 4.3.1 Pedestrian access into the site would be from Leadon Way to the north with 3.5m footway/cycleways provided on both sides of the site access road. The footway/cycleway on the east side of the access road would not continue along Leadon Way whereas the western footway/cycleway would continue onto the western arm of the proposed roundabout. Dropped kerbs, tactile paving and a pedestrian traffic island would be provided for pedestrians and cyclists to cross the site access arm.
- 4.3.2 A staggered toucan crossing is proposed on the western Leadon Way arm of the proposed site access roundabout some 20m west of the roundabout.

4.3.3 Directly adjacent to the proposed toucan crossing on the western arm of the Leadon Way/site access roundabout a 3m footway/cycleway link is proposed northwards across current grassland to link with Jubilee Close, subject to land ownership. A further connection would be made to the existing PROW LR7 which runs from Jubilee Close to Leadon Way to the east of the proposed roundabout.

4.3.4 West of the staggered toucan crossing a 3.5m footway/cycleway is proposed on the north side of Leadon Way to continue westwards and connect with the footway/cycleway being provided on the north side of Leadon Way as part of the adjacent permitted Barratt development. This would provide a continuous pedestrian route into central Ledbury via Martins Way.

4.4 Parking

Car Parking

4.4.1 Car parking provision would be in line with current national and local planning policy. The detailed level and means of provision is a matter for the reserved matters application stage.

Cycle Parking

4.4.2 Cycle parking would be provided within the curtilage of each dwelling within either garages, if provided, or garden sheds. Provision would be in accordance with Herefordshire Council guidance and would be secured by condition.

4.5 Traffic Generation

4.5.1 The TRICS National Database 2019 7.6.1 has been reviewed to determine traffic generation figures for residential development on land south of Leadon Way.

4.5.2 Sites with private houses on the edge of towns and in suburban areas in Wales, England and Scotland excluding London have been reviewed. Only those sites with a population of 50,000 or fewer within a five mile radius of the sites surveyed have been considered as these would be more comparable to Ledbury.

4.5.3 For the purpose of assessment private house trips have been used as these are generally slightly higher than affordable housing trips and therefore could overestimate the traffic generation.

- 4.5.4 The trip rates determined by TRICS have been used to estimate traffic generation for the site and are set out below with the full TRICS output provided at Appendix 10:

	TRICS Private House Vehicle Trip Rates (per dwelling)		
	Arrivals	Departures	Two-way
Morning Peak Hour 0800-0900	0.131	0.339	0.470
Evening Peak Hour 1700-1800	0.327	0.171	0.498

- 4.5.5 At the time of undertaking the traffic analysis the number of units proposed is 140. Based on the TRICS review the 140 units would generate the following vehicular traffic in the typical peak hours:

	Proposed Traffic Generation		
	Arrivals	Departures	Two-way
Morning Peak Hour 0800-0900	18	47	65
Evening Peak Hour 1700-1800	46	24	70

4.6 Traffic Distribution

- 4.6.1 The 2011 Census Travel to Work Data for residents living in the Herefordshire 019 Middle layer Super Output Area (MSOA) has been assessed as this is the MSOA which contains Ledbury. The car driver data obtained has been reviewed and this has identified the following destinations residents living locally travel to by car to work:

2011 Census Data – Car Driver Journey to Work	
Destination	Percentage
Herefordshire	56.1%
South West	19.0%
Wales	1.6%
West Midlands	20.6%
Other areas in UK	2.7%

- 4.6.2 The area of Herefordshire was then interrogated further to determine local workplace destinations travelled to by car:

2011 Census Data – Car Driver Journey to Work	
Destination within Herefordshire	Percentage of Total
Ledbury	29.4%
Local east of Ledbury	3.5%
Hereford & surroundings	15.6%
Malvern Hills	3.5%
Ross on Wye	2.7%
Bromyard	1.4%

- 4.6.3 Once the wider area distribution was determined from the census data a review of local routes was undertaken using knowledge of routes around Ledbury and local employment areas within the town, and Google maps and the 'directions' option for locations further afield. The following assignment of cars travelling from the development was determined:

Proposed Traffic Assignment	
Road Assignment	Proposed Traffic Distribution
Leadon Way (E)	37%
Leadon Way (W)	63%
A449 Ross Road	7%
A438 Hereford Road (W)	18%
A4214 Bromyard Road	13%
A449 Worcester Road	10%
A417 Gloucester Road (S)	24%
B4216	3%
Little Marcle Road	8%
A449 The Southend	3%
New Street	9%
Trading Estate off Little Marcle roundabout	6%

- 4.6.4 Access to the adjacent permitted Barratt development is also via Leadon Way to the west of the application site being assessed by PEP. The traffic distribution put forward in Table 3 of the Transport Assessment produced by Ashley Helme Associates and dated March 2015, submitted as part of the permitted Barratt planning application (reference: 150884) has therefore also been reviewed. The traffic distribution put forward by the Barratt scheme is also based on a review of the 2001 census data.

- 4.6.5 From this data the following assignment was set by Ashley Helme:

Adjacent Site – Permitted Traffic Assignment	
Road Assignment	Percentage
A449 Ross Road	4%
A438 Hereford Road (W)	15%
A4214 Bromyard Road	12%
A449 Worcester Road	9%
A417 Gloucester Road (S)	26%
B4216	5%
Little Marcle Road	7%
A449 The Southend	4%
New Street	11%
Trading Estate off Little Marcle roundabout	7%

- 4.6.6 It is our understanding that the traffic distribution/assignment used for the adjacent residential application and the resultant testing have been deemed acceptable by the highways officers at Herefordshire Council.

- 4.6.7 A comparison of the traffic distribution calculated by PEP using the 2011 census, and that used by the adjacent residential development has been undertaken as follows:

Traffic Distribution Comparison		
Road Assignment	PEP distribution	Ashley Helme Distribution
Leadon Way (E)	37%	39%
Leadon Way (W)	63%	61%
A449 Ross Road	7%	4%
A438 Hereford Road (W)	18%	15%
A4214 Bromyard Road	13%	12%
A449 Worcester Road	10%	9%
A417 Gloucester Road (S)	24%	26%
B4216	3%	5%
Little Marcle Road	8%	7%
A449 The Southend	3%	4%
New Street	9%	11%
Trading Estate off Little Marcle roundabout	6%	7%

- 4.6.8 The comparison confirms that the 2011 census distribution calculated by PEP broadly reflects trip distribution/assignment patterns documented in the Ashley Helme Transport Assessment and agreed by Herefordshire Highways.
- 4.6.9 As it is understood that the trip distribution used by Ashley Helme has been agreed by the highway authority, the distribution from the adjacent permitted residential application has been used to calculate the distribution from the proposed site as the permitted site is directly to the west and would distribute traffic through the same local junctions.
- 4.6.10 The proposed traffic distribution from the site is therefore assigned on the local roads/junctions as follows:

Proposed Traffic Distribution	
Leadon Way (E)	39%
Leadon Way (W)	61%
A449 Ross Road	4%
A438 Hereford Road (W)	15%
A4214 Bromyard Road	12%
A449 Worcester Road	9%
A417 Gloucester Road (S)	26%
B4216	5%
Little Marcle Road	7%
A449 The Southend	4%
New Street	11%
Trading Estate off Little Marcle roundabout	7%

- 4.6.11 The proposed traffic distribution through the network in the morning peak hour is shown at Appendix 11.

4.7 Multi-Modal Assessment

- 4.7.1 The TRICS database has been reviewed to predict the number of total journeys to and from the development per peak hour and day. The same search criteria as the vehicle trip rates have been applied. This identifies the trip rates as given in Appendix 10 and set out below.

	TRICS Private House People Trip Rates (per dwelling)		
	Arrivals	Departures	Two-way
Morning Peak Hour 0800-0900	0.221	0.682	0.903
Evening Peak Hour 1700-1800	0.635	0.313	0.948
Daily	4.272	4.354	8.626

- 4.7.2 On this basis of the proposed development the Land to the south of Leadon Way would generate the following people trips:

	People		
	Arrivals	Departures	Two-way
Morning Peak Hour 0800-0900	31	95	126
Evening Peak Hour 1700-1800	89	44	133
Daily	598	610	1208

- 4.7.3 Applying the modal split of journeys to work to these total people journeys gives a broad indication of the potential number of journeys by each mode for the proposed development, as set out below:

Mode	AM Peak Hour 08:00-09:00			PM Peak Hour 17:00-18:00		
	Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
Car Driver	20	61	81	58	29	87
Car Passenger	2	6	8	5	2	7
Bus	1	2	3	1	1	2
Train	0	1	1	1	1	2
Cycle	1	3	4	2	1	4
Walk	7	21	29	21	10	31
Motorcycle	0	1	1	1	0	1
Other	0	0	0	0	0	0

- 4.7.4 The above data does not take into account that work based journeys are not undertaken during peak hours only, or consistently throughout the day, which could result in a slightly different modal split throughout the day. Nor does it take into account that non-work based journeys could be more local and therefore result in a slightly lower car use. However, in the absence of more specific information this methodology has been used as a proxy to estimate non-car traffic generation.

4.8 Travel Plan

- 4.8.1 A Residential Travel Plan is submitted with the application which sets out principles of Travel Planning for the site. Further details would be established by further reserved matters submissions associated with the final details of the development. Design measures such as suitable pedestrian and cycle routes to assist promotion of Travel Plan objectives are incorporated in the layout planning.

- 4.8.2 Measures incorporated in the submitted Travel Plan include:

- appointment of a Site Wide Travel Plan Coordinator;
- establishment of a Residents' Travel Plan Steering Group;
- provision of travel information to first new residents of each property;
- monitoring of progress, including organising annual surveys; and
- reporting annually to Herefordshire Council.

4.9 Off-Site Highway Works

- 4.9.1 The following off-site highway works are proposed:

- localised widening of Leadon Way to provide the site access roundabout;
- funding Traffic Regulation Order (TROs) to introduce a 40mph speed limit along Leadon Way;
- provision of a toucan crossing across Leadon Way at the proposed site access roundabout;
- provision of a footway/cycleway along the northern side of Leadon Way west of the site to connect with the pedestrian facilities proposed as part of the permitted Barratt scheme to the west; and
- provision of traffic calming measures along Leadon Way west of the proposed roundabout in the form of 'rugby ball' traffic islands.

- 4.9.2 The proposals are shown in Appendix 9.2.

5.0 TRANSPORT APPRAISAL

5.1 Approach

5.1.1 Our appraisal of the proposed development assesses:

- accessibility by foot;
- accessibility by cycle;
- accessibility by bus;
- site access and layout design;
- parking provision;
- whether the site would generate rat running traffic along Little Marcle Road/Falcon Lane and Knapp Lane/ Cut Throat Lane, as requested by the highways officer;
- effect of development traffic at local junctions;
- provision for servicing;
- road safety review; and
- consistency with policy.

5.2 Accessibility by Foot

5.2.1 The proposed development is anticipated to generate in the order of 30 and 32 pedestrian movements during each peak hour respectively as well as additional pedestrian trips during the course of the day.

5.2.2 A network of footways would be provided throughout the site connecting the proposed residential areas with open land to the south via Public Right of Way LR7 to the east of the site. The routes within the development would be designed at the reserved matters stage.

5.2.3 A central traffic island with dropped kerbs and tactile paving would be provided on the site access arm of the proposed roundabout in order to facilitate pedestrians and cyclists crossing the site access road.

5.2.4 A toucan crossing point would be provided on the western arm of the proposed roundabout to facilitate pedestrians and cyclists crossing Leadon Way from the site access. A footway/cycleway is proposed on the northern side of Leadon Way to connect with the pedestrian facilities proposed as part of the adjacent permitted Barratt residential scheme to the west.

5.2.5 A continuous footway link will be provided west to the start of the Ledbury Town Trail which is a key strategic pedestrian route through central Ledbury. The proposed development is therefore accessible to the town via the proposed routes to the west.

- 5.2.6 A footway/cycleway link is proposed adjacent to the proposed toucan crossing to link the footway/cycleway on the north side of Leadon Way with the footways on Jubilee Close to the north. From here continuous footway links are provided to the bus stops on Biddulph Way, John Masefield High School and the town centre.
- 5.2.7 A number of footpaths running adjacent to the rear of residential properties are provided throughout the residential estate to the north of Leadon Way and connect Biddulph Way with Mabel's Furlong.
- 5.2.8 The routes to employment, schools, shops and healthcare facilities are shown in Appendix 12.1, and are described in more detail in the following section.
- 5.2.9 Appendix 12.2 Shows 1km and 2km isochrones from the centre of the development site. These indicate that the majority of central Ledbury is within a direct line distance of 2km of the central part of the site including both the primary and secondary schools. Taking the on-the-ground route the travel distances to facilities are greater but key facilities would be within the maximum walk distances of the site, consistent with the IHT guidelines. Further consideration of this is given below.
- 5.2.10 Footway and crossing facilities would be provided to link to local pedestrian routes to facilities.
- 5.2.11 The proposed development offers the potential to further improve connectivity for existing and future residents of Ledbury, as shown in Appendix 12.3.
- 5.2.12 The Travel Plan would encourage journeys to be undertaken on foot.
- 5.2.13 In summary the site is accessible on foot and would provide the opportunity to further enhance connectivity of southern Ledbury.

Pedestrian Routes to Local Facilities

- 5.2.14 PEP reviewed the local area and identified the most direct pedestrian routes to the following local facilities.

Schools

- John Masefield High School – Residents could utilise the footway/cycleway and crossing point proposed on Leadon Way to the west of the proposed roundabout to cross land to the north of Leadon Way and connect with the footways on Jubilee Close and PROW LR7. The school is 600m to the north of the site via this route. Continuous footway is provided north to Blenheim Drive where a footpath is provided directly north to the school gates.

- Ledbury Primary School – Residents could utilise the footway/cycleways and crossing point proposed to connect to the existing footways on Jubilee Close and PROW LR7 via the proposed footpath across land to the north of the site. Residents could then continue north through the southern residential area of Ledbury to connect with the footways on The Southend. Footways along New Street, Market Street, Bridge Street and Long Acres could then be used to access the school. The primary school is some 2km north of the site via this route.

Bus Stops

- Orchard Place Stops – The Orchard Place bus stops are the closest stops to the site and are located on Biddulph Way. Residents could travel north from the site on the proposed footway/cycleway on the north side of Leadon Way, connecting with Jubilee Close via the proposed Toucan Crossing and footway/cycleway link. The footways along Jubilee Close continue north to connect with those on Biddulph Way. The Orchard Place bus stops are some 250m north of the site via this route.

Food Store

- The Co-op food store on New Street is the closest food store to the site. The Co-op food store is some 1.2km north of the site via the proposed footway/cycleways on Leadon Way to the west of the proposed roundabout. Residents would use the crossing point proposed and continue north from via Jubilee Close to meet the footway provided on the Southend before arriving at New Street where they would turn west to the Co-op
- The Tesco Superstore is some 2km north of the site via the southern residential areas of Ledbury, connecting to footways on The Southend and The Homend.

Employment

- Area of employment south of Full Pitcher roundabout – This area of employment could be accessed on foot via the footway/cycleway proposed along the north of Leadon Way west of the site to connect to the pedestrian facilities proposed as part of the adjacent Barratt development. Residents would then be able to use the proposed Barratt footway/cycleway on the south of Leadon Way via their proposed pedestrian crossing, connecting to The Full Pitcher roundabout where a central paved island is provided to facilitate pedestrians crossing the southern arm to the employment land. The employment land is provided some 880m west of the site via this route.
- Heineken Brewery – The Heineken Brewery is accessible on foot via a footpath that runs northwards from the Ross Road arm of The Full Pitcher roundabout. The footpath runs parallel to Leadon Way and connects to the footways on Little Marcle Road where the Heineken Brewery is located. The Heineken Brewery is some 1.6km north west of the site via this route.

Healthcare

- Ledbury Market Surgery, St Katherine's Surgery and Ledbury Community Health and Care Centre are all provided on Market Street. Market Street is accessible on foot from the site via the proposed footway/cycleway and crossing point to the west connecting to Jubilee Close where footways are provided to The Southend. Residents would continue north along The Southend to New Street which connects to Market Street. Healthcare facilities on Market Street are some 1.5km north of the site via this route.

Railway Station

- The railway station is located at the northern edge of the town, accessed via The Southend, High Street and The Homend. It is a continuous route along footways adjacent to the carriageway. It is approximately 2.2km north of the site.

5.2.15 The walking routes to local facilities are shown at Appendix 12.1.

Summary of Pedestrian Routes

5.2.16 The proposals include for journeys on foot to the north and west and provide access to local facilities. The proposals allow for improved connectivity for existing residents of Ledbury.

5.2.17 The Travel Plan would encourage residents to travel on foot rather than car.

5.3 Accessibility by Cycle

5.3.1 The proposed development is anticipated to generate in the order of 4 cycle movements during the peak hours and additional movements throughout the day.

5.3.2 Although there are no national cycle routes in Ledbury and no local cycle routes within the vicinity of the site there are a number of local traffic-free and on-road routes within central Ledbury north of Leadon Way. As described above, footway/cycleways are proposed along the north of Leadon way to facilitate cycle movements from the site as well as a footway/cycleway links to the residential area to the north of Leadon Way. These will connect cyclists to Martins Way and Jubilee Close as well as to the Ledbury Town Trail where cyclists can continue into central Ledbury.

5.3.3 Cycling by residents within the site would be accommodated by design at the reserved matters stage and encouraged through the Travel Plan and by provision of facilities including secure cycle parking. The masterplan allows for cycling on-street with low vehicle speeds provided through design.

5.3.4 Cyclists would enter and leave the development via the main site vehicular access on road or the proposed off-road pedestrian/cycle routes to the west of the site access.

- 5.3.5 The entirety of Ledbury is within a 5km cycle of the site. All areas of Ledbury are therefore within a suitable distance for both leisure and commuter cycle journeys as defined in 'Local Transport Note 2/08: Cycling Infrastructure Design'.
- 5.3.6 As part of the previous application the highway authority advised that they seek S106 contributions from schemes to promote improvements to the pedestrian/cycle network as shown in Appendix 3.2. The proposed development offers the potential to further improve connectivity for existing and future residents of Ledbury.
- 5.3.7 In summary the site would be accessible by cycle.

5.4 Public Transport

- 5.4.1 There is an hourly bus service to Hereford and a two hourly bus service to Gloucester provided on Biddulph Way to the north of Leadon Way. These services could be utilised for employment trips, commuter shopping and leisure journeys outside of Ledbury.
- 5.4.2 For those whose journeys by public transport is suitable, the bus stops provided on Biddulph Way would be accessible via the proposed pedestrian crossing on Leadon Way and the footway/cycleway link to Jubilee Close.

5.5 Site Access and Layout Review

Roundabout and Crossing

- 5.5.1 The design of the proposed site access roundabout is in accordance with the Department for Transport design standard TD 16/07 'Geometric Design of Roundabouts'.
- 5.5.2 Forward visibility splays for all arms of the roundabout are proposed as 120m in accordance with Design Manual for Roads and Bridges. This is consistent with the proposed introduction of a 40mph speed limit along Leadon Way to the east and west of the proposed roundabout.
- 5.5.3 A swept path analysis of the junction has been undertaken to demonstrate a maximum length 16.5m articulated vehicle is able to manoeuvre safely. The results are provided at Appendix 13.
- 5.5.4 The proposed toucan crossing design is consistent with the proposed 40mph speed limit on Leadon Way. Connections are proposed from the site and to existing pedestrian/cycle routes to the north of Leadon Way. These connections are designed in accordance with guidance.
- 5.5.5 A Stage 1 Road Safety Audit will be undertaken for the proposed site access arrangements with a designer's response submitted to the planning authority post application.

Internal Layout

5.5.6 The estate roads would be designed at the reserved matters stage. The proposals would be designed in line with the principles of Manual for Streets and the adopted Herefordshire Highways Design Guide for New Developments.

5.5.7 The design would encourage pedestrian and cycle movement through the site providing suitable permeability through the site and connectivity to the surrounding area.

5.6 Parking Review

5.6.1 Both car and cycle parking provision would be in line with current national and local planning policy. The detailed level and means of provision is a matter for the reserved matters application.

5.7 Potential for Rat Running

5.7.1 It has been highlighted that there is a potential that traffic from the proposed development could rat run via the following roads:

- Little Marcle Road / Falcon Lane for those travelling to Hereford Road ; and
- Knapp Lane / Cut Throat Lane for those travelling towards Malvern.

5.7.2 We have reviewed these routes as potential rat-running routes. The Little Marcle / Falcon Lane route would provide an alternative route for people travelling from Leadon Way towards Hereford who want to avoid Leadon Way or a section of the A438.

5.7.3 Using Google directions from the Little Marcle roundabout on Leadon Way to the Falcon Lane junction on the A438 the journey distance using Leadon Way / A438 would be 2.8 miles and would take 4 minutes to drive. The Little Marcle Road / Falcon Road route would be 2.2 miles and would take 7 minutes to drive. Based on this the Falcon Lane route would take longer to drive than travelling along the main route.

5.7.4 The Leadon Way / A438 route is a 60mph single carriageway route. Falcon Lane is for the most part a narrow single track road with passing places. This is likely to slow drivers down quite significantly, therefore increasing the travel time even more.

5.7.5 We therefore consider that the Little Marcle Road / Falcon Lane route, while slightly shorter in distance, would not be a desirable route choice for the majority of drivers.

5.7.6 The Knapp Lane / Cut Throat Lane route would provide an alternative route for people travelling from the north of Ledbury towards Malvern for people trying to avoid the A449 Worcester Road from the town centre.

- 5.7.7 Our site is in the south of Ledbury near the Leadon Way / A417 Gloucester Road junction. From here people travelling towards Malvern would use the A449 The Southend towards the town centre and would then turn right at the 'Top Cross' junction into Worcester Road.
- 5.7.8 To use the Knapp Lane route they would still have to use this junction, however they would go straight ahead here and turn right into Knapp Lane further north. They would then re-join Worcester Road further to the north east.
- 5.7.9 Using Google directions the from the 'top cross' junction to where Cut Throat Lane meets Worcester Road the journey distance along Worcester Road would be 0.9 miles and would take 2 minutes to drive. The Homend / Knapp Lane / Cut Throat Lane route would have a journey distance of 1.2 miles and would take 5 minutes to drive.
- 5.7.10 Worcester Road, once clear of the town centre, changes to a 60mph speed limit single carriageway route. The Homend is an urban road with pedestrian crossings. Knapp Lane is in places single track with passing places. Both of these features would slow drivers down.
- 5.7.11 We therefore consider that using Knapp Lane as an alternative to Worcester Road would not be a desirable route choice for drivers from the development. They would still have to travel into the town centre to use the 'top cross' junction and would have further and longer to travel on less desirable roads.

5.8 Junction Capacity Testing

Approach

- 5.8.1 Based on proposed trip generation and distribution PEP have undertaken an analysis of the anticipated traffic impact at local junctions. The following junctions have been considered:
- New Street/The Southend/Worcester Road signal controlled junction (Top Cross)
 - A417 Gloucester Road/Leadon Way roundabout
 - Leadon Way/A449 Ross Road/B4216/New Street roundabout (Full Pitcher)
 - Leadon Way/Little Marcle Road/Lower Road roundabout
 - Leadon Way/New Mills Way/Trading Estate roundabout
 - Leadon Way/A438 Hereford Road roundabout
 - A438 Hereford Road/Bromyard Road priority junction
 - Leadon Way/Martin's Way/Barratt Scheme roundabout

5.8.2 The following table indicates the level of two-way traffic generated by the proposed development which is proposed to use each of the junctions:

2-way traffic impact at key junctions			
Junction	% of traffic	AM trips	PM trips
1 - New Street / The Southend / Worcester Road Signalised Junction (Top Cross)	9%	6	6
2 - A417 Gloucester Road / Leaddon Way Roundabout	39%	25	27
3 - Leaddon Way / A449 Ross Road / B4216 / New Street Roundabout	62%	40	43
4 - Leaddon Way / Little Marcle Road / Lower Road Roundabout	41%	26	28
5 - Leaddon Way / New Mills Way / Trading Estate Roundabout	34%	24	23
6 - Leaddon Way / A438 Hereford Road Roundabout	27%	18	19
7 - A438 Hereford Road / Bromyard Road Roundabout	12%	8	8
8 - Leaddon Way / Martin's Way / Barratt Roundabout	62%	40	43

5.8.3 The table indicates that at two of the eight junctions there would be an increase in traffic of 30 or more vehicles.

5.8.4 PEP have reviewed the March 2015 Ashley Helme TA submitted as part of the permitted Barratt site application to gain an understanding of the current and forecast performance of the above junctions. Section 9 of that TA describes all of the junctions (junctions 2, 3, 4, 5, 6 and 8 from above) as operating with 'high levels of spare capacity and negligible queues and delays' in all current and forecast scenarios. This indicates that the traffic from the current proposal is not likely to have a material impact on the performance of any of these junctions.

5.8.5 The proposed development would result in an additional 6 two-way trips through the Top Cross junction during each peak hour respectively, this equates to 1 additional vehicle movement every 10 minutes. The Top Cross junction was however flagged as a junction of concern by the highway officer at Herefordshire Council as part of the previous application on the site. PEP have therefore considered the traffic impact at this junction in more detail.

5.8.6 PJA Consultancy undertook a Linsig assessment of the Top Cross junction as part of their TA submitted as part of the Ledbury Urban Extension application dated December 2018. The Linsig model concluded that in the forecast year (2031) with development the junction would operate with a PRC of 10.7% in the morning peak hour and 3.0% in the evening peak hour. The maximum queue lengths are predicted to be between 11 and 15 in the morning peak hour and 12 and 17 in the evening peak hour.

- 5.8.7 The addition of 6 two-way trips through the junction in the morning and evening peak hours as a result of the proposed development is not likely to have a material impact on the performance of this junction.

Flows for Testing

- 5.8.8 Due to the relatively low level of additional traffic proposed through a majority of the eight junctions identified it is proposed that only the junctions below are capacity tested due to their close proximity to the site:

- A417 Gloucester Road/Leadon Way roundabout
- Leadon Way/A449 Ross Road/B4216/New Street roundabout (Full Pitcher)
- Leadon Way/Martin's Way/Barratt Scheme roundabout
- Proposed site access roundabout

- 5.8.9 The capacity testing has been undertaken for the typical weekday peak hours 08:00-09:00 and 17:00-18:00. These hours have been chosen as they represent when the proposed development would generate the most amount of traffic.

- 5.8.10 The assessment has been undertaken for the years 2020 which represents opening year and 10 years after opening, as was agreed with the highway authority as part of the previous application for the site.

- 5.8.11 Base traffic flows have been derived from the traffic surveys undertaken on Wednesday 7th June 2017. These figures have then been growthed to 2020 and 2030 using the department for Transport TEMPRO 7.2 computer program, and adjusted using the NTM tool within TEMPRO. The following growth factors have been determined:

Year	Growth Factor	
	AM Peak Hour	PM Peak Hour
2017-2020	1.040847	1.039082
2017-2030	1.148113	1.144158

- 5.8.12 Traffic flows associated with the adjacent permitted Barratt development (application reference: 150884) and the permitted development on land to the east of The Full Pitcher pub (application reference: 141651) have been added to the growthed surveyed traffic flows. The proposed development flows associated with the proposed Ledbury Urban Extension have also been added to the growthed survey flows in order to form the baseline flows for testing. The flows have been obtained from the relevant TA's associated with the applications. No separate traffic generation will be applied for allocated sites as this will be taken into consideration through the application of the growth factors.

- 5.8.13 The Aldi store was not open when the traffic surveys were undertaken and therefore this traffic is not taken into account. The Aldi TA notes that they have very little effect on the road network and no capacity testing was undertaken as part of the application. It was agreed with the highways officer that it was acceptable to discount these flows from the capacity testing.
- 5.8.14 The development traffic set out in Section 4.5 has been added to the growthed future baseline flows to predict the future flows with development.
- 5.8.15 A separate sensitivity scenario has been tested whereby the flows associated with the recent Gladman 'land off Dymock Road' application have been added to the growthed baseline flows with development to give worst case scenario traffic impact assessment. Flows have been taken from the Ashley Helme TA dated October 2018 and submitted with the application.
- 5.8.16 The capacity flows for testing are shown at Appendix 14.

Capacity Testing Methodology

- 5.8.17 The roundabouts have all been tested using the computer modelling program JUNCTIONS 9, which contains the roundabout model ARCADY. Roundabouts are typically considered by highway engineers to be operating satisfactorily in terms of capacity when the ratio of flow to capacity (RFC) is below 0.85. Junctions with higher RFCs can still operate satisfactorily although a more detailed analysis of capacity and queuing is required in such cases.

Capacity Test Results

5.8.18 The capacity test results output tables for each junction are shown at Appendix 15 and summarised below:

A417 Gloucester Road/Leadon Way Roundabout

A417 Gloucester Road/Leadon Way Roundabout				
Year	Time	Scenario	Max RFC	End Queue (vehicles)
2020	AM Peak	Baseline	0.39	Less than 1 on Gloucester Rd
		Baseline + Development	0.40	Less than 1 on Gloucester Rd
		Sensitivity	0.41	Less than 1 on Gloucester Rd
	PM Peak	Baseline	0.46	Less than 1 on Gloucester Rd
		Baseline + Development	0.47	Less than 1 on Gloucester Rd
		Sensitivity	0.51	1 on Gloucester Rd
2030	AM Peak	Baseline	0.43	Less than 1 on Gloucester Rd
		Baseline + Development	0.44	Less than 1 on Gloucester Rd
		Sensitivity	0.45	Less than 1 on Gloucester Rd
	PM Peak	Baseline	0.50	1 on Gloucester Rd
		Baseline + Development	0.51	1 on Gloucester Rd
		Sensitivity	0.55	2 on Gloucester Rd

5.8.19 The junction capacity testing indicates that the junction would operate satisfactorily within capacity during all scenarios tested.

Full Pitcher Roundabout

5.8.20 Works are proposed to the Full Pitcher Roundabout. The revised layout has been used for capacity testing. The results are given below.

Full Pitcher Roundabout				
Year	Time	Scenario	Max RFC	End Queue (vehicles)
2020	AM Peak	Baseline	0.60	2 on Leadon Way east
		Baseline + Development	0.63	2 on Leadon Way east
		Sensitivity	0.74	3 on Leadon Way east
	PM Peak	Baseline	0.61	2 on Leadon Way west
		Baseline + Development	0.62	3 on Leadon Way west
		Sensitivity	0.68	4 on Leadon Way west
2030	AM Peak	Baseline	0.65	2 on Leadon Way east
		Baseline + Development	0.69	3 on Leadon Way east
		Sensitivity	0.79	4 on Leadon Way east
	PM Peak	Baseline	0.67	2 on Leadon Way west
		Baseline + Development	0.68	2 on Leadon Way west
		Sensitivity	0.74	3 on Leadon Way west

5.8.21 The junction capacity testing indicates that the junction would operate satisfactorily within capacity during all scenarios tested.

Leadon Way/Martins Way/Barratt Scheme Roundabout

Leadon Way/Martins Way/Barratt Scheme Roundabout				
Year	Time	Scenario	Max RFC	End Queue (vehicles)
2020	AM Peak	Baseline	0.41	1 on Leadon Way east
		Baseline + Development	0.44	1 on Leadon Way east
		Sensitivity	0.47	1 on Leadon Way east
	PM Peak	Baseline	0.50	1 on Leadon Way east
		Baseline + Development	0.51	1 on Leadon Way east
		Sensitivity	0.60	2 on Leadon Way east
2030	AM Peak	Baseline	0.45	1 on Leadon Way east
		Baseline + Development	0.48	1 on Leadon Way east
		Sensitivity	0.51	1 on Leadon Way east
	PM Peak	Baseline	0.55	2 on Leadon Way east
		Baseline + Development	0.55	2 on Leadon Way east
		Sensitivity	0.55	2 on Leadon Way east

- 5.8.22 The junction capacity testing indicates that the junction would operate satisfactorily within capacity during all scenarios tested.

Proposed Site Access Roundabout

Proposed Site Access Roundabout				
Year	Time	Scenario	Max RFC	End Queue (vehicles)
2020	AM Peak	Baseline	0.51	2 on Leadon Way west
		Baseline + Development	0.51	2 on Leadon Way west
		Sensitivity	0.54	2 on Leadon Way west
	PM Peak	Baseline	0.60	2 on Leadon Way east
		Baseline + Development	0.62	2 on Leadon Way east
		Sensitivity	0.69	3 on Leadon Way east
2030	AM Peak	Baseline	0.56	2 on Leadon Way west
		Baseline + Development	0.57	2 on Leadon Way west
		Sensitivity	0.64	2 on Leadon Way west
	PM Peak	Baseline	0.65	2 on Leadon Way east
		Baseline + Development	0.67	2 on Leadon Way east
		Sensitivity	0.73	3 on Leadon Way east

- 5.8.23 The junction capacity testing indicates that the proposed site access junction would operate satisfactorily within capacity during all scenarios tested.

5.9 Servicing

- 5.9.1 Refuse collection would be undertaken from within the site.
- 5.9.2 Turning heads would be provided within residential areas to allow service vehicles to enter and leave the site in a forward gear.
- 5.9.3 The swept path analysis of the proposed accesses are provided in Appendix 12, as noted above in Section 5.3.

5.10 Road Safety Review

- 5.10.1 No vehicular accidents have occurred on Leadon Way within the vicinity of the site during the five year period reviewed.
- 5.10.2 Only one serious accident was recorded and this was on Gloucester Road to the south of the Gloucester Road/Leaddon Way roundabout.
- 5.10.3 The number and frequency of accidents is not sufficient to warrant further investigation by the highway authority.

- 5.10.4 There is no reason to suggest that the increase in traffic as a result of the development would have an adverse effect on road safety.
- 5.10.5 The reduction of the speed limit along Leadon way to 40mph and the introduction of traffic calming features as part of both the proposed development and adjacent permitted Barratt scheme would have a beneficial impact on highway safety. Furthermore the introduction of a further roundabout onto Leadon Way would act as a traffic calming measure helping to slow traffic adjacent to the site.

5.11 Policy Review

National Policy

- 5.11.1 The proposed development provides the opportunity to travel by non-car means including by foot and cycle. A number of pedestrian links to existing footways and cycleways are to be provided as part of the development.
- 5.11.2 Safe and suitable accesses can be achieved. Delivery of goods could be accommodated and conflicts between pedestrians and cycle movements can be minimised.
- 5.11.3 Traffic assessment has taken into consideration the permitted development adjacent to the site as well as that behind The Full Pitcher pub. Other non-permitted developments have also been considered, and as such a cumulative assessment has been undertaken. The junctions are predicted to operate within capacity with the proposed development. The residual cumulative impact of the development would not be severe.
- 5.11.4 The proposal is therefore consistent with National Planning Policy.

Local Policy

- 5.11.5 Pedestrian and cycle links from the site to the existing footways on Jubilee Close, Martins and the Ledbury Town Trail would be provided. All of these pedestrian routes could be used to link to central Ledbury as well as education and health care facilities. Furthermore links to Public Right of Way LR7 running along the eastern boundary of the site would be provided and would mean that existing residents could connect to surrounding Public Rights of Way for circular walks. This is in keeping with policies SS4 and LB1 of the Core Strategy and policy TR1.1 of the Ledbury Neighbourhood Development Plan
- 5.11.6 Alternative modes of transport to the private car are encouraged through the design of the site. The primary access road would have a 20mph speed limit with footway provision on both sides linking to continuous footways throughout the development parcels making it suitable for pedestrians and cyclists. Footway/cycle way links will be provided to connect the site to existing footway provision and the town centre. This is in keeping with

policies SS4 and SS7 of the Core Strategy.

- 5.11.7 Capacity testing of the proposed site access junction and a number of local junctions has shown that the traffic generated by the development would not adversely impact the surrounding road network with all junctions tested being shown to operate within capacity during both the morning and evening peak hours. This is consistent with policy MT1 of the Core Strategy.
- 5.11.8 A residential Travel Plan submitted as part of the outline application would seek to reduce the use of the single occupancy car journey as a method of travel by promoting alternative modes. This adheres to policy MT1 of the Core Strategy.
- 5.11.9 The provision of the footway/cyclways along Leadon Way and the provision of pedestrian crossings would ensure safe pedestrian access to the site in line with policy MT1 of the Core Strategy.
- 5.11.10 The proposed access and the introduction of the speed limit along Leadon Way of 40mph offers traffic management measures and provides safe access to the site for all modes of transport which is in keeping with policy MT1 of the Core Strategy.
- 5.11.11 The proposed access junction has been designed with regard to Herefordshire County Council's Highways Design Guide.
- 5.11.12 The capacity testing of the proposed access and other junctions indicates that the A roads which are part of the strategic network would not be adversely affected by the proposal.

6.0 CONCLUSIONS

- 6.1.1 The proposed development comprises numerous improvements to the previously withdrawn appeal for the Site (App Ref. P174745/O), including the removal of the previously proposed highway intervention and associated physical works along the Southend (A449), which result in reduced impacts on the highway network.
- 6.1 The proposal is consistent with the transport requirement of NPPF.
- 6.2 The proposal is consistent with local policy.
- 6.3 The proposals would connect to the existing pedestrian network surrounding the site allowing pedestrian accessibility to local facilities, including across Leadon Way to the north via a staggered toucan crossing, providing direct walkability into Ledbury.
- 6.4 The proposal would not adversely affect the existing PROW.
- 6.5 Cyclists would be accommodated within the development and connect to the wider area cycle routes identified by the Council, including across Leadon Way to the north via a staggered toucan crossing, providing a direct cycle connection into Ledbury.
- 6.6 Discussions are being held with bus service providers to investigate the possibility of diverting bus routes to serve the site.
- 6.7 The Travel Plan submitted with the application would encourage journeys to be made by non-car means and ensure future residents are provided with information to maximise the opportunity to do so.
- 6.8 Satisfactory vehicle access can be achieved.
- 6.9 The internal road layout would be design to the principles of Manual for Streets, including a 20mph design speed.
- 6.10 The traffic impact from the proposals would not have a material impact on local junctions with capacity testing showing all junctions tested working within capacity.