Appendix G

Uplands Evaluation

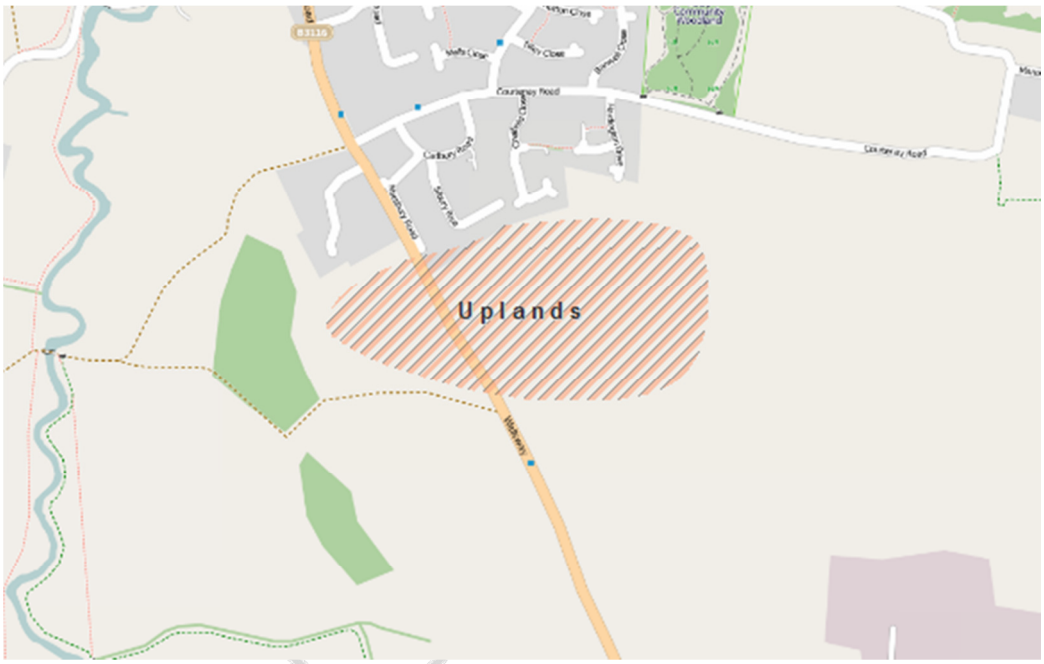
G1 Land at Uplands

G1.1 Overview

The development area is greenfield and currently in use as arable land located to the south-east of Keynsham town centre adjoining an existing residential area. There is open green belt countryside and farmland to the south and east. Uplands Farm lies south of this location, adjacent to the B3116.

To the west is the steep sided Chew Valley and an area of dense woodland. 400m to the south is an industrial estate which sits within open countryside.

Figure 20: Land at Uplands Location



G1.2 Census (2011) Mode Share Review

A review of the recently released journey to work information for the ward indicated the following mode share. The results have been ranked to compare the mode share with other B&NES wards and against each of the other locations evaluated.

Table 70: Census Mode Share Review, Keynsham East Ward[35]

Mode	Percentage of Journeys to Work	Ward rank within B&NES (of 37)	Ward rank amongst locations examined (of 8)
Walk	9%	24	7
Cycle	3%	20	4
Bus	7%	17	6
Train	4%	15	3
Car as driver	70%	22	7
Car as passenger	4%	The overall impact of these modes on trip generation from each location is negligible and ward to ward differences between these modes are measures in tenths of percentages. Rankings were therefore not calculated.	
Taxi	0%		
Motorcycle	2%		
Other Public Transport	0%		
Other	1%		
Total	100%	N/A	N/A
Of which sustainable[36] modes account for:	23%	21	6

The census data indicates that car use is prevalent in this location with the Keynsham east ward ranking seventh out of the eight wards examined in this study. Train use is higher than average within B&NES and within wards examined in this study but the development area is poorly located with regards to Keynsham train station. Bus use is just below average in comparison to other wards at 7%.

G1.3 Sustainable Transport

G1.3.1 Walking

This location is in an open rural setting and may be accessed via Wellsway. There is currently no footway provision in the vicinity of this location. A number of public rights of way run close to this location and provide access to residential areas and the wider countryside.

ACCESSION analysis indicates that walking to local amenities or employment areas is not possible within 20 minutes.

Should development come forward linkages to adjacent to the surrounding area should be improved via new pedestrian footways along Wellsway with potential for link to Hardington Drive from the east of this location.

[35] Table excludes "work from home" and "not in employment" as these modes do not impact on the modal choice for off-site trips.
[36] Sustainable modes are considered to be walk, cycle, bus, rail, other public transport.

G1.3.2 Cycling

Currently cycle trips into Keynsham from the area would be undertaken using the existing highway network. There is a cycle route along the A4174 Ring Road providing for journeys towards the Longwell Green/Barrs Court area of south Gloucestershire.

ACCESSION analysis indicates that it is possible to cycle into central Keynsham within 20 minutes using the highway network.

G1.3.3 Public Transport

This location lies around 2km from Keynsham railway which is considered outside of regular commuting distance on foot for the majority or residents. In public transport terms trips by bus are therefore more attractive than by rail, given the distance to Keynsham railway station.

A number of long distance bus services operate along the B3116 and Courtenay Road, including Services 178 (Bristol - Bath), 668 (Totterdown - Midsomer Norton), 665 (Keynsham - Saltford) and 683 (Keynsham - Wells), however only service 178 provides an AM peak hour service and operates with a frequency of 30-minutes or better.

Table 71: Bus Services within 400m of Uplands

Service No.	Route	Frequency (two way)	Bus Stop Location
178	Bath-Norton Radstock-Bristol	30 mins	B3116 Wellsway

This location is already served by the No. 178 bus service which offers a half hourly service directly to/from Bath and Bristol. ACCESSION analysis indicates that,

- It is possible to reach the centre of Keynsham in under 30 minutes; and,
- Those trips by rail and bus to Bath and Bristol requires a journey time of more than 30 minutes.

Other bus services operate along the B3116 Wellsway (services 665, 668, 683) but these run infrequently, and not during AM peak commuting periods. Therefore they have been excluded from the analysis as we are primarily interesting peak hour commuter trips.

Should this location come forward it may be possible to increase the frequency of the existing No 178 service from Wellsway/Courtenay Road based on a development comprising of 300 dwellings. Should this location come forward the existing bus stops on Wellsway and Courtenay Road should also be upgraded to provide covered waiting facilities for passengers while pedestrian links to these stops should be facilitated by the masterplan.

G1.4 Highway Impacts

G1.4.1 Access

The development area straddles the B3116 which provides access into Keynsham town centre. A distance of 1.8km north of this location the B3116 has a mini-roundabout junction with the B3116 Bath Hill towards Keynsham town centre and the B3116 Bath Road. The B3116 Bath Road provides access to the A4 via five-arm A4/B3116/Broadmead Lane/Bath Road roundabout. The performance of these two roundabout junctions will be critical to maintaining good highways access to this location.

Courtenay Road provides an alternative link to Saltford but this route is narrow and the A4 is likely to be the preferred route for commuters.

G1.4.2 Vehicular Trips

Trip generation for the Uplands has been calculated based on 300 residences, with 35% affordable housing, and a car modal 72% based on the Keynsham East ward.

Table 72: Peak Hour Trip Generation

Offsite Trips	AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound
Vehicles	36	117	119	68

G1.4.3 Destination and Assignment

Destinations for vehicular trips based on 2001 census journey to work distributions for car trips originating in the Keynsham East ward are shown in Table 73.

Table 73: Distribution of Car Trips from Keynsham East Ward

Destination	Percentage of Vehicular Trips
Bath	13%
Keynsham	19%
Midsomer Norton/Radstock/Westfield	1%
Other B&NES	6%
City of Bristol	34%
South Gloucestershire	16%
Somerset	2%
Wiltshire	1%
Other	8%
TOTAL	100%
Contained with B&NES	39%

Residents of the Keynsham East ward typically work in Bristol or Keynsham with South Gloucestershire and Bath other popular destinations. Assignment of vehicular trips has been undertaken and this identifies the following key impacts:

- Trips from this location would use the B3116 to access Keynsham town centre and the A4. In total 140-170 two-way trips are forecast along the B3116 in peak hours.
- Trips to Bristol and the vast majority of trips to South Gloucestershire would use the A4/A4174. In total 45-55 two-way trips use the A4 into Bristol with the same number using the A4174.
- In total 25-30 two-way trips are forecast along Bath Hill/High Street into central Keynsham.
- All Bath trips and half of trips to Wiltshire are forecast to use the A4 through Saltford resulting in 45-55 two-way trips per hour. This traffic has multiple routes into Bath from the A4 and disperses resulting in negligible impact on highways in the city.

Table 74: Additional Vehicular Trips Resulting from Development

Highway/Area	AM Peak Hour				PM Peak Hour			
	NB	SB	EB	WB	NB	SB	EB	WB
B3116 south of Bath Hill jnc.	106	33			62	109		
B3116 south of access	3	10			10	6		
Bath Hill/Keynsham High St			6	18			18	10
Bath Rd to Keynsham Bypass			26	85			87	50
Keynsham Bypass			20	66			68	38
A4 West of Saltford			16	5			10	16
A4 Bath Road to/from Bristol			10	33			34	20
A4174 Ring Road	33	10			19	34		
A4 west of Callington Rd			6	21			22	12

G1.4.4 Changes in Volume and Capacity

The potential impact of development in terms of percentage increase in 2029 traffic volumes has been calculated. This identifies the B3116 Wellsway and B3116 Bath Road as those highways experiencing the most significant impacts as a result of development. Impacts on highways outside of Keynsham are less significant due to the relatively low quantum of development.

Table 75: Increase in Vehicular Trips as Proportion of 2029 Background Traffic

Highway/Area	AM Peak Hour				PM Peak Hour			
	NB	SB	EB	WB	NB	SB	EB	WB
B3116 south of Bath Hill jnc.	15%	6%			10%	14%		
Bath Hill/Keynsham High St			0%	1%			1%	1%
Bath Rd to Keynsham Bypass			3%	10%			11%	5%
Keynsham Bypass			2%	4%			4%	3%

A4 West of Saltford			1%	0%			1%	2%
A4 Bath Rd to/from Bristol			1%	2%			2%	1%
A4174 Ring Road	3%	1%			1%	2%		
A4 west of Callington Rd			1%	2%			2%	1%

Highway link volume/capacity ratio has been calculated for key links in the study area. This identifies potential congestion and delays as a result of insufficient link capacity along Bath Hill/Keynsham High Street and the A4 West of Saltford. The capacity issues forecast on these highways is largely attributable to cumulative growth. The main highways impacted by development (The B3116 Wellsway and B3116 Bath Road) have sufficient link capacity to cater for development.

While the link capacity values do not suggest capacity issues on routes into Bristol in practice junctions will constrain highway capacity along these routes. The A4 into Bristol operates with congestion in 2012 and there is little scope for highway improvement.

Table 76: Volume/Capacity on Link, With-Development 2029

Highway/Area	**AM Peak Hour**				**PM Peak Hour**			
	NB	**SB**	**EB**	**WB**	**NB**	**SB**	**EB**	**WB**
B3116 south of Bath Hill jnc.	55%	42%			47%	61%		
Bath Hill/Keynsham High St			158%	147%			151%	126%
Bath Rd to Keynsham Bypass			62%	64%			58%	71%
Keynsham Bypass			32%	43%			48%	42%
A4 West of Saltford			102%	112%			119%	73%
A4 Bath Rd to/from Bristol			33%	68%			44%	51%
A4174 Ring Road	36%	50%			36%	57%		
A4 west of Callington Rd			52%	82%			69%	91%

G1.4.5 Potential for Mitigation

An initial evaluation of highway infrastructure and transport services has been undertaken to identify potential measures and constraints along key highways.

- Replacement of mini-roundabouts with signal controlled junctions on routes into Keynsham may be required in order to provide additional capacity or manage queues.
- Keynsham High Street is constrained with little scope for additional highways capacity. Demand management measures could be used to reduce demands on highway capacity.
- Junctions along the A4 into Bristol are already managed as part of the coordinated, demand responsive signal control system operated by BCC. There is little scope for highway improvements without purchase of third party land.
- Expansion of Brislington Park and Ride facility to intercept city centre bound traffic would reduce pressure on the A4 into Bristol provided sufficient drivers can be persuaded to adopt such a service.

G1.5 Conclusion

The Land at Uplands development area is poorly located to encourage travel by sustainable modes. Keynsham town centre is outside of comfortable walking distance and there are no local shops and services in the area. There are a number of bus services operating along the B3116 but only one service operates in the AM peak hour with frequency of 30 minutes or better.

Highway access to the development is via a single link – the B3116 Wellsway. Impacts from any development of this location would be largely confined to this link and the B3116 Bath Road. An examination of capacity suggests both roads have sufficient link capacity to accommodate development, although the B3116 Wellsway is bound by a number of residences which would be impacted by additional traffic.

Percentage impacts on the wider network minimal in terms of percentage increase in traffic, in part due to the low quantum of development. A few key links are forecast to be overcapacity in 2029 including Keynsham High Street/Bath Hill and the A4 through Saltford and into Bristol.

Overall the highways impact of development is likely to be manageable but there is relatively little scope for mitigation through highway improvements or modal shift. Development at this location is likely to result in car dependant behaviour in comparison with some of the other locations evaluated in this study.