Appendix I

Hicks Gate, Keynsham
Evaluation

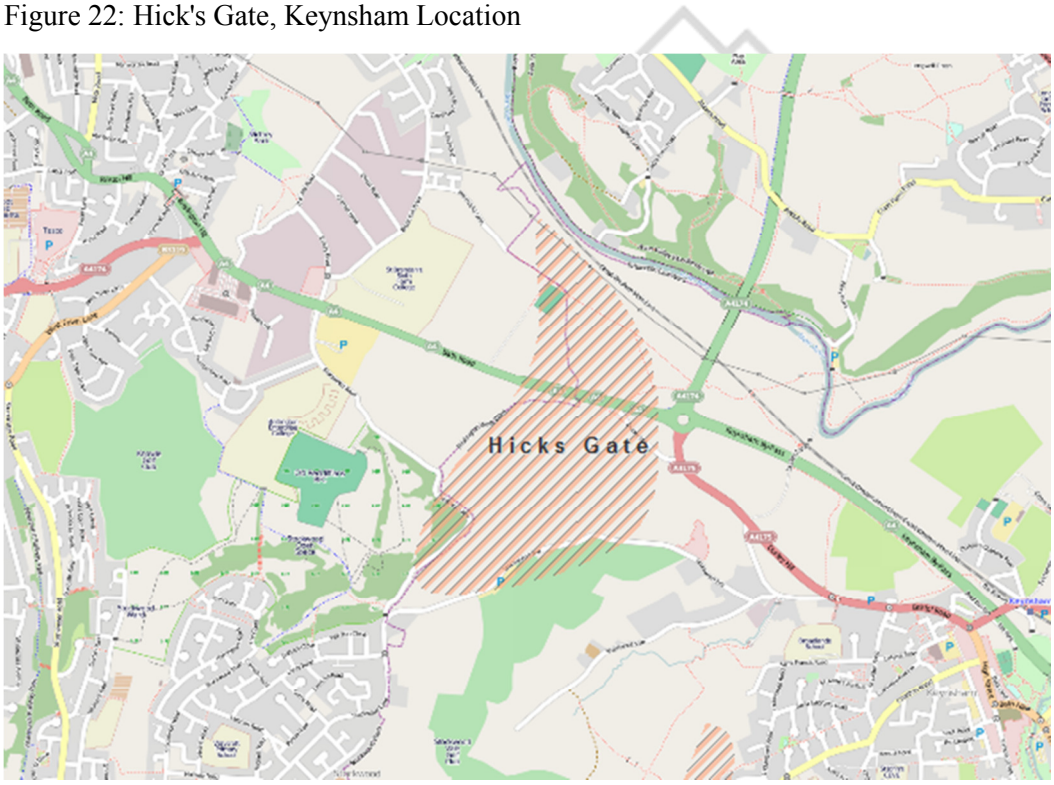
I1 Hicks Gate, Keynsham

I1.1 Overview

This location occupies an area of the Green Belt to the south-east of Bristol and is dissected by the A4 Bath Road. This location is bound to the north by the Great Western railway. Adjacent uses include St Brendan's Sixth Form College, a small local trading estate, recreational facilities of Brislington Football Club and Brislington Cricket Club and Brislington Park and ride facility.

Local cycle routes pass adjacent to this location and there are Public Right of Way within the northern area of this location which connect through to a wider network along the River Avon.

Figure 22: Hick's Gate, Keynsham Location



I1.2 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 84: Census Mode Share Review, Keynsham North Ward[39]

Mode	Percentage of Journeys to Work	Ward rank within B&NES (of 37)	Ward rank amongst locations examined (of 8)
Walk	13%	17	4
Cycle	3%	19	3
Bus	9%	11	4
Train	5%	12	2
Car as driver	63%	17	4
Car as passenger	5%	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	1%		
Other Public Transport	0%		
Other	1%		
Total	100%	N/A	N/A
Of which sustainable[40] modes account for:	30%	17	4

In the context of the eight wards examined in this study the Keynsham North Ward performs slightly better than average in all categories. The ward also performs averagely in an authority level in most categories, with bus and train use slightly higher than average.

I1.3 Sustainable Transport

I1.3.1 Walking

The development area is relatively isolated from existing employment centres and services with Brislington around 1.5km to the west. A footway is provided along both sides of the A4. No footway is provided along Stockwood Road, Stockwood Lane on the southern boundary of this location.

ACCESSION analysis indicates that it is possible to walk to Brislington in under 20 minutes.

I1.3.2 Cycling

This location has a connection to local cycle networks, including Regional Route 16 along the eastern boundary of this location. This route links north towards NCN4, east Bristol, and onwards towards Saltford and Bath to the south east.

ACCESSION analysis indicates that it is possible to cycle to Brislington, Keynsham and the edge of Bristol city centre in 20 minutes. Cycle connections to and from this location are considered to be good.

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

This location will benefit from forthcoming cycle linkages between Bristol, Keynsham and Bath and any development of this location should create high quality links to existing and proposed cycle routes.

I1.3.3 Public Transport

In public transport terms trips by bus may more attractive than by rail, given the distance of the development area from the nearest railway station.

There are a number of established routes operating along the A4 and existing laybys are provided. These services provide frequent services directly between Bristol, Bath and destinations in between. Services are listed below in Table 85.

Table 85: Bus Services Within 400m of Hicks Gate

Service No.	Route	Frequency (two-way)	Bus Stop Location
X39	Bath-Newbridge Road-Saltford-Brislington-Bristol	6 mins	A4 Bath Road
178	Bath-Norton Radstock-Bristol	30 mins	A4 Bath Road
338/9	Bath-Keynsham-Brislington-Bristol	15 mins	A4 Bath Road
349	Bristol centre-Brislington-Keynsham-Brislington-Bristol centre	30 mins	A4 Bath Road

ACCESSION analysis indicates that:

- It is possible to reach the centre of Bristol and Keynsham in under 30 minutes;
- The Brislington area can be reached in under 15 minutes;
- Those trips by rail to central Bath and Bristol requires a journey time of more than 30 minutes.

The existing bus provision service frequency should be sufficient to accommodate additional demand generated by this location, particularly if a new stop is provided for the X39 service. The orientation of the developmental area will make it difficult to bring buses into this location in an efficient manner and commercial extension of routes into the heart of this location is therefore considered unlikely, particularly for the express (X39) service. If this location is brought forward pedestrian linkages to bus stops along the A4 will be important and should be carefully considered within any masterplan.

I1.4 Highway Impacts

I1.4.1 Access

The developmental area spans the A4, which is a dual carriageway at this location. The section spanning the A4 is only 300m from the A4/A4174 signal controlled roundabout and the introduction of a new major access junction at this location will require careful consideration with regards to impacts on the roundabout.

Access to the northern development area is currently provided via Ironmould Lane which has a major-minor priority junction with the A4, which includes a ghost

island. Ironmould Lane is a narrow country lane and would require significant capacity improvement if this location comes forward.

Access to a small section of the southern developmental area is currently provided via a link to Durley Hill, which has a major-minor priority junction 100m south of the A4/A4774 roundabout. Stockwood Lane runs along the southern edge of the developmental area and this provides a single lane in each direction towards south Bristol. Stockwood Lane continues towards Keynsham but is down to a single lane section on approach to Old Bristol Road which is constrained by residential properties.

I1.4.2 Vehicular Trips

Trip generation has been calculated based on 800 dwellings, with 35% affordable housing, a primary school and 10,000m² of employment space. Car modal share of 64% has been assumed based on that of the Keynsham North ward.

Table 86: Peak Hour Trip Generation

Offsite Trips	AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound
Vehicles	154	290	295	212

I1.4.3 Destination and Assignment

Trip distribution has been based on 2001 census journey to work data for the distribution of car trips originating in the North Keynsham ward.

Table 87: Distribution of Car Trips from North Keynsham Ward

Destination	Percentage of Vehicular Trips
Bath	11%
Keynsham	26%
Midsomer Norton/Radstock/Westfield	1%
Other B&NES	3%
City of Bristol	33%
South Gloucestershire	17%
Somerset	1%
Wiltshire	1%
Other	7%
TOTAL	100%
Contained with B&NES	41%

The primary destinations for vehicular trips to work departing the North Keynsham ward are Bristol, Keynsham and South Gloucestershire. Of those trips destined into Bristol a total of 12% are to the adjacent Brislington ward, with 15% assigned to the A4174 Ring Road and 52% of trips assigned into the city centre along the A4. All trips to Bath have been assigned along the A4, with 71% of trips to Keynsham assigned along Durley Hill with the remaining trips travelling on the bypass to East Keynsham.

Assignment of vehicular trips has been undertaken and this identifies the following key impacts:

- A large number of vehicular trips are forecast to use Durley Hill resulting in an additional 80-90 two-way peak hour trips.
- A significant increase in demand along the A4 into Bristol, equivalent to 80-90 two-way trips per hour west of the Callington Road signals.
- An additional 120-150 two-way trips per hour on the A4174 ring road with these trips destined to North Bristol, South Gloucestershire and the M4.
- This location is bound to the south by Stockwood Lane. If secondary access was to be provided onto this link an estimated 30 to 40 two-way vehicular trips would use this route in the peak hour, primarily destined for Somerset and selected south Bristol wards. No trips have been forecast to Keynsham on this route due to the restricted highway east of this location. If access is not provided onto Stockwood Land these trips would use the A4/A37 corridor.
- The development will result in an additional 50 - 60 vehicular trips per hour through Saltford to/from Bath. These trips will disburse across highway approaches into Bath resulting in negligible highways impact on individual routes into the city.

Table 88: Additional Vehicular Trips Resulting from Development

Highway/Area	AM Peak Hour				PM Peak Hour			
	NB	SB	EB	WB	NB	SB	EB	WB
A4 east of Callington Rd			33	62			45	63
A4 west of Callington Rd			27	51			52	37
A4174 Callington Rd	6	11			12	8		
Durley Hill			53	54			38	54
A4 West of Saltford			32	18			24	33
A4 from A4174 to access			186	100			136	191
A4174 Ring Road	85	45			62	88		
Stockwood Lane	13	25			25	17		

I1.4.4 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 A4 Bath Road between this location and A4174, Durley Hill, the A4174 Ring Road and A4 into Bristol as those highways experiencing noticeable impacts as a result of development.

Table 89: 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
A4 east of Callington Rd			3%	5%			4%	4%
A4 west of Callington Rd			3%	4%			5%	3%
A4174 Callington Rd	1%	1%			1%	1%		
Durley Hill			6%	5%			3%	6%
A4 West of Saltford			2%	1%			2%	4%
A4 from A4174 to access			18%	5%			10%	12%
A4174 Ring Road	7%	3%			5%	4%		

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 the A4 west of Saltford, Bristol Road (Keynsham).

While the link capacity values do not suggest capacity issues on routes into Bristol and Keynsham 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 90: Volume/Capacity on Link, With-Development 2029

Highway/Area	AM Peak Hour				PM Peak Hour			
	NB	SB	EB	WB	NB	SB	EB	WB
A4 east of Callington Rd			57%	52%			57%	73%
A4 west of Callington Rd			54%	84%			70%	83%
A4174 Callington Road	45%	51%			53%	55%		
Durley Hill			58%	71%			79%	59%
A4 West of Saltford			103%	113%			120%	75%
A4 from A4174 to access			39%	70%			47%	56%
A4174 Ring Road	37%	51%			37%	59%		

I1.4.5 Potential for Mitigation

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

- There are a number of bus services along the A4 and scope for modal shift for residents to bus use into central Bristol, Bath and Keynsham.
- The A4/Callington Road junction already operates as part of the coordinated, demand responsive signal control system operated by BCC. There is no scope for highway improvements without purchase of third party land and demand management/sustainable travel measures are therefore required in the short-medium term.

- Hicks Gate is too far from Bristol Temple Meads or Keynsham station to make transfer to rail travel feasible, however improvements to rail services could help manage cumulative traffic growth arising from employment and residential development, including that identified in the Core Strategy, by encouraging rail travel between Bristol, Bath and Keynsham.
- 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 transfer.
- Keynsham High Street is constrained and remodelling of the centre would be required to create additional highways capacity. Demand management measures should be considered. Junctions on routes into Keynsham may need improvements to create additional highway capacity.
- An A37/A4 link road forming part of a continuation of the A4174 Bristol Ring Road should be a long term consideration to relieve the A4174 Callington Road. Access to the development could feasibly be provided from any such link road, reducing pressure on the A4.

I1.5 Conclusions

The Hicks Gate, Keynsham area is relatively isolated, being over a kilometre from the residential areas of Brislington. There are opportunities to walk to work in the Brislington ward and existing footway infrastructure is in place along the A4. NCN4 provides opportunities to cycle and there are a number of bus services along the A4. The developmental mix could support residential and employment land use encouraging more sustainable travel patterns and the quantum of development is sufficient for a school to be provided.

A significant proportion of vehicular trips are destined to Keynsham or Bristol resulting in increases in traffic along the A4 to/from Bristol, A4 to/from Bath and into Keynsham. There is little scope to introduce mitigation measures on the A4 through capacity improvements along the Brislington park and ride facility provides an opportunity to reduce corridor flows along the A4 into Bristol. However the development would contribute to localised congestion particularly on the A4 into Bristol and on routes into Keynsham.

Overall despite its relative isolation there are some opportunities to link into established transport networks. Even allowing for a proportion of modal shift development is likely to result in increased traffic volumes on routes where mitigation is difficult to achieve, particularly the A4 into Bristol.