Appendix B

Land adjoining Odd Down Evaluation

B1 Land adjoining Odd Down

B1.1 Overview

The development area is located on a plateau to the south of Bath at the southern edge of the settlement boundary at Odd Down, adjacent to the World Heritage site boundary. The area includes Sulis Manor, a language school in the centre of this location.

Adjacent to this location to the north is the Odd Down local centre, with the South Stoke Conservation Area to the south east, open pasture and woodland of the Cam Valley to the south, and Odd Down Park and Ride to the west of this location.

Figure 15: Land adjoining Odd Down

B1.2 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 36: Census Mode Share Review, Odd Down Ward, Bath[24]

Mode	Percentage of Journeys to Work	Ward rank within B&NES (of 37)	Ward rank amongst locations examined (of 8)
Walk	13%	16	3
Cycle	3%	22	5
Bus	14%	1	1
Train	3%	19	6
Car as driver	58%	16	3
Car as passenger	7%	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	1%		
Motorcycle	1%		
Other Public Transport	0%		
Other	0%		
Total	100%	N/A	N/A
Of which sustainable[25] modes account for:	33%	16	3

Census data indicates that currently 58% of residents in this location currently use the car (driver) as the preferred method to get to work, which is lower than many other locations examined in this study. A total of 14% of residents use the bus, the highest proportions in B&NES and considerably higher than any of the other wards examined in this study. Overall the location is considered to offer opportunities for people to travel sustainably in comparison with other greenfield locations.

B1.3 Sustainable Transport

B1.3.1 Walking

This location is located on the southern fringes of Bath, there are local amenities close to this location including schools, pubs and shops on Upper Bloomfield Way. There are therefore opportunities to walk to and from this location to these facilities. This location also adjoins the PROW network to the south of this location.

ACCESSION analysis indicates that these amenities can be reached on foot in less than 20 minutes. Connectivity into the main routes should be carefully considered should this location come forward.

B1.3.2 Cycling

This location is somewhat detached from designated cycle routes, the existing highway provides direct connections into central Bath.

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

ACCESSION analysis indicates that central Bath can be reached in less than 20 minutes.

The development area is located south of Odd Down and cyclists travelling from Bath city centre would need to climb a modest gradient along Wellsway/Wells Road for the majority of their journey. While modern, geared bicycles make cycling up hills easier than in the past this could deter some commuters from cycling.

B1.3.3 Public Transport

There are a significant number of bus services operating within the vicinity of this location as listed below:

Table 37: Bus Services Operating within 400m, Odd Down

Service No.	Route	Frequency (two-way)	Bus Stop Location
13	Foxhill-St Martins-Bath—Batheaston-Elmhurst-Bathford	10 mins	Milford Road
14	Weston-Bath-Bear Flat-Wansdyke Est-Odd down	5 mins	Fullers Way
20A	Bath bus station-Weston-RUH-Twerton-Fox Hill University-Widcombe-Bath Bus Station	15 mins	Bradford Road
41	Odd down park & Ride-Bath St James Parade-Odd down Park & Ride	12 mins	Combe Hay Lane
42	Odd down Park & Ride – Royal United Hospital	30 mins	Wellsway
173	Wells-Norton Radstock-Bath	30 mins	Wellsway
178	Bath-Norton Radstock-Bristol	30 mins	Wellsway
179	Bath Bus Station-Timsbury-Farnborough-Paulton-Welton-Midsomer Norton	30 mins	Wellsway
184	Bath-Norton Radstock-Frome	30 mins	Wellsway
267	Frome-Bath	30 mins	Milford Road

Within 400m of this location there is access to numerous frequent bus services serving Bath, Keynsham and Bristol. Local residents are known to walk to the park and ride facility to use buses departing from this facility. The good service provision reflects the relatively high mode share for bus use in this ward.

ACCESSION analysis for this location based on existing service provision indicates:

- It is possible to reach the Bath city centre in 30 minutes by bus.
- Regular rail travel to/from this location is unlikely given the distance between this location and Bath Spa station.

No bus routes pass directly through this location, however a number of buses travel past this location, and serve the main residential area of Odd Down. Diversion of existing services into this location could be considered should this location come forward.

B1.4 Highway Impacts

B1.4.1 Access

The developmental area offers the potential for multiple points of access from a variety of locations including:

- The west from Combe Hay Lane via an improved Sulis Manor Road/Combe Hay Lane junction with trips using the Odd Down roundabout to access the A367;
- From the north from Sulis Manor Road and Burnt House Road via Odd Down roundabout; and
- From the east from Southstoke Lane via an improved junction with Midford Road.

Vehicular trips from the ward primarily travel to other locations in Bath (60%) with the primary routes likely to be along Wellsway/Wells Road to central Bath and Bradford Road towards south-east Bath. Wellsway provides two lanes in each direction for much of its length, although bus stops and on-street parking is provided in the nearside lane in both directions affecting the effective highway width. At the northern extent, Wells Road has a number of priority junctions with residential streets prior to the A36/Broad Quay gyratory which is a major priority controlled junction.

Bradford Road provides a single lane in each direction and is primarily residential in character with little scope for capacity improvement. Junctions are priority controlled and pedestrian priority crossings (zebra) are installed. At the western extent Bradford road has double-mini roundabout at the Frome Road/Midford Road junction. All movement junctions are provided onto the Wellsway via a roundabout (From Road/Wellsway) and priority junction (Midford Road/Wellsway).

Trips to Bristol, Keynsham and South Gloucestershire could travel along Wellsway to connect to the A36 or travel north-west along Whiteway Road/Rush Hill/Pennyquick to the A39/A34 junction west of the city. Whiteway Road has priority junctions to local distributors along its length and is increasingly rural to the west.

B1.4.2 Vehicular Trips

Vehicular trip generation has been calculated based on 300 dwellings, of which 35% are affordable homes and vehicular modal share of 61%, calculated from the Odd Down ward.

Table 38: Peak Hour Trip Generation

Offsite Trips	**AM Peak Hour**		**PM Peak Hour**	
	Inbound	**Outbound**	**Inbound**	**Outbound**
Vehicles	30	99	101	58

B1.4.3 Destination and Assignment

Destinations for vehicular trips from this location based on 2001 census journey to work distribution for car trips originating in the Odd Down ward are:

Table 39: Distribution of Car Trips from Odd Down Ward

Destination	Percentage of Vehicular Trips
Bath	60%
Keynsham	1%
Midsomer Norton/Radstock/Westfield	3%
Other B&NES	8%
City of Bristol	6%
South Gloucestershire	6%
Somerset	2%
Wiltshire	7%
Other	7%
TOTAL	100%
Contained with B&NES	72%

Residents of the Odd Down ward predominantly work in Bath (60% of car trips) with remaining car trips widely distributed across destinations in the area. Based on census data, 42% of trip to Bath have been routed via Wellsway/Wells Road into central Bath with 25% routed along Bradford Road. The remaining trips are to local wards (Odd Down, Lyncombe) or use Rush Hill.

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

- In total Wells Road is forecast to experience an additional 50-60 two-way trips in peak hours, Bradford Road 25 trips and the western extent of Rush Hill (Pennyquick) 30-40 trips.
- At the north of Wells Road 20-25 trips are forecast into the city using Broad Quay with 20 trips forecast to use the A36 to access eastern Bath/Wiltshire.
- The number of additional trips on the A367 Roman Road is negligible.
- There is negligible impact on highways in Bristol and Keynsham.

Table 40: 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 Saltford			5	15			16	9
Pennyquick			7	23			24	14
A367 Wells Road	37	11			22	37		
A3062 Bradford Road			17	5			10	17
Broad Quay	7	23			14	23		
A367 Roman Road	2	5			5	3		
A4 Bath Road to/from Bristol			2	5			6	3
A4174 Ring Road	6	2			3	6		

B1.4.4 Changes in Volume and Capacity

The potential impact of development has been calculated as the percentage increase in 2029 traffic volumes. This identifies Wells Road, Bradford Road and Rush Hill/Pennyquick as the only highways experiencing any impact as a result of development and the percentage increases on these links is within day-to-day variation.

Table 41: 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 Saltford			0%	1%			1%	1%
Pennyquick			1%	3%			2%	2%
A367 Wells Road	4%	2%			3%	4%		
A3062 Bradford Road			2%	1%			1%	2%
A367 Roman Road	0%	1%			1%	0%		
A4 Bath Road to/from Bristol			0%	0%			0%	0%
A4174 Ring Road	0%	0%			0%	0%		

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 through Saltford in the morning peak hour. In the evening peak hour Pennyquick/Rush Hill and the A4 through Saltford are forecast to operate above 90% of link capacity. Of these two links the impact of development at Odd Down is only significant along Pennyquick.

The impact of development is largely confided to local highways (Wellsway/Wells Road, Bradford Road, Frome Road and Rush Hill/Whiteway Road/Pennyquick).

Table 42: 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 Saltford			109%	77%			85%	91%
Pennyquick			68%	64%			94%	62%
A367 Wells Road	61%	48%			52%	62%		
A3062 Bradford Road			78%	56%			66%	71%
A367 Roman Road	72%	40%			57%	81%		
A4 Bath Road to/from Bristol			33%	67%			43%	51%
A4174 Ring Road	35%	49%			36%	57%		

B1.4.5 Potential for Mitigation

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

- This location is well located to take advantage of bus services in the local area which are frequent, provide for a variety of destinations and benefit from sections of priority along key routes. The majority of journeys to work by car are also destined for the city providing scope for transfer to bus, walk and cycle.
- The Odd Down Park and Ride facility reduces peak hour demands into the city centre and utilisation of this location may increase in response to congestion along Wells Road and Bradford Rd. There is sufficient highway width to potentially introduce additional sections of bus lane along the Wellsway if desirable to operators. The northern section of Wells Road is constrained by residential development with links to Lower Bristol Road constrained by the rail line and topography.
- The development area could facilitate bus diversion from existing routes and could potentially include a bus priority/lightly trafficked route improving the reliability and journey time of park and ride services. Such a route could potentially connect the Odd Down park and ride facility to Midford Road/Bradford Road.
- Alternatively a route through the development area could be designed to accommodate demand for movement between the A367 Roman Road and A3062 providing relief to the southern section of Wellsway which is residential in character.
- Major junctions in the local area tend to be roundabouts and modifications should be considered to provide additional highway capacity, demand management and public transport priority.
- There is little scope for widening of Pennyquick/Rush Hill to provide additional link capacity within the existing highway boundary with Haycombe Cemetery a constraint to the west. Pennyquick/Rush Hill is the major route on all junctions to the Old Fosse Road roundabout which reduces the possibility of additional traffic causing queues and delays along this link.

B1.5 Conclusions

The Odd Down development area is well located to take advantage of bus services operated along the A367 and A3062 and with the majority of car trips destined to Bath it may be possible to encourage modal shift to more sustainable modes. The area also demonstrates sustainable travel behaviour indicating that infrastructure and services are of sufficient quality to attract car drivers.

Potential highway impacts arising from development of this location are likely to be confined to Wells Road/Wellsway, Rush Hill/Whiteway Road/Pennyquick and Bradford Road. The Wells Road/Lower Bristol Road gyratory is likely to be a key capacity constraint along the primary route into the city centre. Junctions in the area have scope for improvement and the developmental area could facilitate improved connections for buses and/or private vehicles.

Overall the location has established sustainable travel behaviour, in particular a comprehensive network of bus services adjacent to this location. Highways impact primarily occurs along routes with potential for mitigation through capacity improvement or management measures such as park and ride.