

**WOKINGHAM BOROUGH COUNCIL  
LOCAL DEVELOPMENT FRAMEWORK  
CORE STRATEGY EXAMINATION**

**Session 12: Alternative housing sites  
(Barkham Square Park)**

**Evidence of Barkham Parish Council (BPC) and Barkham Village Residents' Association (BVRA).**

The purpose of this document is to comment on the issues identified by the Inspector in respect of alternative housing sites in relation to Barkham Square Park (BSP).

Barkham Parish Council represents a community of over 3,500 people (2001 census). The main settlement areas in the parish are Barkham Hill to the north-east and the larger part of the Arborfield Garrison site to the south-west. The number of MoD houses that are within Barkham is approximately 290.

Barkham Village Residents' Association was formed in 1987. Membership comprises 608 households in Barkham out of a total of around 715 households excluding the Garrison.

*Cross-references in red are to the Barkham Parish Council (no. 1648) Memorandum dated 15 December 2008.*

**1. Sustainability**

The BSP proposals compromise the ability of the SDL to maximise sustainability benefits for the below reasons.

**(a) 'Greenfield' development**

The second of the Government's objectives for sustainable development in rural areas in PPS7 discourages new development on 'greenfield' land while Paragraph 1(v) of PPS7 (Key Principles) says that priority should be given to the re-use of previously-developed sites. However, the BSP proposal involves shifting the SDL northwards by building 850 houses on 'greenfield' land currently used exclusively for agriculture and creating a SANGS with the southern part on 'brownfield' land (on the site of the former Bailleul Barracks complex).

The BSP proposal is also at variance with paragraph 27(viii) of PPS1, which encourages the more efficient use of land by actively seeking to bring vacant and underused previously developed land and buildings back into beneficial use.

Page 5, para 3.30

### **(b) Carbon emissions**

One of the main arguments made for the BSP proposal is that the revised configuration of the SDL will reduce travel and therefore be beneficial to the environment. On close examination, the evidence used to justify this proposition is very questionable:

- Distances are based on straight line, not actual, road distances.
- No account is taken of the various congestion hotspots located on key routes, notably Barkham Road level crossing and Winnersh crossroads (A329/B3030).
- Possible road improvements also are not taken into account, in particular an Arborfield Cross bypass and a link road to M4 Junction 11.
- Distribution of traffic is based on the profile for the borough as a whole, which does not take account of the SDL's peripheral location.

Based on the BSP figures, the saving is shown as 4,019,116 kgs over 20 years which represents 5% saving compared with the Core Strategy version.

Recalculating carbon emissions based on more realistic distances and traffic distribution shows that there would be no saving at all. In simple terms, if the travel distances between the Core Strategy and BSP versions of the SDL are compared, there would be no saving on journeys to Reading and along the M4 corridor, including Maidenhead, Windsor, Slough and west London. There would be a small saving on journeys to Wokingham town and Winnersh for the BSP version, but this would be offset by longer distances to Bracknell, North Hampshire and the M3 corridor. It is estimated that traffic to the last two groups would be roughly in balance.

Using the BSP figures, it can be shown that the location of the SDL in this area amounts to an increase of carbon emissions of 81,219,972 kgs over the 20 year period. This does not rest easily with recent Government commitments to reduce carbon emissions by 80% by 2050.

If the intended aim is to minimise carbon emissions, then the correct location of the SDL would likely be as close as possible to Reading and the M4 or adjacent to Wokingham Town – this would argue for increasing the size the other three SDLs and not developing Arborfield SDL at all.

Pages 33-36, paras 4.44-4.48

### **(c) Direction of growth**

The BSP proposals would direct new development towards Wokingham, with the consequent risk of coalescence of the SDL with Wokingham.

On the basis of 3,500 new dwellings (as proposed by WBC and BSP) and 900 existing houses on the periphery of the site, applying a multiplier of 2.55 persons per household (average Wokingham household size in 2001), the size of the new settlement would be some 11,220 people.

As Wokingham is and Arborfield Garrison, as demonstrated above, will both be settlements of over 10,000 people, there needs to be a strategic gap as required by Policy CC10b of the draft South East Plan between the western boundary of Wokingham and the SDL to prevent coalescence of settlements. The distance between Wokingham and (i) the WBC SDL is 2,900 metres (1.8 miles) and (ii) the BSP SDL is 2,300 metres (1.4 miles) on the basis that the western boundary of Wokingham starts at Folly Court (per paragraph 9.1.10 of the report by Chris Blandford Associates dated June 2006). However, apart from a small green gap, there is already almost continuous ribbon development along both sides of Barkham Road from Folly Court to the beginning of the Barkham Hill settlement area (at the junction of Sandy Lane with Barkham Road).

Page 17, para 3.137

## **2. Infrastructure requirements**

### **(a) BSP component an "island" housing site**

The development of Arborfield Garrison SDL needs to be infrastructure led to address the lack of sustainability highlighted by the Sustainability Appraisal. The proposed BSP residential area lacks even basic infrastructure as it is presently grassland.

Under the BSP proposals, 850 dwellings would be built on Langley Common on the north side of the Hazebrouck Barracks complex (which covers 20% of the site of the SDL). This is not due to be vacated until 2014/15 (latest estimate) and will not be developed until the last phase. The BSP residential area would therefore be out on a limb. It would be an "island" site detached from the rest of the SDL, being on the "wrong" side of the Hazebrouck complex. There would therefore be difficulties in providing infrastructure for such an isolated area, especially if the first phase of development is concentrated at the southern end of the SDL.

The reconfiguration of the SDL to include BSP would involve more than boundary changes and would result in changed infrastructure requirements, including (per BSP) a primary school on Langley Common north of Hazebrouck Barracks, which have not been planned in detail or costed.

### **(b) BSP SANGS improvement**

In his report on the TBH SPA, the Assessor repeatedly makes the point that SANGS need to be prepared/improved "before the new development that it is intended to serve is occupied" (e.g. see paragraphs 4.6.28 and 4.13.4).

It is questionable whether the proposed BSP SANGS would be of sufficient quality and character without significant improvement. The northern part of the BSP SANGS currently comprises improved grassland, arable and amenity grass land. The southern part of the BSP SANGS, apart from some sports pitches, is 'brownfield' land, and includes the site of the former Bailleul Barracks complex, the foundations of which remain. This part of the BSP SANGS is dissected by Biggs Lane, a busy road carrying traffic from the Garrison towards Finchampstead.

Pages 25/26, para 4.20

### **3. Viability/deliverability**

BSP say that the proposed BSP component of the SDL can be brought forward for development early in the life of the Core Strategy plan period.

As the 850 new dwellings proposed to be built at BSP would be separated from the rest of the SDL by the Hazebrouck Barracks site, which will not be released until 2014/15 at the earliest, and the Arborfield Garrison Consortium intend the first phase of development to be concentrated at the southern end of the SDL, any attempt to develop the BSP component at an early phase, involving as it would the provision of necessary infrastructure (e.g. improvements to the so-called B3349 corridor and the BSP SANGS) would be disproportionately expensive and place a considerable financial burden on the BSP developers.

The changed economic environment may also impact on the viability of the early delivery periods sought by BSP.

Page 8, para 3.49

## **4. Transport effects**

### **(a) B3349 Barkham Road "key corridor"/"central gateway"**

The focus in the BSP proposals on using the B3349 Barkham Road as a "key corridor" is a fundamental flaw and renders the BSP proposal unsound.

The B3349 Barkham Road is not suitable as a "key corridor" into Wokingham. It is a residential road with little possibility of widening at critical points. Even with improvements to public transport, direct access to the SDL from a "central gateway" on the B3349 Barkham Road will cause significantly increased traffic to head towards existing critical traffic hotspots (e.g. Wokingham level crossing/town centre and A329/B3030 Winnersh crossroads).

The BSP proposals also overlook the fact that along a ½ mile stretch of the B3349 Barkham Road between Coppid Hill and The Bull, the main east-west and north-south routes through Barkham are combined.

Increased congestion (e.g. Wokingham level crossing, which is closed on average for 24 minutes each hour off-peak) will result in longer journey times, especially at peak periods, and greater CO<sub>2</sub> emissions. Also the BSP proposals take no account of significant extra congestion at Wokingham level crossing caused by the planned Airtrack high speed rail link to Heathrow (two trains each way per hour) and other possible frequency increases.

BSP are dismissive of using the B3430 (Nine Mile Ride), B3016 and A321 (Finchampstead Road) route into Wokingham as it is longer, arguing that it is important to improve B3349 corridor, which "only has one railway crossing".

Most traffic for Bracknell should be routed along the B3430 Nine Mile Ride as proposed by WBC, not along Barkham Road, across Wokingham level crossing and through Wokingham town centre as advocated by the BSP proposals, which is simply a recipe for even more congestion.

Pages 33-36, paras 4.44-4.48

Page 38, para 4.49(g)

The calculations used to justify the BSP proposal are doubtful as they are based on straight line distances and do not take account of traffic congestion hotspots such as Wokingham level crossing and Winnersh cross roads. (See comments under Section 1 (b) above and Appendices B and C).

Page 3, para 3.21

The BSP calculations also seem to imply that the B3349 School Road will be treated as a main artery, in spite of the fact that it has been provided with extensive traffic calming adjacent to the Coombes Primary School, which has some 550 infant and junior pupils.

### **(b) Journey to work patterns**

While we have no issue with increased employment opportunities, in reality only a minority of the employees of businesses establishing work places in the SDL would live within the SDL. Hence the 4,000 new jobs proposed by BSP would serve to increase (rather than reduce) transportation requirements and CO<sub>2</sub> emissions.

On the assumption that (say) 10% of the SDL's residents would also work in the SDL, in approximate numbers there would be an inflow of 3,000 round trip journeys balancing an outward saving of 1,000 – a net disbenefit of 2,000. Note that the majority of these journeys would be at peak times when the road network is at its most congested.

#### Page 4, para 3.25

Current social and employment patterns are not conducive to people living within the immediate vicinity of their employment.

- The predominance of dual income households means that it is commonly the case that both wage earners are employed in different places. As a norm at least one wage earner will have to travel.
- Fluidity of employment structures also results in wage earners frequently having to change their place of work, whether or not within the same company. The consequence is an explosion of long distance commuting, as one member of a household may not wish to disrupt the commuting structure, or indeed the education, of other family members.
- Fluid social structures also give rise to long distance commuting: where families breakdown and are recreated with different partners, it is inevitable that many sub-optimal commuting patterns will result.

#### Pages 8/9, para 3.58

#### **(c) Public Transport**

Appendix A demonstrates the likely spread of work places for residents of the SDL. These figures are derived from the 2001 Census. Notably the two largest destinations, Wokingham Town and Reading Central, only attract 14% and 8% respectively. This demonstrates that the complexity of journey requirements will make it difficult to achieve a significant modal switch to public transport.

The BSP proposal claims to improve public transport but does not demonstrate how this might be achieved. Arguably the BSP proposal would worsen public transport: this is because a scattered distribution of housing arises as opposed to a rather more linear arrangement, making it difficult to serve the whole settlement with a single high frequency bus service. This is even more the case so long as the BSP development remains isolated from the remainder of the SDL due to the continued occupation of the Hazebrouck site by the MoD.

#### Page 36, para 4.48

## **5. Capacity/trajectory**

### **(a) Housing density**

As the site of the SDL is surrounded on all sides by open countryside, the gross density of 30-35 dph proposed by WBC is more appropriate to the landscape setting of the SDL and the design guidelines in the Barkham Village Design Statement. A higher gross density of 35-40 dph, as proposed by BSP, would be likely to result in inadequate landscaping and the inclusion of 3-storey buildings, with the consequence that the development would be highly visible from the surrounding area, including Barkham Street (Area of Special Character) and the BSP SANGS itself.

Page 7, para 3.46

Page 18, para 3.148

### **(b) Hazebrouck Barracks**

As it is the intention of the Arborfield Garrison Consortium to develop the SDL from the south northwards, it would be impractical to develop the proposed BSP component before the Hazebrouck Barracks complex has been released by the MoD and is ready for development (including the provision of necessary infrastructure).

### **(c) SPA mitigation**

Per paragraph 9.1 of the Assessor's Report on the TBH SPA, the Assessor was satisfied that the level of housing currently allocated in the draft South East Plan for the area around the Thames Basin Heaths should not have a significant adverse effect on the SPA. However, in order to give sufficient time for SANGS to be brought forward he says it may be necessary to phase new housing development so that the larger proportion comes forward in the second half of the plan period (i.e. after 2016).

Page 18, para 3.161 (beginning)

## **6. Strategic gaps**

### **(a) Open green space**

The area between Langley Common Road/Barkham Road and Finchampstead is visually important, being one of the few remaining areas of unspoilt open farmland and countryside in the locality, and to date has been entirely free of modern residential housing developments. Any development of Barkham Square Park would erode this compact unspoilt area and seriously impair the splendid panoramic views from Coppid Hill and Edney's Hill across the open wooded farmland towards the east and south, thereby irreparably harming the visual separation of Barkham Hill and Arborfield Garrison. See photographs nos. 3 and 4 on page 58 of the BPC Memorandum.

Pages 39/40, paras 5.1-5.5

### **(b) WBC policy**

WBC's policy of concentrating future development in a select number of Strategic Development Locations constitutes the promotion of a significant amount of new development in a proactive manner in conformity with the Secretary of State's requirements.

It is a logical consequence of concentrating future development in a select number of Strategic Development Locations, which unfortunately necessitates building on some 'greenfield' land, that WBC wishes to protect the surrounding landscape from further encroachments.

Page 40, para 5.5

### **(c) SEERA**

The consultation period in respect of the Secretary of State's proposed changes to the South East Plan, which include the removal of strategic gaps, closed on 24 October 2008 and the outcome has not yet been published. The South East England Regional Assembly (amongst others) has objected to the proposed removal of the strategic gaps policy.

Page 20, para 3.163

## **7. SPA mitigation**

There is a comprehensive description of Bramshill SSSI (a 671 ha. conifer plantation) in Annex A to the BPC Memorandum, pages 55/56.

### **(a) BSP SANGS/country park**

It is questionable whether the proposed BSP SANGS would be of sufficient quality and character. The northern part of the BSP SANGS currently comprises open grassland. The southern part of the BSP SANGS, apart from some sports pitches, is 'brownfield' land, including the site of the former Bailleul Barracks complex, and is dissected by Biggs Lane, which is a busy road.

The well established wooded agricultural landscape of the WBC SANGS surrounding West Court has more character and is probably more attractive recreationally than the open grassland of Barkham Square Park and the 'brownfield' southern part of the BSP SANGS.

The proposal to create a 'country park' appears to be designed to mask the inadequacies of the BSP SANGS. The notion of a 'country park' is, however, incompatible with the eastern boundary of the SDL adjoining the BSP SANGS. High density housing, probably including 3-storey buildings, would give a hard urban edge to the 'country park' and detract from a sense of "wildness and space", which the TBH Assessor regards as important (paragraph 4.6.3). In any event, there is no lack of country parks in the locality.

Page 22, para 4.15

Page 24, para 4.17

Pages 25/26, para 4.20

### **(b) Evidence base**

The assertion that the WBC SANGS is too close to the Bramshill Plantation SSSI is weak as it is not contiguous and no evidence is adduced in support. Nor is any evidence cited for the proposition that the location of the WBC SANGS will "in all probability" attract people to the SPA rather than direct them away.

Page 27, para 4.23(c)

As the BSP SDL and the WBC SDL are both within the "zone of influence", the BSP SANGS is no less a mitigation measure in relation to the SPA than the WBC SANGS.

The TBH Assessor makes no specific comments in his report about the proximity of SANGS to the SPA within the "zone of influence", suggesting that this is not an issue from his perspective.

The Assessor (paragraphs 4.10.1 and 4.10.12) considers that access management has an important role to play as part of an effective avoidance and mitigation strategy. New Policy NRM6 proposed by the Secretary of State provides that

mitigation measures may include access management and habitat improvement. Access management is not, however, discussed in the BSP proposition.

Page 23, para 4.16

Page 29, para 4.31(3)

### **(c) Accessibility of Bramshill SSSI**

As demonstrated by Annex A to the BPC Memorandum (page 55), while the linear distance from the south of the residential area of the WBC SDL to the North East corner of the Bramshill SSSI is about 1 mile, the accessibility of Bramshill SSSI by car from the SDL to the north is restricted by:

- The course of the Blackwater River parallel with the northern boundary of the SSSI and the lack of road crossings other than fords;
- The lack of on-road parking along the two narrow lanes leading to the fords;
- The indirect road access from the SDL to the North East and South East corners of the plantation (about 3½ miles (5.6 km.) from the centre of the SDL in each case);
- The lack of parking provision at the SSSI, including the relatively open western boundary along Ford Lane, other than the unsurfaced car park for about 20 cars at the South East corner of the plantation (also serving Heath Warren Wood SSSI, an almost adjacent part of the TBH SPA further south).

The average road distance for SDL residents to the SPA would not be materially different under either the WBC or the BSP proposals.

A single footpath traverses the plantation from North East to West in a southerly loop. There is also a footpath along the eastern boundary of the SSSI. Both rights of way follow the route of very broad tracks or greenways. None of Bramshill Plantation is common land nor has any part of the SSSI been designated as open country under the Countryside and Rights of Way Act 2000.

The restrictive accessibility of Bramshill SSSI by private car (e.g. lack of parking facilities) if access management continues as at present, the distance by road from the SDL, the limited penetration of the plantation by public footpaths, coupled with the inhospitable nature of the interior of the conifer plantation, are factors offsetting the potential impact of the SDL on the SPA.

Pages 21-24, paras 4.10-4.16

### **(d) Natural England**

GVA Grimley have received an email from Natural England supporting the size and location of the WBC SANGS around West Court. The email is Appendix G to Grimley's statement for Session 3 on the WBC website.

## **8. Constraints/other factors**

### **(a) Flood risk**

Barkham Square Park includes the Barkham Brook watercourse which flooded as recently as 20 July 2007, when the brook overflowed by the single lane bridge carrying the B3349 Barkham Road just north of the northern boundary of Barkham Square Park, flooding the road and adjacent fields. (See photographs 1 and 2 on page 57 of the BPC memorandum).

The run-off from a high density residential development on Langley Common adjacent to Barkham Brook as proposed by BSP risks exacerbating the flooding problem, not only around the proposed northern extension of the SDL but also further down stream, especially around Mill Lane and the Loddon Bridge roundabout (A329).

There seems to be no comment in the BSP Ecology Report (Appendix 4) about the floodplain of Barkham Brook.

Page 16, para 3.130

### **(b) Footpath network**

The BSP Evidence represents that the BSP SANGS would connect with a good local footpath network, which is portrayed in Plan 12.

Plan 12 is deceptive, however, as in showing connecting routes it fails to distinguish between public highways and footpaths/bridleways. In particular, Barkham Street/Barkham Ride is a public highway, not a footpath as suggested by Plan 12. For some reason, Commonfield Lane, a public highway along the eastern boundary of Barkham Square Park which connects Barkham Street/Barkham Ride with Biggs Lane and Park Lane on the south eastern boundary of the Garrison, is omitted from Plan 12.

If roads are removed from Plan 12, it becomes apparent that the footpath network in Barkham south of Barkham Road/Langley Common Road is, in fact, quite limited and not well connected.

Pages 46/47, para 5.31

### **(c) Historic environment**

The proposed northern extension of the SDL would involve building 850 high density dwellings within 400 metres of Barkham Street, which is designated as an Area of Special Character. Many of the older buildings in Barkham are to be found here, including six listed buildings: The Bull, Barkham Manor, and Sparks Farm at the northern end of Barkham Street and the Parish Church, Church Cottages (moated) and Barkham Square House at the southern end.

The BSP proposal completely ignores the existence of the Area of Special Character. The close proximity of the BSP SDL and the topography of the area would affect the setting of these buildings of historic and architectural interest. The BSP proposals, nevertheless, are silent about preserving and enhancing their historic environment.

Page 43, para 5.17

**(d) Archæology**

The discovery of a 'burnt mound' in the middle of Barkham Square Park (which is not mentioned in the BSP Evidence) signifies that there may be a Bronze Age settlement or other evidence of occupation in the area and an archæological field evaluation would need to be undertaken in accordance with paragraphs 21 and 22 of PPG16.

Page 15, paras 3.123-3.126

## Appendix A

Analysis of journeys to work from Entec document 1313.21

### Destinations for journeys to work from Arborfield and Barkham wards

---

<b>Destination</b>	<b>%</b>
<b>Wokingham Borough</b>	<b>31%</b>
Wokingham Town	14%
Earley and Woodley	5%
Winnersh	4%
Finchampstead	2%
Other Wokingham	7%
<b>Reading Borough</b>	<b>15%</b>
Reading Central	8%
Reading South	3%
Other Reading	5%
<b>Bracknell Forest Borough</b>	<b>14%</b>
Western Industrial Area	6%
Bracknell Central	4%
Crowthorne	2%
Other Bracknell Forest	2%
<b>London</b>	<b>9%</b>
Inner London	5%
Outer London	4%
<b>Windsor &amp; Maidenhead</b>	<b>5%</b>
<b>West Bekshire</b>	<b>4%</b>
<b>Other</b>	<b>20%</b>

---

Source: 2001 Census data as shown in Entec document 1313.21

## Appendix B

### Carbon Savings - calculations using BSP figures

Assumes straight line distances and traffic distribution of WBC as a whole

Destination	% of Trips	Distance from SDL N	Distance from SDL S	Difference (km)*	Annual Saving per dwelling (km)*	Annual CO2 saving per dwg (kg)*	Saving over 20 years for 835 dwgs	CO2 saving over 20 years for 835 dwgs	Annual trips per dwelling	CO2 emissions in base case (kg)* 3500 dwgs, 20 yrs	% saving
<b>Table A2.1 Food Shopping (based on New Homes Survey 2004)</b>											
Wokingham	28%	4.80	6.87	-4.14	-42.2	-6.67	-704,654	-111,335	10.19	1,548,820	-7%
Lower Earley	19%	7.60	9.85	-4.50	-31.1	-4.92	-519,737	-82,118	6.92	1,506,871	-5%
Winnersh	15%	5.60	8.10	-5.00	-27.3	-4.31	-455,910	-72,034	5.46	978,279	-7%
Twyford	12%	12.79	14.33	-3.08	-13.5	-2.13	-224,672	-35,498	4.37	1,384,564	-3%
Reading	8%	10.85	13.35	-5.00	-14.6	-2.30	-243,152	-38,418	2.91	859,919	-4%
<b>Subtotal</b>	<b>82%</b>				<b>-128.6</b>	<b>-20.32</b>	<b>-2,148,125</b>	<b>-339,404</b>	<b>29.85</b>	<b>6,278,454</b>	<b>-5%</b>
<b>Table A2.2 Non Food Shopping (based on New Homes Survey 2004)</b>											
Reading	62%	10.85	13.35	-5.00	-52.1	-8.23	-869,736	-137,418	10.42	3,075,866	-4%
Camberley	5%	19.20	16.60	5.20	4.4	0.69	72,946	11,525	0.84	308,443	4%
Wokingham	5%	4.80	6.87	-4.14	-3.5	-0.55	-58,076	-9,176	0.84	127,650	-7%
London	5%	4.80	6.87	-4.14	-3.5	-0.55	-58,076	-9,176	0.84	127,650	-7%
<b>Subtotal</b>	<b>77%</b>				<b>-54.7</b>	<b>-8.64</b>	<b>-912,942</b>	<b>-144,245</b>	<b>12.94</b>	<b>3,639,609</b>	<b>-4%</b>
<b>Table A2.3 Travel to work (based on Census 2001 - WBC)</b>											
Wokingham	44%	4.80	6.87	-4.14	-763.2	-120.58	-12,744,761	-2,013,672	184.34	28,012,814	-7%
Reading	18%	10.85	13.35	-5.00	-377.1	-59.57	-6,296,819	-994,897	75.41	22,269,021	-4%
Bracknell F	9%	11.79	13.44	-3.30	-128.6	-20.31	-2,147,215	-339,260	38.96	11,583,226	-3%
RBWM	4%	23.03	25.10	-4.14	-71.1	-11.24	-1,187,580	-187,638	17.18	9,536,849	-2%
<b>Subtotal</b>	<b>75%</b>				<b>-1339.9</b>	<b>-211.70</b>	<b>-22,376,375</b>	<b>-3,535,467</b>	<b>315.89</b>	<b>71,401,910</b>	<b>-5%</b>
<b>TOTAL</b>					<b>-1,523</b>	<b>-241</b>	<b>-25,437,442</b>	<b>-4,019,116</b>	<b>359</b>	<b>81,319,972</b>	<b>-5%</b>

Distances straight line

\* Two way trips

CO2 emissions at UK average 158g/km

1.9 economically active per household

70% of journeys made by car

London distances assume travel by train from Wokingham

## Appendix C

### Carbon Savings - Revised calculations

Assumes road distances and traffic distribution based on Arborfield and Barkham localities

Destination	% of Trips	Distance from SDL N	Distance from SDL S	Difference (km)*	Annual Saving per dwelling (km)*	Annual CO2 saving per dwg (kg)*	Saving over 20 years for 835 dwgs	CO2 saving over 20 years for 835 dwgs	Annual trips per dwelling	CO2 emissions in base case (kg)* 3500 dwgs, 20 yrs	% saving
<b>Table A2.1 Food Shopping (based on New Homes Survey 2004)</b>											
Wokingham	18%	4.8	7.2	-4.80	-103.2	-16.30	-1,722,682	-272,184	10.75	1,711,335	-16%
Lower Earley	10%	9.5	9.5	0.00	0.0	0.00	0	0	5.97	1,254,451	0%
Winnersh	2%	7.6	7.6	0.00	0.0	0.00	0	0	1.19	200,712	0%
Camberley	5%	13.0	11.4	3.20	19.1	3.02	319,015	50,404	2.98	752,671	7%
Reading	15%	15.4	15.4	0.00	0.0	0.00	0	0	8.95	3,050,296	0%
<b>Subtotal</b>	<b>50%</b>				<b>-84.1</b>	<b>-13.28</b>	<b>-1,403,667</b>	<b>-221,779</b>	<b>29.85</b>	<b>6,969,465</b>	<b>-3%</b>
<b>Table A2.2 Non Food Shopping (based on New Homes Survey 2004)</b>											
Wokingham	20%	4.8	7.2	-4.80	-33.1	-5.23	-553,040	-87,380	3.45	549,397	-16%
Lower Earley	5%	9.5	9.5	0.00	0.0	0.00	0	0	0.86	181,225	0%
Bracknell F	5%	13.2	11.6	3.20	5.5	0.87	92,173	14,563	0.86	221,285	7%
Camberley	10%	13.0	11.4	3.20	11.0	1.74	184,347	29,127	1.72	434,940	7%
Reading	35%	15.4	15.4	0.00	0.0	0.00	0	0	6.04	2,056,425	0%
<b>Subtotal</b>	<b>75%</b>				<b>-16.6</b>	<b>-2.62</b>	<b>-276,520</b>	<b>-43,690</b>	<b>12.94</b>	<b>3,443,272</b>	<b>-1%</b>
<b>Table A2.3 Travel to work (based on Census 2001 - Barkham &amp; Arborfield Wards)</b>											
Wokingham	17%	4.8	7.2	-4.80	-697.5	-110.20	-11,647,939	-1,840,374	72.65	11,571,216	-16%
Reading	24%	15.4	15.4	0.00	0.0	0.00	0	0	101.08	34,434,151	0%
Bracknell F	12%	13.2	11.6	3.20	323.5	51.11	5,401,943	853,507	50.54	12,968,706	7%
London	7%	14.3	12.7	3.20	182.0	28.75	3,038,593	480,098	28.43	7,986,655	6%
Farnborough	15%	20.9	19.3	3.20	404.3	63.89	6,752,429	1,066,884	63.18	26,971,555	4%
<b>Subtotal</b>	<b>75%</b>				<b>212.3</b>	<b>33.54</b>	<b>3,545,025</b>	<b>560,114</b>	<b>315.89</b>	<b>93,932,282</b>	<b>1%</b>
<b>TOTAL</b>					<b>112</b>	<b>18</b>	<b>1,864,838</b>	<b>294,644</b>	<b>359</b>	<b>104,345,019</b>	<b>0%</b>

Distances based on Google Map

\* Two way trips

CO2 emissions at UK average 158g/km

1.9 economically active per household

75% of journeys made by car

London distances assume travel by train from Fleet

A2.3 Assumptions

Wokingham includes Winnersh

Reading also includes W Beks, W & M, Earley, Woodley

Bracknell incl Finchampstead

Farnborough includes other

All derated by 25%

