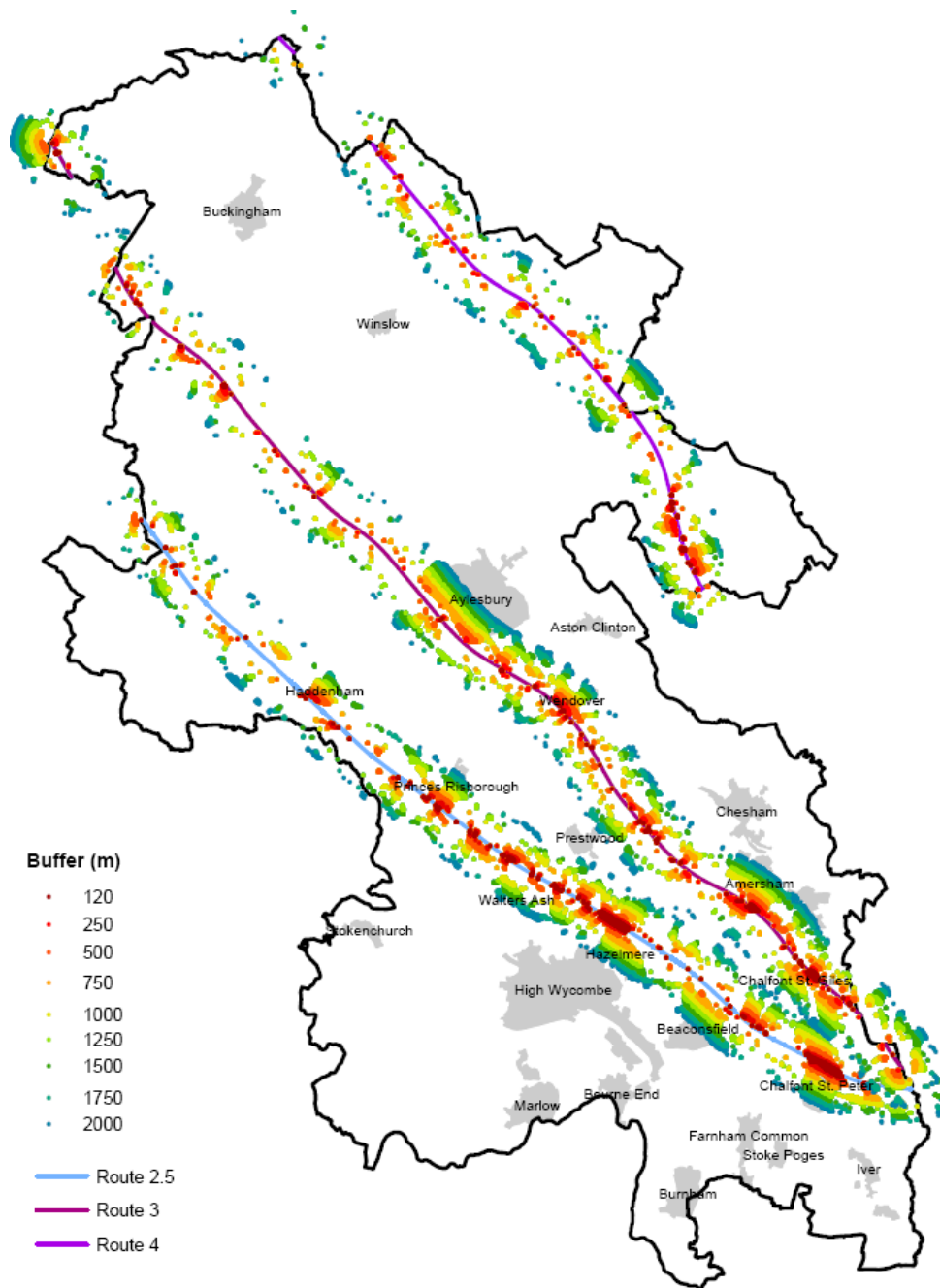


Quantifying properties within HS2 blight corridors in Buckinghamshire



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Quantifying properties within HS2 blight corridors

In January 2009, the Department for Transport published details of various options for a new high speed railway in the UK and concluded that the most appropriate route for a new high speed line was between London and the West Midlands.

A separate company, High Speed Two (HS2) Ltd, was set-up to study the feasibility and viability of new high-speed rail services from London to Scotland. In March 2010 the HS2 report was published, together with a government command paper setting-out government policy on high speed rail.

Various route options have been considered with a number rejected due to cost or other route related implications. The final report narrowed down the main options to three alignments but also recommends Route 3 as the 'preferred option'.

Introduction

This document describes *Buckinghamshire County Council's approach to providing Hilary Wharf at HS2 Action Alliance with strategic baseline data intended to enable initial assessment of potential property blight resulting from proposed as a High Speed Rail (HS2) routes through Buckinghamshire.*

The intention is that similar data should be compiled by other Councils until the full length of the three routes have been mapped using the same methodology. This specification has been developed by Hilary Wharf and Bucks County Council to make this possible.

The assessment utilises Geographical Information System (GIS) mapping and property data in order to test property information according to rail route data provided directly from HS2 Ltd.

The method allows property counts to be made within 9 specific Distance Zones, or 'buffers' moving-out from the rail line. It also enables property numbers to be assessed in accordance with 4 different 'Route Blight Classifications' (e.g. cutting, viaduct).

Property values have *not* been included in this exercise, but it is possible that that this feature could be added (using the banding data used for council rating purposes).

HS2 Routes in Buckinghamshire

The assessment considers all three route options currently described by HS2 Ltd. To ensure a robust and accurate assessment this analysis only uses exact route GIS data supplied directly from HS2 Ltd.

Property addresses and post codes relating to HS2

Assessment of properties in this study is undertaken using *Royal Mail* post code address data. This address data combines all postal addresses and, therefore

does not distinguish between postal address property types (e.g. houses, factories, shops). Further, the data does not include non-postcode properties or buildings such as farmland, woodland, barns etc.

‘Buffers’ and Search Corridors

This assessment considers all post code addresses falling within 9 distinct distance 'buffers' moving-out from the railway line. Thus, with the use of a GIS, a buffer of 250 metres will assess 250m on each side of the railway and provides a total 'Search Corridor' width of 500m.

The maximum 'buffer' distance used in this exercise is 2000m (providing a maximum Search Corridor of 4000m width) broken down into 250m graduations. In addition, a buffer of 120m is also incorporated into the analysis in order to review all properties falling within an immediate proximity adjacent to the proposed line. The measure of 120m is based on distance rulings used in previous, almost identical, Exceptional Hardship Schemes (EHS).

Table 1: An extract of the data shows the numbers of post code properties falling within 9 buffers Routes 3, 2.5 and 4.

Route	Buffer (m)								
	120	250	500	750	1000	1250	1500	1750	2000
3	419	1424	5118	12229	20251	27693	34837	41650	49579
2.5	1802	3833	7692	11904	18332	24431	31137	37554	42259
4	52	396	1312	2186	2842	3798	5501	8155	10728

How to use these figures:

The number of properties shown in Table 1 is provided on a cumulative basis. Thus, properties shown for a 250m are also included in the figure for 500m. However, subtracting the number of properties falling within 250m from 500m will provide a total count of properties falling between 250 - 500m of the rail route.

All calculations of distance between properties and the centre of the line are done 'as the crow flies'. No account is taken of landscape features e.g. hills etc that might lie between.

Detail and impact of the HS2 engineering structures

The impacts on properties will vary in accordance to the distance to and the type of railway structure. Thus, it is likely that beyond construction, the noise and visual impact of a rail route running underground will have far less impact on the value and qualities of a dwelling that is in close proximity to a viaduct.

HS2 Ltd line data provides an indication of the type and location of different types of construction along the proposed routes.

Construction types are broken down into 7 different categories of: viaduct; tunnel; embankment; at grade; widening existing; cutting; and retained wall. These are described in this methodology as 'Blight Categories'.

The location, where the line changes from one type of construction to another (for example, from 'at grade' to travelling across a viaduct), is clearly marked within the HS2 Ltd data.

Blight Categories

For the purposes of analysis, and to ensure that data is manageable, line structures have been grouped in four Blight Categories:

1. Tunnel
2. Cutting and retained wall
3. Embankment, at grade, widening existing
4. Viaduct

The four categories also allow impacts to be further sub-divided according to their likely visual impact. Therefore, rail structures described in categories 1 and 2 are likely to be 'out of view' of local properties and therefore have a potential to have reduced impacts. Those described in categories 3 and 4 are likely to be 'in view' of properties and more likely to have higher impact within the landscape. However in making such assumptions this takes no account of the landscape features that might lie between the actual property and the HS2 line (see considerations section below).

In counting the number of properties that fall into each blight category, a property might fall into several categories and be counted more than once. See considerations section below.

Postcode Zones and County totals

It was felt that it was useful to break-down properties into areas or zones and that county or district level information property was too broad brush. Similarly, creating data at the parish level would have generated too much data and would have been very time-consuming. For this assessment it was decided to pool property numbers in accordance to postcode location using the first four digits of a postcode (e.g. HP16). It was felt that pooling properties into postcode areas would be more meaningful to local communities.

Property values data

Still to be undertaken beyond this study but is to use standard bandings.

Results

The full results of the study can be viewed on pages 6 to 14.

Considerations

- The approach described for assessing properties in this document is intended to aid the identification of property blight. The data is not intended to be an assessment of the specific rail related impacts to property.
- The methodology uses cartographic mapping and georeferenced data relating to postcode properties. Other local environment considerations (for example a woodland or another building that falls between a rail line and a property) will alter the type or level of impact, and therefore blight, experienced at specific property locations. The true level of blight on any individual property can only be identified by more thorough 'ground truthing' and testing against proposed impacts.
- Variations in 'Route Blight Classifications' (e.g. cutting, viaduct) exist in the rail route data provided from HS2Ltd. For example, HS2 data shows a continuous length of route running along a cutting when in fact other HS2 data indicates that the rail breaks free from this cutting for 100 metres, to run 'at grade', before it disappears back into a cutting.
- It is likely that a property will be located where it could be subject to a number of blight impacts. For example, a property could be within a reasonable proximity to a 'cutting', 'at grade', and 'viaduct' within a 2000m buffer distance. As a result, properties that are subject to more than more type of Route Blight Classification will also be counted more than once in the table data.

Contact information

- The Natural Environment Team at Buckinghamshire County Council has worked with Hilary Wharf, at HS2 Action Alliance, to prepare and undertake this study.
- The Natural Environment Team Manager (Mark Bailey) can be contacted at: mabailey@buckscc.gov.uk or Tel. 01296 382389. Hilary can be contacted at hilarywharf@hs2actionalliance.org

All Routes – Overview

Total route counts of postcode properties falling within each Distance Zone.

Route	Buffer (m)								
	120	250	500	750	1000	1250	1500	1750	2000
3	419	1424	5118	12229	20251	27693	34837	41650	49579
2.5	1802	3833	7692	11904	18332	24431	31137	37554	42259
4	52	396	1312	2186	2842	3798	5501	8155	10728

Route 3 (preferred) – Overview

Properties within 4-digit postcode areas, within each Distance Zone from 'Proposed' Route 3 broken down into 4 different 'Route Blight Classifications'

Route 3	Post code	Number of properties within:																
		HP16	HP17	HP18	HP19	HP20	HP21	HP22	HP5	HP6	HP7	HP8	MK18	NN13	OX27	SL9	UB9	WD3
Viaduct	120m							2					2	5			1	
Embankment, At Grade, Widening								43					21	2				
Cutting, Retained Wall		21	2					14			1		7	12				
Tunnel								16		5	101	182				10		
Viaduct	250m							31					25	18			5	
Embankment, At Grade, Widening		2	5	4			29	260					97	30				
Cutting, Retained Wall		83	5	1				102		4	16		16	14				
Tunnel								31					25	18			5	
Viaduct	500m		11	1	4		50	100					117	166			176	4
Embankment, At Grade, Widening		9	28	21	3		745	952		4			332	158				
Cutting, Retained Wall		236	32	5	25			442		21	104		29	39				
Tunnel								534		25	1487	561				239		1
Viaduct	750m	2	55	13	659		845	286					249	648			789	4
Embankment, At Grade, Widening		17	112	204	982		2207	1919		7			558	552	15			
Cutting, Retained Wall		334	74	180	1003		584	976		154	342		31	307	1			
Tunnel								1168		246	2377	893				626		4

Route 3	Post code	Number of properties within:																
		HP16	HP17	HP18	HP19	HP20	HP21	HP22	HP5	HP6	HP7	HP8	MK18	NN13	OX27	SL9	UB9	WD3
Viaduct	1000m	17	232	26	2084		2106	793					317	1332			1748	9
Embankment, At Grade, Widening		71	246	590	2261		3449	2913		98	2		668	1081	19			
Cutting, Retained Wall		464	179	624	2236		1475	1764		543	830		76	639	2			
Tunnel		1						1811		927	2740	1386				1012		174
Viaduct	1250m	38	415	41	3361		3277	1461				403	2072	8			2377	34
Embankment, At Grade, Widening		116	538	881	3446		4314	3655		290	90		687	1831	35			
Cutting, Retained Wall		1027	334	808	3410		2361	2323		1095	1208	11	114	1214	4			
Tunnel		19						2221		1676	2996	1848				1508		493
Viaduct	1500m	69	683	49	4267		4649	2236				633	3319	17	2	2891	51	
Embankment, At Grade, Widening		246	824	902	4282		5337	4348		384	113		696	2950	93			
Cutting, Retained Wall		1417	614	826	4286		3761	2679		1782	1618	11	139	2097	14			
Tunnel		51	1					2614		2528	3235	2244				1869		739
Viaduct	1750m	115	919	81	5076	12	5860	3196				723	4794	22	10	3385	62	
Embankment, At Grade, Widening		511	1003	930	5109	32	6731	4903		406	119		741	4432	111			
Cutting, Retained Wall		1637	784	854	5113	32	5002	3098	2	2362	2031	11	291	3223	21			
Tunnel		58	7					2926		3335	3399	2402				2101		953

Route 3	Post code	Number of properties within:																
		HP16	HP17	HP18	HP19	HP20	HP21	HP22	HP5	HP6	HP7	HP8	MK18	NN13	OX27	SL9	UB9	WD3
Viaduct	2000m	159	1115	126	6023	180	7350	4084					794	5690	62	20	3811	66
Embankment, At Grade, Widening		735	1236	1006	6114	217	8545	5454		411	119		948	5403	126			
Cutting, Retained Wall		1973	1011	898	6147	217	6532	3633	7	2940	2583	11	402	4438	24			
Tunnel		85	12					3156		4350	3776	2535				3638	42	1072

Route 3 (preferred) – Totals

Total Route Count of properties within separate Distance Zones in accordance with the 4 'Route Blight Classifications'

Route 3 Type	Buffer (m)									
	120	250	500	750	1000	1250	1500	1750	2000	
Viaduct	10	79	629	3550	8664	13487	18866	24255	29480	
Cutting, Retained Wall	57	241	933	3986	8832	13909	19244	24461	30816	
Embankment, At Grade, Widening	66	427	2252	6573	11398	15883	20175	25028	30314	
Tunnel	314	938	2847	5314	8051	10761	13281	15181	18666	
Total along whole route ¹	419	1424	4998	11796	20251	27693	34837	41650	49579	

¹ Buffer totals includes overlapping 'route blight classifications'.

Route 2.5 – Overview

Properties within 4-digit postcode areas, within each Distance Zone from Route 2.5 broken down into 4 different 'Route Blight Classifications'

Route 2.5	Post code	Number of properties within:																				
		HP10	HP13	HP14	HP15	HP16	HP17	HP18	HP27	HP7	HP8	HP9	NN13	OX25	OX39	OX9	SL2	SL9	UB10	UB8	UB9	
Viaduct	120m					14			4	1		3	2									
Embankment, At Grade, Fill		1					4	6	8	1		4	2	1							131	
Cutting, Cut		1					6	4	3	1		10	12									194
Tunnel				10	779	2			72									560				107
Viaduct	250m			17		19	2		5	1		26	18									
Embankment, At Grade, Fill		3					19	10	11	1		40	30	1							359	
Cutting, Cut		6					103	11	12	1		34	14					1			460	
Tunnel		2		19	1688	8		6	195									970				238
Viaduct	500m			55	1	21	39	2	24	2		129	165								76	
Embankment, At Grade, Fill		13					281	45	43	7		167	158	48							897	
Cutting, Cut		14					409	39	36	7		156	39	1				13			1025	
Tunnel		3		134	2532	21		17	1023									1748				379
Viaduct	750m			110	15	27	301	82	36	6		458	646					4			344	
Embankment, At Grade, Fill		15					782	153	72	17		636	552	101				6			1311	
Cutting, Cut		15					890	137	71	16		585	307	77				137			1577	
Tunnel		29		185	3575	27		35	1538									2177				734

Route 2.5	Post code	Number of properties within:																				
		HP10	HP13	HP14	HP15	HP16	HP17	HP18	HP27	HP7	HP8	HP9	NN13	OX25	OX39	OX9	SL2	SL9	UB10	UB8	UB9	
Viaduct	1000m	10		298	10	55	672	240	92	97		888	1328					64			812	
Embankment, At Grade, Fill		73					1259	249	194	150		1423	1081	133				74			1505	
Cutting, Cut		199			83		1322	199	215	136		1429	639	133					906			1823
Tunnel		247		476	5209	107		67	2081										3096		21	1581
Viaduct	1250m	21		401	174	129	1269	257	358	236		1492	2027			1		449			1437	
Embankment, At Grade, Fill		454			122		1567	449	468	299		2248	1831	136		1		472			1813	
Cutting, Cut		536			374		1597	466	481	298		2270	1255	135		1		1640			2012	
Tunnel		575		908	6291	169		316	2916										4030		21	1924
Viaduct	1500m	40		586	349	177	1691	305	564	291		2213	3160			5		964			2227	
Embankment, At Grade, Fill		860			455		1923	964	724	341		3130	2950	138		11		1009			2562	
Cutting, Cut		975			1161		1968	856	881	341		3071	2252	136		11		2554		21	2678	
Tunnel		1051		1377	6763	208		587	3669	48									4848		21	2149
Viaduct	1750m	57		728	625	223	2021	359	735	318		3319	4563			22		1661	9		2597	
Embankment, At Grade, Fill		1399			1263		2121	1178	1027	433		4521	4432	141	1	26		1735	4		3098	
Cutting, Cut		1514			2334		2126	1169	1354	443		4416	3360	136		26		3892		21	3127	
Tunnel		1596		1661	7047	233		710	4295	96		1							5888		21	2286

Route 2.5	Post code	Number of properties within:																			
		HP10	HP13	HP14	HP15	HP16	HP17	HP18	HP27	HP7	HP8	HP9	NN13	OX25	OX39	OX9	SL2	SL9	UB10	UB8	UB9
Viaduct	2000m	76		1529	818	258	2125	651	862	421	5	4813	5417			75		2510	24		2967
Embankment, At Grade, Fill		1841			2373		2126	1342	1552	520	5	5456	5403	142	11	91		2574	13	21	3421
Cutting, Cut		1961			3669		2126	1257	2121	521	5	5413	4521	140	7	93	9	4810	1	21	3419
Tunnel		1954	87	2107	7235	321		758	4789	134		8					2	6522		21	2495

Route 2.5 – Totals

Total Route Count of properties within separate Distance Zones in accordance with the 4 'Route Blight Classifications'

Route 2.5 Type	Buffer (m)								
	120	250	500	750	1000	1250	1500	1750	2000
Viaduct	24	88	514	2029	4566	8251	12572	17237	22551
Embankment, At Grade, Fill	158	474	1659	3645	6141	9860	15067	21379	26891
Cutting, Cut	231	642	1739	3812	7084	11065	16905	23918	30094
Tunnel	1530	3126	5857	8300	12885	17150	20721	23834	26433
Total along whole route ¹	1802	3833	7692	11904	18332	24431	31137	37554	42259

Route 4 – Overview

Properties within 4-digit postcode areas, within each Distance Zone from Route 4 broken down into 4 different 'Route Blight Classifications'

Route 4	Post code	Number of properties within:					
		HP23	LU7	MK17	MK18	MK19	NN12
Viaduct	120m			1			
Cut			26			1	
Fill			27	1		1	
Viaduct	250m		12	25			
Cut		2	194	36		8	
Fill		2	163	27		15	
Viaduct	500m		55	61		16	
Cut		6	784	98		57	
Fill		6	606	84		71	
Viaduct	750m		277	121		52	
Cut		23	1255	204	3	69	
Fill		24	1130	261		82	
Viaduct	1000m		855	262		68	
Cut		51	1874	341	7	85	
Fill		55	1701	462	6	85	
Viaduct	1250m	9	1616	308		76	
Cut		145	2637	504	10	87	
Fill		159	2168	642	10	87	
Viaduct	1500m	21	2022	328		88	
Cut		307	4052	633	14	98	8
Fill		317	2351	784	13	98	3
Viaduct	1750m	36	2673	370		90	
Cut		651	5944	993	15	102	12
Fill		669	3125	1068	15	102	10
Viaduct	2000m	215	3545	541		107	
Cut		1256	7555	1494	29	106	17
Fill		1293	4425	1445	19	105	13

Route 4 – Totals

Total Route Count of properties within separate Distance Zones in accordance with the 4 'Route Blight Classifications'

Route 4 Type	Buffer (m)								
	120	250	500	750	1000	1250	1500	1750	2000
Viaduct	1	37	132	450	1185	2009	2459	3169	4408
Cut	27	240	945	1554	2358	3383	5112	7717	10457
Fill	29	207	767	1497	2309	3066	3566	4989	7300
Total along whole route¹	52	396	1312	2186	2842	3798	5501	8155	10728