Black Country Core Strategy Submission Document

Waste Background Paper 2 Appendices

February 2010

A Joint Core Strategy for the Black Country

Dudley Walsall Council Sandwell Wolverhampton City Council Black Country See it in colour

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Front cover illustrations: Merchants Way Household Recycling Centre, Aldridge and Kerbside Recycling Scheme, Sandwell

BLACK COUNTRY CORE STRATEGY
SUBMISSION DOCUMENT

Waste Background Paper 2
Appendices

February 2010

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Appendix 1

Update of Waste Arisings Data

A1.1 Since the BCWPS was prepared, more up-to-date information on MSW, C&I and Hazardous waste arisings has become available[1]. For example, for MSW, WasteDataFlow information for 2007/08 is available, for C&I waste new estimates of arisings for each WPA have been provided by WMRTAB, and the Environment Agency has provided updated information on Hazardous waste arisings through the Hazardous Waste Interrogator 2007.

A.1.2 Table A1a below provides an update on the arisings data for comparison with the data presented in the BCWPS (see also Table W2 of the main Background Paper).

Table WA1a: Current Estimated Waste Arisings in the Black Country by Waste Stream – Update (September 2009)

Waste Stream	Arisings (tonnes per annum)					Baseline Info Date
	Dudley	Sandwell	Walsall	W'ton	Black Country Total	
MSW	147,000	143,000	138,000	142,000	570,000	2007/08
C&I	286,000	371,000	287,000	226,000	1,170,000	2006/07
CD&EW	328,000	598,000	239,000	280,000	1,445,000	2005
Hazardous	34,000	48,000	47,000	42,000	171,000	2007
TOTAL	**705,000**	**1,160,000**	**711,000**	**690,000**	**3,356,000**	

Sources: Various. All figures are rounded to the nearest 1,000 tonnes (due to rounding Black Country totals may not be exactly the sum of WPA figures).

A1.3 A comparison of the updates with the data set in the BCWPS suggests that:

[1] MSW – Defra WasteDataFlow, 2007/08, C&I – Estimates by WPA produced by West Midlands RTAB using the methodology developed by ADAS Study into Commercial & Industrial Waste Arisings (April 2009), for EERA, Hazardous – Environment Agency 2007 Hazardous Waste Interrogator

- Municipal Solid Waste (MSW) arisings fell slightly in Walsall and Wolverhampton between 2006/07 and 2007/08, but increased in Dudley and Sandwell, resulting in a slight overall decrease in total Black Country arisings;

- C&I waste arisings in the Black Country have fallen dramatically between 2004/05 and 2006/07, by nearly 0.5 million tonnes;

- There is no new data on CD&EW arisings;

- Hazardous waste arisings within each authority, and across the Black Country as a whole, have fallen slightly between 2006 and 2007.

A1.4 With the exception of the C&I figure, the updated arisings data does not differ significantly from that in BCWPS. The difference between the new C&I arisings estimates for 2006/07 and the previous estimates for 2004/05 is very significant, and cannot be ignored. However, we cannot be certain that the new arisings data is robust.

A.1.5 The new C&I waste arisings estimates have been worked out using a methodology developed through a national study.[2] This methodology is itself based on the findings of a waste arisings survey undertaken in the North West region during 2006/07 and a comparison with employment profiles for the area, to work out estimates of waste arisings per employee for different economic sectors. The national study has adjusted this methodology and used this to provide estimates for the other regions.

A1.6 The WMRTAB has used the same ADAS methodology to provide estimated arisings for each WPA in the West Midlands region, including the Black Country authorities. Table WA1b below provides a comparison between the new ADAS-based estimates and previous estimates of C&I waste arisings in 2005/06 and 2006/07, used in the RSS Phase 2 Revision and the BCWPS.

[2] Study into Commercial & Industrial Waste Arisings (April 2009), ADAS for East of England Regional Assembly

Table WA1b: Estimates of C&I Waste Arisings in the Black Country

Authority	Estimates of C&I Waste Arisings		
	RSS Phase 2 Revision 2005/06 (tonnes)	BCWPS Revised RSS Modelling 2006/07 (tonnes)	ADAS Methodology 2006/07 (tonnes)
Dudley	378,000	328,000	286,000
Sandwell	558,000	598,000	371,000
Walsall	380,000	239,000	287,000
Wolverhampton	311,000	280,000	226,000
Black Country Total	**1,627,000**	**1,445,000**	**1,170,000**

Source: RSS Phase 2 Revision Preferred Option Table 6, BCWPS Tables 3.3 and 4.25, WMRTAB Estimates of C&I Waste Arisings in the West Midlands Region (2009). All figures rounded to the nearest 1,000 tonnes.

A1.7 The ADAS-based estimates suggest that C&I waste arisings in the Black Country fell by nearly 0.5 million tonnes between 2005/06 and 2006/07. This does not seem credible. The previous estimates do seem to indicate a fall in C&I waste arisings in the Black Country between 2005/06 and 2006/07, but not as dramatic as the ADAS-based estimates suggest. The difference between these data sets is so significant that it is more likely to reflect inaccuracies in the underlying data than an actual fall in arisings.

A1.8 Some concerns have been expressed by neighbouring WPAs about the accuracy of the underlying information used in the ADAS-based estimates. Although the methodology is generally regarded as being robust, the accuracy of estimates at WPA level depends on using the most-up-to-date employment profiles for each area. Unfortunately, given the timetable for the Core Strategy there has been insufficient time to check the accuracy and robustness of the baseline employment information for the Black Country authorities.

A1.9 The difference between these ADAS-based data set and earlier estimates of arisings is so significant that it would be dangerous to take the

former set at face value without checking its validity. The authorities have therefore not adjusted the overall requirements for C&I waste capacity in Policy WM1 to take account of this.

A1.10 For the above reasons, the waste management requirements in Core Strategy Policy WM1 are based on the estimated waste arisings and waste projections in BCWPS Tables 3.1, 3.3, 3.7, 3.8, 4.3, 4.15, 4.25 and 4.27. These are summarised in Tables WM1a and WM1b of Appendix 6 of the published Core Strategy.

Appendix 2

Update of Waste Capacity Data

Municipal Waste Management Capacity

A2.1 There has been no change to the Municipal waste treatment capacity, waste transfer stations, Household Waste Recycling Centres (HWRCs) or depots operated by or on behalf of the four waste disposal authorities (WDAs) since the baseline information was compiled. This was checked with the WDAs and updated prior to publication of the Waste Planning Study report (March 2009). Total recovery and treatment capacity remains at around 205,000 TPA, the combined capacity of the Energy from Waste (EfW) plants in Dudley and Wolverhampton.

A2.2 However, the authorities feel that the capacity of the merchant Greenstar facility in Walsall, which is estimated to be around 250,000 TPA, should also be included in the estimate of Municipal waste management capacity. Although it is a commercial facility, it is mainly handling Municipal waste, mostly under contracts with WDAs outside the Black Country. However, as the spatial objective is to achieve "equivalent self-sufficiency," this does not matter. The capacity of this facility is therefore included in the updated capacity summary in Table WA4 of the Background Paper.

C&I Waste Management Capacity

A2.3 Table 3.11 of the Black Country Waste Planning Study uses throughput data from the 2006 EA RATS database to estimate total C&I management capacity for the Black Country. This is based on the assumption that throughput represents around 59% of total theoretical capacity, which is in turn based on the findings of technical work on waste capacity undertaken to inform the RSS Phase 2 Revision.[3]

[3] See Section 3.6, Waste Treatment Facilities and Capacity Survey, West Midlands Region Final Report (May 2007), SLR for WMRA

A2.4 A summary version of the input data in Table 3.11 is reproduced in Table WA2a below. Capacity estimates have been split into three broad categories summarising inputs into to MRS (metal recycling and car breaker facilities), MRF (material recycling/ recovery facilities) and Treatment (physical and physical-chemical treatment facilities).

Table WA2a: Estimated C&I Waste Treatment Capacity in the Black Country 2006 – Throughput by WPA

Site Type	Throughput by WPA				Black Country Total
	Dudley	Sandwell	Walsall	W'ton	
MRS	445,690	275,528	374,612	23,749	1,119,579
MRF	2,770	6,905	1,537	0	11,212
Treatment	860	29,739	21,471	45,215	97,285
Total	**449,320**	**312,172**	**397,620**	**68,964**	**1,228,076**

Source: Table 3.11, Black Country Waste Planning Study Final Version (May 2009), data summarised into broad site types.

A2.5 As the table in the study report does not provide estimated capacity by WPA, the Black Country Authorities have worked out how the capacity should be divided up, using the data in Table 3.11 and the same methodology. The results are summarised in Table WA2b below.

A2.6 Unfortunately, this has raised concerns about the accuracy of the input figures in Table 3.11 for each WPA. In particular, the input figures for MRS in Dudley seem far too high, given what we know about the range of facilities in the area. A comparison with inputs by Licence Code confirms that there may be inaccuracies in the way that the data has been analysed at WPA level.

Table WA2b: Estimated C&I Waste Treatment Capacity in the Black Country 2006 - Theoretical Maximum Capacity by WPA

Site Type	Theoretical Maximum Capacity by WPA				Black Country Total
	Dudley	Sandwell	Walsall	W'ton	
MRS	755,000	467,000	635,000	40,000	1,898,000
MRF	5,000	12,000	3,000	0	20,000
Treatment	1,000	50,000	36,000	77,000	164,000
Total	**761,000**	**529,000**	**674,000**	**117,000**	**2,081,000**

Source: Table 3.11, Black Country Waste Planning Study Final Version (May 2009), estimates of theoretical maximum capacity for each WPA assuming inputs are 59% of this.

A2.7 The tables below have been prepared for comparison. Table WA2c shows inputs into licensed facilities by Licence Code, and Table WA2d shows theoretical maximum capacity, assuming these inputs represent 59% of this. It will be seen from this that the total C&I capacity figure for the Black Country is broadly similar to the total figure in Table 3.11 and Table WA2a above, but slightly lower, and the total capacity tied up in MRS facilities is also lower.

Table WA2c: Inputs into Licensed Commercial Waste Treatment Facilities in the Black Country 2006 – by Licence Code and by WPA

Site Type	Inputs by WPA				Black Country Total
	Dudley	Sandwell	Walsall	W'ton	
MRS[4]	146,368	320,339	398,098	27,427	892,232
MRF[5]	2,113	40,825	41,271	18,983	103,192
Treatment[6]	1,121	148,284	118,239	56,860	324,504
Total	**149,602**	**509,448**	**557,608**	**103,270**	**1,319,928**

Source: EA 2006 RATS database

[4] Total inputs into facilities licensed under EA Licence Codes A19, A19a and A20.
[5] Total inputs into facilities licensed under EA Licence Code A15.
[6] Total inputs into facilities licensed under EA Licence Codes A16, A17, A21, A22, A23. This includes both recovery and treatment, and much of it relates to facilities known to be handling hazardous wastes.

Table WA2d: Revised Estimate of Licensed Commercial Waste Treatment Capacity in the Black Country 2006 - Theoretical Maximum Capacity by WPA

Site Type	Theoretical Maximum Capacity by WPA				Black Country Total
	Dudley	Sandwell	Walsall	W'ton	
MRS	248,000	543,000	675,000	46,000	1,512,000
MRF	4,000	69,000	70,000	32,000	175,000
Treatment	2,000	251,000	200,000	96,000	549,000
Total	**254,000**	**863,000**	**945,000**	**174,000**	**2,236,000**

Source: EA 2006 RATS database, assuming inputs are 59% of theoretical maximum capacity (all figures rounded to the nearest 1,000 tonnes).

A.2.8 The reason for the differences between BCWPS Table 3.11 and the tables above is not entirely clear, but there are some clues. Atkins used the raw 2006 RATS data in their analysis, and we know from subsequent analysis and "cleaning" of the database that in some cases the EA had attributed facilities to the wrong WPA area (this is acknowledged in Section 3.3.2 of the report).

A.2.9 It therefore seems likely that in the database used by Atkins, some facilities in Sandwell were attributed to Dudley, which would explain why the MRS figure for Dudley seems abnormally high. The lower total inputs figure may also be explained by the fact that Atkins undertook a detailed analysis of the RATS data (looking at inputs by European Waste Code Description) so they probably excluded inputs of non-metals at metal recycling facilities and inputs relating to Hazardous Waste and CD&EW, resulting in a lower estimate of C&I capacity.

A.2.10 Towards the end of the study, RATS data for 2007 became available through the Waste Data Interrogator 2007, but this was too late to be taken into account. At a regional level, a "refresh" of the SLR study on waste treatment capacity took place in March - April 2009, using the 2007 EA data and from this a new regional database of waste management facilities has

been produced, which includes revised estimates of maximum capacity. This database was rolled out to WPAs in September 2009, via WMRTAB.

A.2.11 Although the timescale was very tight, there was just enough time to review the data for the Black Country authorities. The results are summarised in Tables WA2e and WA2f below. When the results are compared with Tables WA2a – WA2d, overall, inputs in 2007 appear to be slightly above inputs in 2006. However, inputs into licensed sites in Walsall decreased significantly, and there was a corresponding increase in inputs into facilities in the other authorities. It is not clear why this was the case.

A.2.12 The new estimates of maximum capacity are also higher than previous estimates. This is partly explained by the inclusion of a limited number of known unlicensed facilities where some capacity information is available, which has resulted in increased estimates of MRF/ recycling capacity.

Table WA2e: Inputs into Licensed Commercial Waste Treatment Facilities in the Black Country 2007 - by Licence Code and by WPA

Site Type	Theoretical Maximum Capacity by WPA				Black Country Total
	Dudley	Sandwell	Walsall	W'ton	
MRS	155,000	798,000	40,000	19,000	1,012,000
MRF/ Recycling[7]	2,000	34,000	80,000	28,000	116,000
Treatment[8]	3,000	135,000	99,000	85,000	322,000
Total	**160,000**	**967,000**	**219,000**	**132,000**	**1,415,000**

Source: WM Regional Waste Capacity Database (September 2009)

[7] This includes some accredited reprocessors as well as capacity under A15 licences, and also includes a significant amount of hazardous waste recovery.

[8] This includes some small commercial incinerators (A18) as well as capacity under A16, A17, A21, A22, A23 licences (but not the MSW EfW plants).

Table WA2f: Estimated Maximum Commercial Waste Treatment Capacity in the Black Country – April 2009

Site Type	Theoretical Maximum Capacity by WPA				Black Country Total
	Dudley	Sandwell	Walsall	W'ton	
MRS	176,000	895,000	470,000	72,000	1,613,000
MRF/ Recycling	2,000	131,000	223,000	45,000	315,000
Treatment	3,000	230,000	230,000	86,000	549,000
Total	**181,000**	**1,232,000**	**923,000**	**203,000**	**2,539,000**

Source: WM Regional Waste Capacity Database, with additions based on local knowledge (September 2009)

A.2.13 It can also be seen that theoretical maximum C&I capacity varies between the authorities, and is much lower in Dudley and Wolverhampton than in Sandwell and Walsall. However, in Walsall's case the availability of capacity did not result in that capacity being used to its maximum extent in 2007, since inputs were well down on previous years.

A.2.14 Although this undoubtedly includes some hazardous waste and CD&EW recycling capacity, on balance, the Black Country Authorities feel that Table WA2f above is more likely to reflect actual MRF/ Recycling capacity in the Black Country than Table 3.11 of the Waste Planning Study report and Tables WA2b – WA2e above. There are the following reasons for this:

- The split by WPA fits what the authorities know about the number and range of "strategic" waste management facilities in their area;

- The split between MRS, MRF and Treatment capacity also better reflects what the authorities know about facilities operating in the Black Country and the range of wastes they handle;

- The latest survey has included some unlicensed capacity not identified previously and there is likely to be further "exempt"

capacity within the Black Country for which we currently have no information; and

- This reflects the focus of the licensing regime towards potentially harmful processes rather than activity at the top end of the waste hierarchy (e.g. re-use and material recovery).

A.2.15 To avoid double-counting, a discount of 240,000 TPA has been applied to the "capacity gap," roughly equivalent to the estimated hazardous waste treatment capacity (see Table WA2h and paragraph A2.27 below). This data has been used to update Table 4.23 of the BCWPS (see Table W6 of the main Background Paper).

A.2.16 Although the C&I waste management requirements in the Core Strategy have used the best and most up-to-date estimate of C&I waste treatment capacity available, it is recognised that there is room for improvement. The BCWPS recommended that a survey of waste operators be undertaken to provide a more accurate estimate of the operational capacity of facilities. This has in fact been done at a regional level, to inform the new regional waste management capacity database. From 2009/10 WPAs will be expected to review and update the waste management capacity information for their area on an annual basis, so the accuracy of the capacity information for the Black Country should improve over time.

CD&EW Management Capacity

A.2.17 The baseline data for CD&EW treatment and recovery in Table 3.12 of the Waste Planning Study report derives from the 2006 EA RATS data.[9] Unfortunately, this is unlikely to provide anything like an accurate picture of CD&EW capacity in the Black Country. The reason for this is that the EA RATS database does not list CD&EW processing facilities, as there is no

[9] We assume the data in Table 3.12 represents inputs of CD&EW (as specified in European Waste Code Descriptions) into facilities licensed under Codes A20 and A17, in which case these are not facilities whose primary function is CD&EW processing.

specific licence code for this (except for mobile plant). However, some licensed landfill sites and transfer facilities which are known to process CD&EW do appear on the database.

A.2.18 Section 3.3.3 of the study report lists the known CD&EW processing facilities in the Black Country.[10] This listing has since been reviewed by the authorities, and all sites believed to be involved in the recycling and storage/ handling of CD&EW in the Black Country are included in Appendix 6 of the Publication Core Strategy. These facilities are operated mainly by demolition contractors. Unfortunately, the total maximum throughput capacity of these facilities is not known.

A.2.19 Even if we did know the operational capacity of these facilities, it would not reflect total CD&EW processing capacity/ activity in the Black Country, because it would not include on-site recycling of material using mobile crushers. Under the current Environmental Permitting Regulations, mobile crushers may be licensed or permitted by the EA or the Environmental Protection Authority where the head office of the operating company is located, and can in theory operate anywhere subject to compliance with their licence or permit.

A.2.20 The most recent national survey of the use of CD&EW as aggregate (2005) included a survey of material processed by mobile crushers. This gives some indication of recycling performance (and therefore potential capacity) in the Black Country. The results of this are summarised in Table 3.7 of the BCWPS. This suggests that in 2005, the Black Country produced around 757,000 tonnes of recycled aggregate and around 92,000 tonnes or recycled soils, which in turn suggests a total CD&EW recycling capacity of around 850,000 TPA. Although this data is the best available estimate of CD&EW recycling capacity it cannot be regarded as robust, since it is based on weighted “shares” attributed to each authority.

[10] Aldridge Quarry is included in error – this should be disregarded as it is not currently a CD&EW processing facility. An application for processing in 2004 was dismissed on appeal.

A.2.21 The only way to obtain reliable, up-to-date information about processing at static CD&EW processing facilities is through regular surveys, such as those undertaken by WMRAWP for secondary aggregates, and the new regional waste management capacity database. However, successful monitoring will depend on operators providing the relevant information, which they are not obliged to do.

A.2.22 Information about on-site recycling of CD&EW using mobile plant can also be obtained from Site Waste Management Plans (SWMP). These should provide a record of processing at sites in the Black Country for which a SWMP is required (i.e. construction, demolition and remediation projects with a total value of £300,000 or more).

A.2.23 Better information on CD&EW recycling capacity will hopefully become available within the next 2 years, through the new regional monitoring system and through local systems set up within each WPA to monitor and record information from Site Waste Management Plans (SWMP). None of the authorities currently has such a system in place but it is recognised that this needs to be done in the future and this is addressed in Policy WM5.

Hazardous Waste Management Capacity

A.2.24 The estimated hazardous waste management capacity in Table 3.13 of the Black Country Waste Planning Study also derives from 2006 EA RATS data.[11] However, as with CD&EW, there are no specific licence codes specifically relating to the recovery and treatment of hazardous wastes (although there is a coding for hazardous waste transfer stations).

A.2.25 The estimate in Table 3.13 is therefore unlikely to be 100% accurate. However, many of the facilities licensed under the relevant licence codes are

[11] As with CD&EW, it is assumed that represents inputs of hazardous wastes (as specified in European Waste Code Descriptions) into facilities licensed under Codes A15 – A20.

known to specialise in the management of hazardous wastes, so its data is likely to be more robust than the corresponding data for CD&EW.

A.2.26 Fortunately, there is another data source which is likely to give us a more accurate picture of the capacity of local hazardous waste treatment capacity. As well as recording tonnages of hazardous waste arising in the Black Country, the Environment Agency's Hazardous Waste Data Interrogator records the tonnages of waste managed in the area, and its fate. This should therefore provide a good indication of the capacity likely to be available in the Black Country. Table WA2h below summarises the data for 2007 which is the latest information available at WPA level.

Table WA2h: Tonnages of Hazardous Waste Managed at Licensed Facilities in the Black Country in 2007 by Fate

Authority	Re-Use/ Recovery[12] (tonnes)	Treatment (tonnes)	Transfer/ Storage (tonnes)	Landfill (tonnes)	Total Quantity of Waste Managed (tonnes)
Dudley	17,000	*	19,000	21,000	57,000
Sandwell	33,000	34,000	33,000	0	100,000
Walsall	33,000	122,000	31,000	0	187,000
Wolverhampton	*	0	21,000	0	21,000
Black Country	**83,000**	**156,000**	**104,000**	**21,000**	**365,000**

Source: Environment Agency Hazardous Waste Data Interrogator 2007. Entries with * indicate negligible inputs, too low to round to the nearest 1,000 tonnes.

A2.27 This indicates that re-use, recovery and treatment capacity is around 239,000 TPA. The BCWPS estimate of hazardous waste treatment capacity (around 277,000 TPA) is slightly higher than this. However, there is still a surplus of hazardous waste management capacity in the Black Country and no capacity gap is evident (other than for management of contaminated soils),

[12] Almost all of this relates to re-use, but data includes some incineration with recovery (incineration without energy recovery is negligible).

even with the lower estimate for 2007 above. This therefore makes no difference to the overall waste management requirement.

A2.28 As the Waste Planning Study has noted (see Section 3.3.4), a high proportion of the hazardous waste treated in the Black Country is handled at a few very large facilities which handle mostly either liquid wastes or WEEE (e.g. the Veolia facility in Aldridge, Walsall and the Biffa Wednesbury Treatment Centre in Sandwell). There is also a major battery recycling facility in Darlaston in Walsall (G&P Batteries). These facilities are all identified as strategic waste management sites on the Waste Key Diagram.

A2.29 There are currently no facilities in the Black Country for the storage, treatment and remediation of contaminated soils, although there are companies based in the Black Country that specialise in, or can arrange, in situ treatments. This is a major gap in treatment capacity highlighted in the RSS Phase 2 Revision Preferred Option. Appendix 4 explains the background to this and how it will be addressed.

Waste Transfer Capacity

A2.30 Estimates of waste transfer capacity for each waste stream (excluding Household Waste Recycling Centres) are included in Table 3.16 of the BCWPS. Unfortunately, the total capacity figure given in the BCWPS is incorrect – total transfer capacity including hazardous should be 1,196,332 tonnes not 1,152,808 tonnes as stated.

A2.31 The new regional waste capacity database includes updated estimates of waste transfer capacity for the Black Country authorities. The Black Country WDAs have also provided separate information about the capacity of Municipal waste transfer facilities. Table WA2.i below summarises the information obtained from these sources.

Table WA2i: Update of Waste Transfer Capacity in the Black Country by Waste Stream, Facility Type and WPA, March 2009

Facility Type	Capacity (tonnes per annum)					Baseline Info Date
	Dudley	Sandwell	Walsall	W'ton	Black Country Total	
MSW – Transfer	10,000	15,000	120,000	9,000	145,000	Mar 2009
C&I	126,000	319,000	135,000	159,000	740,000	Mar 2009
CD&EW	0	174,000	0	18,000	192,000	Mar 2009
Hazardous	5,000	24,000	5,000	27,000	61,000	Mar 2009
TOTAL	**636,000**	**532,000**	**305,000**	**213,000**	**1,137,000**	Mar 2009

Sources: MSW - Black Country Waste Disposal Authorities/ Defra Municipal Waste Data 2007/08; Other - West Midlands Regional Waste Capacity Database (September 2009) (based on Environment Agency 2007 RATS database)

A2.32 This suggests that waste transfer capacity is lower than the total capacity estimated in Table 3.16 of the BCWPS.

Landfill Capacity

A2.33 Table 3.20 of the BCWPS summarises existing landfill capacity in the Black Country. This is based on the results of a regional survey of landfill capacity undertaken in March 2007 by Scott Wilson. This survey was "refreshed" during 2009, and the revised results are summarised in Table WA2j below. The table also provides an estimate of capacity in tonnes, and an estimate of annual throughput capacity in tonnes, based on inputs into sites permitted by the Environment Agency during 2007.

Table WA2j: Update of Landfill Capacity and Annual Throughput of Landfill Sites in the Black Country by Waste Type, March 2009

Waste Type	Estimated Capacity		Estimated Annual Throughput		Estimated Years' supply
	m^3	Tonnes	m^3	Tonnes	
Non-Hazardous	11,530,000	1,153,000	-	1,140,000	10.1
Inert Only	300,000	450,000	-	25,000	18.0

Source: West Midlands Regional Landfill Capacity Survey "refresh" 2009, Scott Wilson, Environment Agency RATS database 2007.

A2.33 There has been a significant increase in capacity since 2007, largely due to two new facilities coming forward and becoming operational: a new site

at Highfields South in Walsall, and a new phase of Edwin Richards Landfill Site in Sandwell. The information in the above table is therefore more accurate and up-to-date than the information presented in Table 3.20 of the BCWPS.

Appendix 3

Update of Waste Management Data

Municipal Waste Management

A3.1 Table 3.2 of the BCWPS summarises how MSW was managed in the Black Country in 2005/05 and 2006/07, which were the latest years for which data was available at the time the study was prepared. Since then Defra have published data for 2007/08 and 2008/09,[13] which came out too late to influence the study.

A3.2 The study also did not include a breakdown of MSW management by WPA for 2006/07. However, information for 2006/07 – 2008/09 is readily available in the Municipal waste data tables on the Defra website. Data for the Black Country Authorities for the years 2006/07 – 2008/09 is reproduced in Tables WA3a - WA3c below.

Table WA3a: Municipal Waste Management in the Black Country 2006/07

Method	Dudley		Sandwell		Walsall		W'ton		Black Country Total	
	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%
Landfill	22,204	15	96,035	68	94,702	66	25,391	17	238,332	41
Incineration with EfW	85,151	59	16,663	12	13,372	9	90,939	62	206,125	36
Incineration without EfW	16	0	0	0	0	0	110	0	126	0
Recycled/ Composted	36,507	25	27,552	20	36,431	25	30,367	21	130,857	23
Other	5	0	0	0	0	0	0	0	5	0
TOTAL	**143,883**		**140,250**		**144,505**		**146,807**		**575,445**	**100**

Source: Defra Municipal Waste Statistics 2006/07. Percentages may not add up to 100% exactly due to rounding.

[13] MSW data for 2008/09 is expected to be published in November 2009.

Table WA3b: Municipal Waste Management in the Black Country 2007/08

Method	Dudley		Sandwell		Walsall		W'ton		Black Country Total	
	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%
Landfill	22,239	15	93,424	66	61,841	45	31,522	22	209,026	37
Incineration with EfW	80,441	55	14,720	10	35,878	26	75,352	53	206,391	36
Incineration without EfW	21	0	0	0	0	0	65	0	86	0
Recycled/ Composted	43,027	29	34,360	24	40,663	29	35,477	25	153,527	27
Other	0	0	0	0	0	0	0	0	0	0
TOTAL	**146,729**		**142,504**		**138,382**		**142,417**		**569,030**	**100**

Source: Defra Municipal Waste Statistics 2007/08. Percentages may not add up to 100% exactly due to rounding.

Table WA3c: Municipal Waste Management in the Black Country 2008/09

Method	Dudley		Sandwell		Walsall		W'ton		Black Country Total	
	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%
Landfill	22,699	16	77,475	56	57,753	44	16,609	12	174,536	32
Incineration with EfW	76,732	52	25,987	19	29,516	23	77,701	57	209,936	38
Incineration without EfW	21	0	0	0	0	0	63	0	84	0
Recycled/ Composted	46,734	32	35,949	26	42,985	33	42,417	31	168,085	30
Other	0	0	0	0	0	0	0	0	0	0
TOTAL	146,186		139,411		130,254		136,790		552,641	

Source: Defra Municipal Waste Statistics 2008/09. Percentages may not add up to 100% exactly due to rounding.

A3.3 This shows that Municipal waste arisings in the Black Country are continuing to fall, particularly in Walsall. If future monitoring shows that this trend is continuing, projected waste arisings at 2025/26 (see Table WM1b of Appendix 6 to the publication document) will have been significantly over-estimated, and future waste treatment requirements may have to be adjusted accordingly.

C&I Waste Management

A3.4 Data on C&I management is not available at WPA level. It is still the case that the EA 2002/03 C&I survey provides the latest information on methods of managing C&I, and this only provides information on management for the West Midlands Metropolitan area as a whole (see Table 3.4 of the BCWPS).

A3.5 However, analysis of inputs into licensed commercial facilities from the EA RATS data gives a broad indication of management methods. The latest data set available is for 2007, from the EA Waste Data Interrogator/ West Midlands Regional Waste Capacity Database and the inputs by facility type (rounded to the nearest 1,000 tonnes) are set out in Table A4.3 below. There are some caveats attached to this data, as some inputs of Municipal waste into commercial landfill, transfer and treatment facilities are undoubtedly included.

Table WA3d: Inputs of Waste at Licensed Commercial Waste Management Facilities in the Black Country 2007 by Facility Type

Facility Type	Dudley		Sandwell		Walsall		W'ton		Black Country Total	
	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%	Tonnes	%
Landfill	313,000	53	111,000	7	456,000	56	0	0	880,000	27
Transfer	113,000	19	491,000	31	140,000	17	186,000	58	931,000	28
Recovery/ Treatment	168,000	28	967,000	62	218,000	27	134,000	42	1,487,000	45
TOTAL	**594,000**		**1,570,000**		**814,000**		**320,000**		**3,298,000**	

Source: Environment Agency Waste Data Interrogator, 2007. Due to rounding, totals may not add up to the sum of the inputs.

A3.6 This suggests that less than 30% of waste managed in the Black Country at commercial facilities is sent to landfill and that around 45% is recovered or treated. However, there are wide variations between the authorities, with a significantly higher proportion of waste managed in Dudley and Walsall sent to landfill compared to waste managed in Sandwell. There

are no licensed landfill facilities in Wolverhampton, hence no waste managed in Wolverhampton is sent to landfill.

CD&EW Management

A3.7 Table 3.7 of the Waste Planning Study sets out the most up-to-date information on CD&EW management, and no new data is available.

Hazardous Waste Management

A3.8 The Black Country Waste Planning Study summarises hazardous waste arisings in the Black Country by fate in Table 3.9 – this is a slightly modified version, giving the total arisings figures. The component figures exclude storage, rejected waste and incineration without recovery.

Table WA3e: Management of Hazardous Waste Arising in the Black Country 2006

Authority	Treatment/ Recovery* (tonnes)	Transfer (tonnes)	Landfill (tonnes)	Total Arisings (tonnes)
Dudley	16,803	5,190	16,013	**38,012**
Sandwell	42,202	9,151	5,867	**57,268**
Walsall	38,602	6,885	879	**46,366**
Wolverhampton	14,203	23,355	12,372	**49,930**
Black Country	**111,809**	**44,581**	**35,131**	**191,576**
% of Total Arisings	**58%**	**23%**	**18%**	

Source: EA Hazardous Waste Interrogator 2006

* Includes re-use, incineration with energy recovery and treatment

A3.9 The 2007 Hazardous Waste Interrogator was not available at the time the Study was prepared but has become available since then. The table below summarises hazardous waste management in 2007 by fate for comparison with the above. Total figures also exclude storage, waste rejected and incineration without recovery.

Table WA3f: Management of Hazardous Waste Arising in the Black Country 2007

Authority	Treatment/ Recovery* (tonnes)	Transfer (tonnes)	Landfill (tonnes)	Total Arisings (tonnes)
Dudley	17,774	8,006	7,951	**34,420**
Sandwell	30,107	14,032	2,470	**48,198**
Walsall	37,619	8,128	559	**47,135**
Wolverhampton	22,659	10,491	8,450	**41,670**
Black Country	**108,159**	**40,657**	**19,430**	**171,423**
% of Total Arisings	**63%**	**24%**	**11%**	

Source: EA Hazardous Waste Interrogator 2007

* Includes re-use, incineration with energy recovery and treatment

Appendix 4

Update of Waste Capacity Gaps

A4.1 This Appendix summarises how the Black Country Authorities have reviewed the evidence in the BCWPS on waste capacity gaps, taking into account:

- Updated estimates of waste management capacity (see Appendix 2);
- New waste treatment capacity implemented between April 2008 and March 2009 (see below);
- Capacity in the pipeline (see below);
- Capacity known to have been lost between April 2006 and March 2009 (see below);
- Revised estimates of capacity at risk from loss due to proposed changes of use within the growth network (see Appendix 5);
- Updated evidence for contaminated soil management requirements (see Appendix 6);
- Evidence for future waste transfer requirements (see below).
- Evidence for future landfill requirements (see below).

A4.2 This evidence has been used to provide revised estimates of the capacity gaps for each waste stream/ type, which are reflected in the future waste management requirements in Table 17 of Policy WM1.

Waste Capacity Implemented April 2008 – March 2009

A4.3 The BCWPS took into account new MSW and C&I waste treatment infrastructure implemented since the baseline date of the capacity data. This has now been updated to April 2009 using information from AMRs. The following strategic waste treatment facilities were implemented between April 2006 and March 2009:

- Greenstar (MRF), Walsall = approx. 250,000 TPA[14]
- Credential (tyre shredder), Walsall = approx. 50,000 TPA
- Foreman Recycling (MRF), Walsall = approx. 62,000 TPA

A4.4 The capacity of the above facilities has been included in the revised Black Country waste management capacity estimates (see Table W4 above and Table WA2f of Appendix 2), as they are all included within the West Midlands Regional Waste Capacity Database (September 2009).

New Waste Capacity in the Pipeline

A4.5 Waste capacity gaps should only discount what has been implemented since the BCWPS baseline data and should not include proposals in the pipeline as indicated in BCWPS Tables 4.8 and 4.24. Therefore, the review of capacity gaps has excluded capacity to be provided through new proposals in the pipeline. The future requirements in Table 18 of Policy WM1 reflect the actual gaps identified at April 2009. Proposals in the pipeline are included as strategic proposals (where appropriate) and have been taken into account in the residual gaps summarised in Table 19 of Policy WM3.

[14] Although this is a merchant facility and is recorded as a transfer facility in the West Midlands Regional Waste Capacity Database, it is in fact a MRF handling almost exclusively MSW. It is therefore regarded as a MSW treatment facility.

Waste Management Capacity Lost April 2006 – March 2009

A4.6 Although known losses were taken into account in the BCWPS analyses, this evidence has since been reviewed and updated. Table WA4 below summarises the facilities/ capacity known to have been lost between April 2006 and March 2009 and how these losses have been factored into the capacity gaps and future waste management requirements.

Table WA4a: Strategic Waste Management Capacity Lost in the Black Country April 2006 – March 2009

Waste Stream	Facility/ Location	Capacity	WPA	Action Taken
C&I	AWM Group (MRF), Hickman Avenue, Wolverhampton	85,000 TPA	W'ton	Has a lawful planning use for waste and is not at risk of being lost to change of use. It is suitable for an alternative waste use and is identified as a strategic site under Policy WM2, and therefore does not affect capacity gap.
C&I	Green Biodiesel, Coppice Side, Brownhills	40,000 litres per annum (TPA not known)	Walsall	Not included in C&I waste capacity estimate as unable to quantify capacity in TPA, therefore loss does not affect capacity gap.
Transfer	AWM Group, Budden Road, Coseley	18,000 TPA	Dudley	Within RC9 and was already at "high risk" of being lost as it was in an area proposed for change to housing. The capacity lost has been included in the overall requirement for waste transfer capacity in Table 17.

Waste Management Capacity at Risk of Loss

A4.7 As well as actual recent losses, capacity gaps need to make allowance for existing capacity within the Core Strategy growth network which is at "high risk" of being lost due to proposals to change employment areas to housing, or other known threats. A detailed analysis of facilities at potential risk was undertaken for the BCWPS (see Section 4.3), but this has since been reviewed and updated. Further information about this can be found in Appendix 5. As a result of this, the following capacity at "high risk" of being lost has been added to the capacity gap:

- C&I Waste (MRS) – 245,000 TPA
- Waste Transfer – 121,000 TPA

Review of Contaminated Soil Management Requirements

A4.8 The RSS Phase 2 Revision Preferred Option (December 2007) requires the Core Strategy to give "specific priority" to identifying sites to store, treat and remediate contaminated soils. The BCWPS has attempted to quantify future requirements (see BCWPS Sections 3.6 and 4.5.3), based on past trends for derelict land remediation. At the time the BCWPS was prepared it was assumed that future levels of remediation activity might be higher than what has happened in the past, given the amount of change proposed in the growth network.

A4.9 However, more recent technical work undertaken by the Black Country authorities suggests that this is not likely to be the case. It is now considered that the rate of change within the growth network will largely follow past trends, and is not likely to increase significantly. This suggests that the estimated requirement in the BCWPS is reasonably robust.

A4.10 Appendix 7 outlines the key issues with regard to contaminated soil management. However, it has not been possible to quantify future requirements with any accuracy or identify any specific sites for this purpose in the Core Strategy. As large-scale redevelopment projects within the growth network are likely to be the main source of demand for this type of facility, Table 17 of Policy WM1 proposes that this should be addressed on a corridor by corridor basis.

Review of Future Waste Transfer Requirements

A4.11 The BCWPS did not identify any capacity gaps for waste transfer because there is insufficient information about current/ future needs for this type of facility. However, stakeholders (including the waste disposal authorities) have commented that there is not enough waste transfer capacity in the area, so there is evidence of a deficiency even though it is not possible to quantify it. We know that significant capacity is likely to be lost as a result of changes of use of employment land to housing.

A4.12 The authorities therefore consider that as a minimum, the Core Strategy should seek to replace any capacity which has recently been lost or is likely to be lost. This is addressed in Table 17 of Policy WM1 which sets an overall requirement for 150,000 TPA of new waste transfer capacity to be provided in the Black Country up to 2026, reflecting capacity recently lost/ at "high risk" of being lost to changes of use (see Tables WA4a and WA4b above).

Review of Future Landfill Requirements

A4.13 National policy guidance advises that although it should be regarded as the "last option," waste disposal should be adequately catered for (PPS10, paragraph 3). Where suitable voids are available and are likely to come forward in the future – as is the case in the Black Country – the Core Strategy should identify existing and potential new capacity. Due to the relatively limited number of sites, only aggregated data can be presented on waste

disposal capacity to minimise the risk of disclosing commercially sensitive information. It is therefore necessary to consider final disposal at a sub-regional issue rather than at individual waste planning authority level.

A4.14 Table 3.27 of the BCWPS indicated that existing and projected landfill capacity was only likely to last 16 years (i.e. until 2022/23, based on a January 2007 baseline date for capacity information). This suggests that additional capacity may need to be identified towards the end of the plan period if landfilling does not reduce significantly over and above existing targets and assumptions.

A4.15 However, a review of the data presented in Table 3.27 suggests that assumptions about future landfill capacity requirements should reflect the updated RSS diversion rates/ maximum landfill allowances rather than previous management practice, as is assumed in the BCWPS. The future waste disposal requirements set out in Policy WM1 are therefore based on the following assumptions.

A4.16 It is assumed that MSW and C&I waste will be the main user of non-hazardous landfill capacity and that CD&EW will be the main user of inert landfill capacity (although it is recognised that inert waste can be tipped into both types of site). The baseline for the evidence on landfill capacity is April 2009 (i.e. the most recent “refresh” of the regional landfill capacity study). The baseline for the projected requirements is the RSS maximum MSW and C&I landfill requirements set out in the RSS Phase 2 Revision Preferred Option, Tables 5 and 6, updated to 2006/07 by the BCWPS.

A4.17 For MSW and C&I waste, it is assumed that the total landfill capacity requirement for the Black Country to 2026 will be:

Annual RSS MSW and C&I average requirement (= baseline maximum landfill allowance + projected 2025/26 maximum allowance[15]) x number of years remaining from capacity data baseline.

The results are summarised in Table WA4b below.

Table WA4b: Annual Requirement for MSW and C&I Landfill Capacity in the Black Country to 2026

Waste Stream	RSS Max Allowances (tonnes)		Sum of 2006/07 and 2025/26 Allowances (TPA)	Annual Average (mean) (TPA)
	2006/07 Baseline (TPA)	2025/26 Requirement (TPA)		
MSW	185,317	119,303	304,620	152,310
C&I	578,200	610,750	1,188,950	594,475
Total	**763,517**	**730,053**	**1,493,470**	**746,785**

Source: BCWPS Tables 4.3 and 4.15

A4.18 Therefore, the maximum landfill capacity requirement for MSW and C&I waste in the Black Country to 2025/26 is:

MSW 152,310 tonnes +
C&I 594,475 tonnes
Total 746,785 x 17 years (2009/10 – 2025/26)

= MSW: 2,589,270 tonnes
C&I: 10,106,075 tonnes
Total: 12,695,345 tonnes

A4.19 There are no maximum capacity requirements for hazardous waste or CD&EW disposal in the RSS. However, the following factors suggest that disposal requirements for CD&EW should be kept to a minimum, and that no provision need be made for hazardous waste final disposal:

[15] See Tables 4.6 and 4.15 of WPS

- The national waste strategy target to halve the amount of CD&EW going to landfill by 2012 (from a 2005 baseline);

- There is currently no final disposal capacity for hazardous waste residues in the Black Country;

- There is no evidence demonstrating that existing or potential landfill voids in the Black Country are suitable to accept hazardous waste residues;

- There is no requirement in the RSS or in the RSS Phase 2 Revision for the Black Country to bring forward final disposal capacity for hazardous waste residues.

A4.20 The BCWPS assumed that future CD&EW management would be in line with existing (2006/07 baseline) practice (see Table 4.26). It is assumed that the landfill requirement will be around 250,000 tonnes. However, to reflect the national target, the requirement for landfill should be reduced by 50% at least. This would give an annual requirement of around 125,000 tonnes, and a total requirement to 2026 of 125,000 x 17 years (2009/10 – 2025/26) = 2,125,000 tonnes.

A4.21 Based on the analysis above, the capacity gaps for non-hazardous and inert landfill provision are summarised in Table WA4c below and are reflected in Table 17 of Policy WM1. This appears to indicate a long-term capacity gap in each case. However, there is likely to be sufficient provision for both inert and non-hazardous waste disposal for at least the next 10 years, given that there are other potential management options for inert wastes such as disposal to land or use for restoration under exemptions. There are also landfill proposals in the pipeline (planning obligated mineral working sites) which should be able to address these gaps and may even provide a surplus of capacity. Those likely to be implemented within the plan period are identified as strategic proposals in Policy WM3.

Table WA4c: Future Non-Hazardous and Inert Landfill Capacity Requirements in the Black Country to 2026

Site Type	Waste Stream(s)	Existing Capacity (tonnes)	Average Annual Req. (tonnes)	Total Future Req. 2009 - 2026 (tonnes)	Capacity Gap
Non-Hazardous	MSW, C&I	11,530,000	747,000	12,699,000	-1,169,000
Inert Only	CD&EW	300,000	125,000	2,125,000	-1,825,000

Source: West Midlands Regional Waste Capacity Database (September 2009)

A4.22 Due to time and resource constraints it has not been possible to review the detailed results of the "refreshed" capacity study undertaken by Scott Wilson for WMRA in 2009, although it is noted that Scott Wilson considered three different scenarios which may have come up with different requirements for the Black Country authorities. Landfill capacity and management methods across all waste streams will need to be kept under review. If necessary new landfill or land raising capacity may be identified in future DPDs.

Appendix 5

Existing Waste Management Facilities in the Black Country: Capacity of Strategic Sites and Revised Risk Assessment

What is a Strategic Site?

A5.1 A common definition of a "strategic site" was agreed at a planning officer workshop in February 2009, organised by Atkins as part of the BCWPS. This was developed from a draft definition originally prepared by Walsall Council. The agreed definition was then incorporated (with minor changes) into the Policy Justification to Policy WM2.

A5.2 The agreed definition is as follows:

- All facilities that form a vital part of the Black Country's Municipal Waste management infrastructure, e.g. Energy from Waste Plants, Waste Transfer Facilities, HWRCs, Depots;

- All commercial waste management facilities that fulfil more than a local role, e.g. they are part of a nationwide or regional operation linked to other facilities elsewhere, and take in waste from all over the Black Country and/ or beyond;

- All commercial facilities specialising in a particular waste stream or waste management technology, of which there are no others, or very few others, of the same type operating elsewhere in the Black Country;

- All existing or proposed open gate landfill facilities, which are likely to fulfil more than a purely local role given the shortage of such facilities nationally;

- All facilities likely to make a significant contribution towards existing waste management capacity, such as:
    - Recovery/ treatment/ processing facilities with an annual throughput capacity of 50,000 TPA +
    - Waste transfer/ ancillary facilities with an annual throughput capacity of 20,000 TPA+

Identification of Strategic Waste Management Sites

A5.3 One of the key elements of Policy WM2 is to protect the capacity of "strategic sites." The reason for this is that the "strategic sites" are mainly very large facilities which provide a very high proportion of the Black Country's total waste management capacity.

A5.4 The "strategic sites" definition assumes that all MSW facilities are "strategic sites," so 100% of MSW capacity is included within such sites. The WM2 Policy Justification notes that a very high proportion of licensed commercial waste treatment and transfer capacity is also accounted for by "strategic sites" as is demonstrated by Tables WA5a and WA5b below.

Table WA5a: Licensed Waste Treatment Facilities – Total Throughput and Throughput at "Strategic Sites" in 2007

Waste Stream	Total Number of Operational Licensed Facilities	2007 Total Throughput (tonnes)	Number of Operational Licensed "Strategic Sites"	2007 "Strategic Sites" Throughput (tonnes)	% Capacity in Licensed Strategic Sites 2007
MSW	2	200,000	2	200,000	100.0%
Commercial – Non-MRS	*25*	*418,000*	*11*	*394,000*	*94.3%*
Commercial – MRS	*110*	*1,062,000*	*9*	*875,000*	*82.4%*
Commercial – Total	135	1,480,000	20	1,269,000	85.7%

Source: Environment Agency RATS Database/ Waste Data Interrogator 2007

Table WA5b: Licensed Waste Transfer Facilities – Total Throughput and Throughput at "Strategic Sites" in 2007

Waste Stream	Total Number of Operational Licensed Facilities	2007 Total Throughput (tonnes)	Number of Operational Licensed "Strategic Sites"	2007 "Strategic Sites" Throughput (tonnes)	% Capacity in Licensed Strategic Sites 2007
MSW*	5	129,000	5	129,000	100.0%
Commercial	62	931,000	20	701,000	75.3%

Source: Environment Agency RATS Database/ Waste Data Interrogator 2007

* This includes MSW transfer facilities only and excludes HWRCs and depots.

A5.5 For consistency, the above analysis of capacity on "strategic sites" is based on a common data set, the Environment Agency's RATS database for 2007 (the same data set is also available as the Waste Data Interrogator 2007). This means that annual throughput has been used as a proxy for capacity. However, a similar analysis was also undertaken at the same time using data from the West Midlands Regional Waste Capacity Database, and the results were similar ("strategic sites" were around 80% of commercial treatment capacity and around 73% of commercial transfer capacity).

Risk Assessment of Waste Management Sites

A5.6 As Figure W5 of the main Background Paper shows, the existing pattern of waste management facilities across the Black Country broadly reflects the distribution of employment land within the growth network. In parts of the Black Country there is already pressure to change employment land to housing.

A5.7 Even where they are not directly affected by redevelopment, employment uses can be compromised by housing developed in close

proximity if it is not designed and sited so as to minimise potentially harmful effects.

A5.8 Although the Core Strategy proposes that many employment areas will be retained in the long-term, others are proposed to change to housing. The introduction of housing into these areas must be carefully managed if it is not to create conflicts between competing uses. These issues are addressed by Policy DEL2. Without these provisions, existing businesses may be forced to close prematurely and/ or without being relocated or replaced, with consequent loss of jobs. If this happens to a waste management facility, it may have wider implications as it could also result in a net loss in capacity.

A5.9 At the beginning of the process, the relationship between the existing waste management facilities and the Core Strategy proposals was not fully understood, and there were concerns that the proposed changes might lead to the loss of important waste management facilities. The authorities therefore agreed that there was a need to consider the potential risks to individual sites and to overall waste management capacity.

A5.10 A risk assessment methodology was developed out of a draft framework prepared by Wolverhampton City Council. This was "tested" by undertaking preliminary assessments of sites in Walsall and Wolverhampton. The methodology was further refined over the course of several months during 2008, in the light of this experience. The final methodology included three categories of potential risk, as follows:

- **High Risk** - facility would be lost as a direct result of a Core Strategy proposal or planning permission and there is little prospect of retention if the proposal goes ahead;

- **Medium Risk** - facility is at some risk of being lost due to a Core Strategy designation, but there is some prospect that it could be retained;

- **Low Risk** - facility is not at risk from Core Strategy proposals or any other identified factors.

A5.11 For consistency (and after much trial and error!) it was agreed that to determine the relative risk to overall capacity, a consistent set of capacity data or throughput data needed to be used. The early assessments had not used a consistent data set, which meant that the results could not be regarded as robust. Unfortunately, the analysis of facilities at potential risk undertaken for the BCWPS (see Section 4.3) was done before the data issues had been resolved, so the results of this cannot be regarded as reliable either.

A5.10 Even if this was not the case, it would have been necessary to revise and update the assessment in the light of changes to the Black Country Assessment of Employment Sites Study (2009) by GVA Grimley, which was not completed until after the BCWPS was finalised. The latter study has provided further guidance on employment areas and site recommendations, and has resulted in changes to the proposals for some of the employment areas. This has in turn altered the risk category of some of the waste management sites, and has resulted in a reduction in the capacity at "high risk."

A5.11 The most recent risk analysis undertaken by the authorities has focused on the capacity of existing "strategic" waste management sites only (see Chapter 4 of the Waste Background Paper), as time constraints did not allow the authorities to assess the revised risk to every existing waste management site in the Black Country. As the section above shows, "strategic sites" include a very high proportion of total capacity, so this was considered appropriate and proportionate.

A5.12 The revised summary of capacity at "high risk" of being lost to changes of use is summarised in Tables WA5c and WA5d below. Table WA5e following provides a summary of the sites/ capacity at risk and how these

potential losses have been factored into the Core Strategy capacity gaps and waste management requirements.

Table WA5c: Strategic Waste Management Sites – Treatment Capacity at "High Risk"

Waste Stream	Number of Operational Licensed "Strategic Sites"	2007 "Strategic Sites" Throughput (tonnes)	Number of Operational Licensed "Strategic Sites" at High Risk	2007 "Strategic Sites" Throughput at High Risk (tonnes)
MSW	2	200,000	0	0
Commercial – Non-MRS	*11*	*394,000*	*0*	*0*
Commercial – MRS	*9*	*875,000*	*1*	*245,000*
Commercial – Total	20	1,269,000	1	245,000

Source: Environment Agency RATS Database/ Waste Data Interrogator 2007

Table WA5d: Strategic Waste Management Sites – Transfer Capacity at "High Risk"

Waste Stream	Number of Operational Licensed "Strategic Sites"	2007 "Strategic Sites" Throughput (tonnes)	Number of Operational Licensed "Strategic Sites" at High Risk	2007 "Strategic Sites" Throughput at High Risk (tonnes)
MSW*	5	129,000	0	0
Commercial	20	701,000	5	121,000

Source: Environment Agency RATS Database/ Waste Data Interrogator 2007

* This includes MSW transfer facilities only and excludes HWRCs and depots.

Table WA5e: Strategic Waste Management Sites/ Capacity in the Black Country at "High Risk"

Waste Stream	Facility/ Location	Capacity	WPA	Action Taken
MSW	The Leys Depot Dudley	-	Dudley	Table 18 Policy WM1 includes a requirement to identify replacement depot site in Walsall and new satellite depot site in Dudley.
MSW	North Walsall Depot	-	Walsall	
C&I	One MRS in Rowley Regis	245,000 TPA	Sandwell	Does not affect overall C&I treatment gap, as the capacity to be lost is MRS.
CD&EW	One CD&EW recycling facility in Bilston	Not known	W'ton	Table 18 Policy WM1 includes a requirement for a new CD&EW facility to be provided in W'ton to replace this.
Transfer	Four waste transfer facilities in various locations	140,000 TPA	Dudley, Sandwell, W'ton	Table 18 Policy WM1 includes an overall requirement for approximately 150,000 TPA of transfer capacity to be provided to replace capacity recently lost or at "high risk" of loss.

A5.13 In adjusting the capacity gap, we have focused on capacity which is at "high risk" as sites at "medium risk" need not necessarily be lost. The WM2 Policy Justification explains how each authority will be expected to manage impacts on "medium risk" sites, and address further losses of capacity, whether these occur as a result of their own LDF proposals or for other reasons.

Appendix 6

Waste Management Sites:
Assessment Framework and Results of Assessment

Table WA6a: Black Country Core Strategy: Potential Strategic Sites, Broad Locations and Requirements for Waste Management @ April 2009 (excluding RELS sites)

Site/ Location	Authority	When Put Forward?	Who Put Forward?	Suggested Facilities	Potential Additional Capacity	Initial Assessment
-	Not specified	Through RSS Phase 2 Revision	WMRA	Facilities to store, treat and remediate contaminated soils	Not known	Not a specific site but an identified need for particular type of facility. It should be included as a specific need (Policy WM1 and WM3).
Aldridge	Walsall	Initial consultation	Pheasey & Park Hall Local Consultation	New technologies (may not necessarily have meant waste). Large employment area which already includes Greenstar, Interserve, Veolia and Merchants Way HWRC (see below)	Not known	Large free-standing retained employment area with several waste facilities present, which could easily accommodate further facilities. Likely to be a suitable broad location for waste management uses (Policy WM3).
Aldridge Quarry	Walsall	Preferred Options	Walsall Council	Inert landfill	750,000 (total) 150,000 (TPA)	Existing commitment – approved restoration scheme and permit for landfill (Policy WM1)
Anchor Lane, Wolverhampton	Wolverhampton	Meeting 20/5/08 and subsequent discussions	Wolverhampton City Council	Existing HWRC – retain/ protect	None	This is an essential part of W'ton City Council's MSW infrastructure and should be protected as a strategic site (Policy WM2).
Atlas Clay Pit	Walsall	Preferred Options	Walsall Council	Non-Hazardous landfill	Not known	Planning obligated landfill site – mineral working site with condition requiring restoration. However, significant reserves so unlikely to come forward within the plan period (Policy WM1)

Site/ Location	Authority	When Put Forward?	Who Put Forward?	Suggested Facilities	Potential Additional Capacity	Initial Assessment
Bentley Road South, Darlaston	Walsall	Email 5/4/07	EMR	Existing MRS, ELV and WEEE facility – retain/ protect	None	Very large MRS forming part of a network of facilities operated by EMR with potential for rail-link. Should be protected as a strategic site (Policy WM2).
Bilston Road/ Cable Street, Wolverhampton	Wolverhampton	Email 5/4/07	EMR	Existing transfer facility/ bring site – retain/ protect	None	Although it is not large, this site should be protected as a strategic site as it is part of a network of facilities operated by EMR (Policy WM2).
Coneygre Road, Tipton	Sandwell	PO	SITA	Existing depot and recycling facility suitable for "enhanced facility"	Not specified	In 2009 there was speculation in the press about the future of the site. However, SITA have confirmed it will be retained as part of their network of facilities. It should therefore be protected as an existing strategic site (Policy WM2).
Crown Road, Wolverhampton	Wolverhampton	Meeting 20/5/08	Wolverhampton City Council	Existing EfW – retain/ protect	None	This is an essential part of W'ton City Council's MSW infrastructure and should be protected as a strategic site (Policy WM2).
Darlaston/ Willenhall	Walsall	Informal discussions	Walsall Council	Aspiration to develop a new HWRC/ Civic Amenity Site to serve SE parts of Walsall Borough in either Darlaston or Willenhall (but not both) if suitable site can be found	None	Not a specific site but an identified need for particular type of facility. It should be included as a specific need (Policy WM1 and WM3).

Site/ Location	Authority	When Put Forward?	Who Put Forward?	Suggested Facilities	Potential Additional Capacity	Initial Assessment
Downing Street, Smethwick	Walsall	Email 5/4/07	EMR	Existing metal recycling and ELV facility – retain/ protect	None	Existing strategic site which should be protected as it is part of a network of facilities operated by EMR (Policy WM2).
Dudley Borough	Dudley	Meeting 20/5/08	Dudley MBC	Satellite Municipal waste depot	None	Not a specific site but an identified need for particular type of facility. It should be included as a specific need (Policy WM1 and WM3).
Dudley Borough - North	Dudley	Meeting 20/5/08	Dudley MBC	New HWRC	None	Not a specific site but an identified need for particular type of facility. It should be included as a specific need (Policy WM1 and WM3).
Edwin Richards/ Rowley Regis	Sandwell	I&O	WRG/ Chris Haynes	WRG - part of MQP Edwin Richards complex considered suitable for material recycling, MBT, EfW (also put forward other parts for mixed uses); Chris Haynes - suggested Rowley Hills as suitable location	Not known	Large area, potentially suitable for a range of facilities – should be considered as a potential new strategic site (Policy WM3).
Former Gulf Oil Depot, Union Road, Oldbury	Sandwell	Email 5/4/08	EMR	Not specified, site has waste management licences and a rail siding but is currently not in use.	Not specified	Site with potential rail access and previous waste management use, which could accommodate various types of facilities – should therefore be considered as a strategic proposal (Policy WM3).

Site/ Location	Authority	When Put Forward?	Who Put Forward?	Suggested Facilities	Potential Additional Capacity	Initial Assessment
Four Ashes (W2R), South Staffordshire	Staffordshire CC (outside BC)	2008	Sandwell MBC and Walsall Council	Proposal for new EfW (current planning application) which will provide approx. 110,000 tonnes capacity for Sandwell and Walsall	110,000 TPA	This isn't in the Black Country so it cannot be included as a proposal. However, as it is a commitment it should be referred to (Policy WM3).
Foxyards Site, Bean Road, Tipton	Dudley	I&O	Biffa	Existing facility – retain/ protect; also has potential for increased capacity and recycling	Not specified	Although it is not large, this site should be protected as a strategic site as it is part of a network of facilities operated by Biffa (Policy WM2).
Fryers Road, Leamore	Walsall	Informal discussions, meeting 20/5/08	Walsall Council	Existing HRC/ Civic Amenity Site and Transfer Station – retain/ protect	None	This is an essential part of Walsall Council's MSW infrastructure and should be protected as a strategic site (Policy WM2).
Lister Road, Dudley	Dudley	Meeting 20/5/08	Dudley MBC/ Chris Haynes	Dudley MBC – seeking to retain and protect existing EfW; Chris Haynes suggested reuse site	None	This is an essential part of Dudley MBC's MSW infrastructure and should be protected as a strategic site (Policy WM2).
Merchants Way, Aldridge	Walsall	Informal discussions, meeting 20/5/08	Walsall Council	Existing HRC Civic Amenity Site and adjacent depot – retain/ protect	None	This is an essential part of Walsall Council's MSW infrastructure and should be protected as a strategic site (Policy WM2).

Site/ Location	Authority	When Put Forward?	Who Put Forward?	Suggested Facilities	Potential Additional Capacity	Initial Assessment
Mucklow Hill, Halesowen	Dudley	I&O	Chris Haynes	New HRC/ Civic Amenity Site for "south Black Country" to replace Stourbridge and Shidas Lane	None	No such facility is currently being considered in this location by either Dudley MBC or Sandwell MBC. It therefore cannot be included in the Core Strategy.
Neachells Lane, Wolverhampton	Wolverhampton	PO	SITA	Existing waste transfer site suitable for "enhanced facility"	Not known	SITA have confirmed there is scope to expand the facility with a range of treatment options. It should therefore be protected as an existing strategic site (Policy WM2) and considered as a strategic proposal (Policy WM3).
Oak Farm Clay Pit	Dudley	Preferred Options	Dudley MBC	Non-Hazardous landfill	Not known	Planning obligated landfill site – mineral working site with condition requiring restoration. Quarry is mothballed and future uncertain, but operator has indicated that it may come forward within the plan period (Policy WM1)
Pikehelve Eco Park (Hill Top), Wednesbury	Sandwell	M&W Event, I&O, PO	Sandwell MBC	Major new waste infrastructure (MRF, IVC, MBT, potentially others but not EfW)	200,000 TPA	Large area with outline permission for a range of waste management facility types – should therefore be considered as a strategic proposal (Policy WM3).

Site/ Location	Authority	When Put Forward?	Who Put Forward?	Suggested Facilities	Potential Additional Capacity	Initial Assessment
Sandown Quarry	Walsall	Preferred Options	Walsall Council	Non-Hazardous landfill	Not certain	Planning obligated landfill site – mineral working site with condition requiring restoration. Quarry has limited reserves remaining so likely to come forward within the plan period (Policy WM1)
Shidas Lane, Oldbury	Sandwell	Meeting 20/5/08	Sandwell MBC	Existing HWRC/ Civic Amenity Site – retain/ protect	None	This is an essential part of Sandwell MBC's MSW infrastructure and should be protected as a strategic site (Policy WM2).
Shaw Road, Wolverhampton	Wolverhampton	Meeting 20/5/08 and subsequent discussions	Wolverhampton City Council	Existing HWRC – retain/ protect	None	This is an essential part of W'ton City Council's MSW infrastructure and should be protected as a strategic site (Policy WM2).
Stourbridge	Dudley	Meeting 20/4/08	Dudley MBC	Existing HWRC/ Civic Amenity Site – retain/ protect	None	This is an essential part of Dudley MBC's MSW infrastructure and should be protected as a strategic site (Policy WM2).
Talbot Close, Leamore[16]	Walsall	Pre-application discussions, PO	JPE Holdings	Material recovery - waste to Aggregates facility, CHP	Not known	Suitable for waste management use, but uncertainty about its future. Potential new strategic site (Policy WM3).

[16] JPE confirmed on 30/7/08 they are no longer pursuing this proposal.

Site/ Location	Authority	When Put Forward?	Who Put Forward?	Suggested Facilities	Potential Additional Capacity	Initial Assessment
Tipton/ Coseley	Dudley	I&O	Black Country Industrial Mission	Not specified but felt that facilities should be provided "somewhere central" within the Black Country	Not specified	Although much of Tipton is proposed for housing growth, the retained employment areas in Regeneration Corridor 8 could potentially accommodate waste management facilities and could be considered as broad locations (Policy WM4).
Trident Alloys, Fryers Road,[17] Leamore	Walsall	M&W Event, email 30/7/08, planning application	JPE Holdings	Material recovery - waste to aggregates facility and CHP	250,000 TPA	This has planning permission. The operator has confirmed the details and that it is going ahead. It should therefore be considered as a strategic proposal (Policy WM3).
Walsall Borough	Walsall	Informal discussions, meeting 20/5/08	Walsall Council	Replacement Municipal waste depot – new site needs to be identified near to Fryers Road, no specific site identified as yet	None	This is not a specific site but an identified need for particular type of facility. It should be included as a specific need (Policy WM1 and WM3).

[17] JPE confirmed on 30/7/08 they are proposing to develop a new facility on this site (as originally planned) rather than at Talbot Close, which they did at one time consider pursuing instead.

Table WA6b: Assessment of Potential Waste Management Areas and Sites - Criteria and Scoring Framework

CRITERIA	SUB-CRITERIA	INDICATORS	POTENTIAL SCORE	MAXIMUM POSSIBLE SCORE	NOTES ON SCORING	SOURCE OF INFORMATION
Support for Overall Waste Policy/ Strategy	Landfill Diversion and Movement of Waste up the Waste Hierarchy	Mainly involves waste prevention/ minimisation	5	5	Can only allocate one score - choose indicator that best fits	LA knowledge of site and any proposals for it
		Mainly involves re-use of material resources	4			
		Mainly involves recycling/ material recovery/ composting of waste	3			
		Mainly involves energy recovery from waste	2			
		Not clear what impact it will have on landfill diversion and movement of waste up the waste hierarchy	1			
		Mainly involves disposal of waste	0			
	Addressing capacity gaps in the Black Country	Addresses capacity gaps identified in policy WM1	2	5	Can only allocate one score - choose indicator that best fits	LA knowledge of site and any proposals for it
		Suitable for a waste management facility with potential to address capacity gap	1			
		No potential to address capacity gap identified in WM1 / not suitable for waste management facility	0			
Supports Re-Use of Derelict and Previously Developed Land	Derelict land	Includes land on statutory register of contaminated land	1	3	Can score 1 point for each of the indicators that apply, up to a total of 3 points	Contaminated Land Register
		Includes land on NLUD database	1			NLUD Database
		Includes land on RSS / Council derelict land database	1			Derelict Land Database/RELS
	Is it previously-developed land?	Greenfield land	1	2	Can only allocate one score - choose indicator that best fits	Employment Sites Assessment 2009
		Previously developed land	2			LA knowledge of site

Physical and Environmental Constraints	Water resources and flood risk	Not within groundwater source protection zones or areas at risk of flooding	2	2	Can only allocate one score - choose indicator that best fits	Black Country SFRA (2009)
		Within groundwater source protection zone (landfill proposals only)	1			EA Groundwater Source Protection Zones (as shown on Fig 5 of the Black Country Minerals Study 2008)
		Within Flood Zone 2	1			
		Within Flood Zone 3	0			
	Land instability / Ground Risk	Not within an area likely to be affected by land instability, therefore unlikely to be any issues	5	5	Can only allocate one score - choose indicator that best fits	BGS Mineral Resource Data (Nov 2007)
		Remediation works previously carried out, believed to have addressed all instability issues	4			Coal Resource Data (June 2008)
		Within MSA but legacy of previous activities not known	3			Black Country Infrastructure and Delivery Study - Technical Note 6 (July 2009)
		Within MSA or areas identified as having ground risk	2			
		Known stability problems – remediation required	1			RELS
	Prominence	Gateway site to a prominent estate, visible from major road network	5	5	Can only allocate one score - choose indicator that best fits	Employment Sites Assessment 2009
		Visible site, on a main road or prominent estate	4			
		On a main road or prominent estate, tucked away from view	3			
		Visible , on a minor road or estate	2			
		On a minor road or estate, tucked away from view	1			LA knowledge of site
	Visual Intrusion	Unlikely to negatively affect, or impact could be mitigated by design	2	2	Can only allocate one score - choose indicator that best fits	
		Potential to have a negative impact on landscape, e.g. within green belt, area designated for landscape value, gateway locations with little opportunity for mitigation	1			LA knowledge of site and local area / designations

	Nature conservation impacts	No nature conservation designations	3		Can only allocate one score - choose indicator that best fits	BCCS PO SA
		SLINC	2			BC LA UDP's
		Wildlife Corridor	2			
		SINC	1			
		SSSI	0			
		NNR	0			
		Ancient Woodland	0			
		Protected species known to be present	0			
		SAC	-1			
		More than one national designation	-1	3		
	Historic environment and built heritage impacts	No historic environment designations	3		Can only allocate one score - choose indicator that best fits	BCCS PO SA
		Building or structure on 'local list'	2			BC LA UDP's
		HERS record of archaeological remains likely to require evaluation	1			BC LA Registers of historic assets (e.g. Listed buildings, Conservation Areas, etc)
		Scheduled Ancient Monument or HERS record of nationally important archaeological remains	0			
		Listed Building	0			
		Conservation Area	0			
		Registered Park or Garden	0			
		More than one national designation	-1	3		
	Air quality - potential for breaching standards	Within AQMA for NO_2 only	3		Can only allocate one score - choose indicator that best fits	Black Country Infrastructure and Delivery Study - Technical Note 11 (July 2009)
		Within AQMA for NO_2 and also within AQMA declared for other pollutants	2			BC LA Air Quality reports
		Within AQMA for NO_2 and also within potential 'hot spot' for other pollutants / areas of exceedance	1	3		
	Cumulative effects - presence of existing waste	No waste management facilities nearby	5	5	Can only allocate one score - choose indicator that	EA RATS Database
		Clean, low impact waste management facilities present nearby (e.g. MRF, HWRC)	4			LA knowledge of site

Cumulative Effects and Potential Amenity Impacts	management uses in the area	Potentially medium impact waste management uses present within the area/ near the site (e.g. MBT, IVC, AD, other non-thermal enclosed treatment)	3		best fits	
		Potentially high impact waste management uses present within the area/ near the site (EfW, pyrolysis, gasification, transfer stations, depots, enclosed CD&EW processing)	2			
		Potentially very high impact waste management uses present within the area (e.g. landfill sites, open windrow composting, scrap yards, open storage, open air CD&EW processing)	1			
	Potential for land use conflict	Not near or adjacent to any sensitive uses	5			JCS Publication Document
		Adjacent to existing/ proposed community, sports, recreational or retail facilities (including parks, playing fields, canals and allotments)	4			BC LA UDP's
		Adjacent to existing/ proposed hospital, health centre or other health care facilities	3			
		Adjacent to existing/ proposed schools or other education facilities	2		Can only allocate one score - choose indicator that best fits	
		Adjacent to existing/ proposed residential area	1			
		Adjacent to or near to more than one type of sensitive area	0	5		LA knowledge of site
Ownership Constraints	Type of Land Owner(s) (where known)	Waste / Mineral operator	5			
		Local authority	4			
		Regeneration company	3		Can only allocate one score - choose indicator that best fits	LA knowledge of site
		Business or utility	2			
		House builder	1			
		Other/ owner not known	0	5		RELS
	Known Ownership Constraints	No known constraints	2		Can only allocate one score - choose	LA knowledge of site
		Constraints but can potentially be overcome	1			
				2		
		Constraints but unlikely to be overcome or unclear	0			

		whether they can be overcome			indicator that best fits	
	Availability for Development	Yes - advertised as being available, or no obvious restrictions to immediately develop the site	2	2	Can only allocate one score - choose indicator that best fits	Employment Sites Assessment 2009
		No - site is not immediately available	1			RELS
Economic Constraints	Market Activity	Yes - Evidence of recent development in immediate surrounding area	2	2	Can only allocate one score - choose indicator that best fits	Employment Sites Assessment 2009
		No - no evidence of recent development	1			RELS
	Market Attractiveness	Attractive to national companies	3	3	Can only allocate one score - choose indicator that best fits	Employment Sites Assessment 2009
		Attractive to sub-regional companies	2			LA knowledge of site
		Attractive to local companies	1			
	Economic Constraints	No obstacles to development	5	5	Can only allocate one score - choose indicator that best fits	Employment Sites Assessment 2009
		Minor obstacles to development, relatively easy, quick and cheap to resolve	4			
		Minor obstacles to development, more difficult, expensive and time-consuming to resolve	3			
		Major obstacles to development, very difficult, expensive and time-consuming to resolve	2			RELS
		Major obstacles to development, extremely difficult, expensive and time-consuming to resolve	1			
	Strategic Accessibility	0-5 minutes drive time of motorway network	5		Can only allocate one score - choose indicator that best fits	Employment Sites Assessment 2009
		5-10 minutes drive time of motorway network	4			
		10-20 minutes drive time of motorway network	3			
		20-30 minutes drive time of motorway network	2			
		30 minutes plus drive time of motorway network	1			
	Access Local	Easy site access no issues available public transport	5	5	Can only	Employment Sites

Accessibility and Impact on Transport Network		No access issues for vehicles but no public transport	4		allocate one score - choose indicator that best fits	Assessment 2009
		Easy immediate access but wider issues on link to SHN	3			
		Restricted access for HGVs, restricted access to major road network	2			
		Restricted access for all commercial vehicles, not public transport	1			
	Access	Either adjoining main road or motorway junction with easy site access for all vehicles or access to rail, air and sea networks	5			
		Close to major road network, easy access for all vehicles	4			
		Easy site access for all vehicles, indirect or restricted access to major road network	3		Can only allocate one score - choose indicator that best fits	
		Restricted access for HGVs, restricted access to major road network	2			
		Restricted access for all commercial vehicles, severely restricted access to major road network	1	5		Employment Sites Assessment 2009
	Public Transport	Close to a station, peak time bus route and cycle route; on a pedestrian route	5			
		Close to a station or peak time bus route and cycle route; on a pedestrian route	4			
		Close to either a station or peak time bus route or cycle route; on a pedestrian route	3		Can only allocate one score - choose indicator that best fits	
		Not near a station, peak time bus route or cycle route; on a pedestrian route	2			
		Not on a pedestrian route; not near a station, peak time bus route or cycle route	1	5		Employment Sites Assessment 2009
	Potential for rail or canal freight use	Location identified as having potential for rail freight in the emerging JCS freight policy	3	3	Can only allocate one score - choose indicator that best fits	
		Location included in JCS rail freight and canal freight assessment but not included in emerging JCS policy due to uncertainty.	2			Freight Assessment for JCS (2009)

		Location near or adjacent to a railway line or canal but not included in JCS rail freight and canal freight assessment, so can't rule out possibility.	1			JCS Publication Document
		Not near a railway line or canal, therefore no potential.	0			
Proximity to Source of Waste	Source of Waste	Mainly Black Country households and/ or businesses	5	5	Can only allocate one score - choose indicator that best fits	LA knowledge of site
		Mainly West Midlands Metropolitan area households and/ or businesses	4			
		Mainly households and/ or businesses in the wider West Midlands region	3			
		Waste from anywhere in the UK/ generated by a business with a national network	2			
		Source of waste not known	1			
Suitability for Different Waste Management Uses	Status of Site	Planning permission or lawful use for waste management and a waste management permit or licence	5		Can only allocate one score - choose indicator that best fits	LA knowledge of site
		Planning permission or lawful use for waste management only, no licence or permit	4			BC LA UDP's and AMR's
		UDP waste management allocation	3			Employment Sites Assessment 2009
		Planning permission or lawful use for employment (B1/ B2/ B8)	2			EA RATS Database
		SPD identifying site as having waste management potential	2			
		UDP employment allocation (B1/ B2/ B8) / area	1			
		No lawful use or allocation for waste management or for employment use	0			
	Type of Location	Within JCS retained local employment area.	3	3	Can only allocate one score - choose indicator that best fits	Employment Sites Assessment 2009
		Within JCS existing/ proposed high quality employment area.	2			BC LA UDP's
		Within other area with potential for certain waste facilities (Green Belt, Operational Quarry, Derelict Land, In/ Edge of Centre, In/ Near Residential Area)	1			
		Not within area identified as having potential for waste management	0			

Potential for Co-Location/ Other Spin Offs	Scope for Spin Offs or Benefits from Waste Management	Good potential for significant long-lasting benefits (e.g. energy from biomass)	1			
		Good potential for significant but temporary benefits (e.g. landfill gas generation)	1		Can score 1 point for each of the indicators that apply, up to a total of 5 points	
		Good potential for significant but deferred benefits (e.g. landscape enhancement/ provision of biodiversity and geodiversity improvements through landfill restoration)	1			
		Potential for minor benefits (provision of new high quality buildings and amenity improvements)	1	4		LA knowledge of site
	Are there co-location opportunities?	3 or more waste facilities nearby that offer potential for co-location benefits.	2		Can only allocate one score - choose indicator that best fits	
		1 - 2 waste facilities nearby that offer potential for co-location benefits.	1			
		0 waste facilities nearby.	0	2		EA RATS Database
Other scores from Employment Sites Study	Site Layout	Clear plot, no obstructions	5		Can only allocate one score - choose indicator that best fits	
		Regular shaped plot, obstructed	4			
		Regular shaped plot, fragmented	3			
		Irregular shaped plot, obstructed	2			
		Irregular shaped plot, fragmented	1	5		
	Character of Area	Well established commercial area	5		Can only allocate one score - choose indicator that best fits	
		Established commercial area, with residential or rural nearby	4			
		Mixed commercial and residential area	3			
		Mainly residential or rural area with few commercial uses	2			
		Mainly residential or rural area with no existing commercial uses	1	5		Employment Sites Assessment 2009

Table WA6c: Assessment of Potential Sites for Waste Management Facilities - Results

BC JCS - Waste Sites Assessment					Support for Overall Waste Policy / Strategy		Supports Re-Use of Derelict and Previously Developed Land		Physical and Environmental Constraints							Cumulative Effects and Potential Amenity		Ownership Constraints		Economic Constraints			Accessibility and Impact on Transport Network					Proximity to Source of Waste	Suitability for Different Waste Management Uses		Potential for Co-Location/ Other Spin Offs		Other scores from Employment Sites Study		Score
	Site Name	Corridor ID	BC JCS Employment Land Assessment	Total Site Area (HA)	Landfill diversion and movement of waste up hierarchy	Addressing capacity gaps in the Black Country	Derelict land	Greenfield / Brownfield	Water resources	Land instability	Prominence	Visual intrusion	Strategic Location	Nature conservation impacts	Historic environment and built heritage impacts	Air quality	Cumulative effects	Potential for land use conflict	Type of Land Owner(s)	Known Ownership Constraints	Availability	Market Activity	Market Attractiveness	Economic Constraints	Strategic Accessibility	Access Local (this appears to be the same as Access)	Access	Public Transport	Potential for rail or canal freight use	Source of Waste	Status of Site	Type of Location	Scope for Spin Offs or Benefits from Waste Management	Are there co-location opportunities?	Site Layout	Character of Area	
Dudley	Dreadnought Road / Tansey Green Road	10	PHQ	2.8	1	1	1	2	2	3	3	2	3	2	3	3	5	1	0	2	1	2	3	2	3	3	3	4	3	1	2	2	1	0	3	5	72
	North Of Two Locks Canal Line	11	PHQ	4.0	1	1	1	2	2	3	3	1	3	1	3	3	5	4	0	2	2	1	2	3	2	3	2	3	1	1	2	2	1	0	5	5	70
	Grazebrook Tip	11	PHQ	1.8	1	1	1	2	2	3	3	1	3	2	3	3	5	4	0	2	1	1	2	3	2	3	2	3	1	1	2	2	1	0	5	5	70
	Robinsons Steel	19	PHQ	1.2	1	1	1	2	2	3	3	1	3	3	3	3	5	4	0	2	1	1	2	2	2	3	2	3	0	1	1	2	1	0	5	5	68
	Dreadnought Road	10	PHQ	2.3	1	1	1	2	2	3	3	2	3	2	3	3	5	1	0	2	1	2	3	2	3	3	3	4	3	1	2	2	1	0	3	5	72
	R/O 71-105 Thorns Road	13	LQ	1.9	1	1	0	2	2	3	3	2	2	3	3	3	5	1	0	2	1		2	3	3	3	3	6	0	1	2	3	1	0	3	4	67
	Foxyards	16	LQ	1.7	1	1	0	2	1	3	3	2	4	3	1	3	5	1	5	2	2	1	3	5	3	3	4	4	1	1	5	3	1	0	5	5	83
	Himley Quarry (Landfill)	10	N/A	24.5	0	2	0	1	2	2	3	1	3	1	1	3	1	4	2	2	1	1	3	4	3	3	3	4	1	1	4	1	4	1	1	5	68
	Oak Farm Clay Pit	**FS**	**N/A**	**14.8**	0	2	1	1	0	2	3	1	3	1	1	3	1	4	2	2	1	1	3	4	2	3	3	4	1	1	4	1	4	1	1	4	65
Sandwell	Birmingham New Road Tipton	9	LQ	1.4	1	1	1	2	2	2	4	2	4	3	3	3	5	1	0	2	2	2	1	3	3	3	4	4	0	1	2	3	1	0	4	4	73
	St. Pauls Road Wednesbury	20	PHQ	11.5	1	1	0	2	1	2	2	2	5	2	3	1	5	0	0	2	1	1	3	3	5	3	2	1	1	1	2	2	1	0	4	4	63
	Glassworks Spon Lane South	12	PHQ	2.3	1	1	1	2	2	1	4	1	5	2	0	1	1	2	0	2	1	1	2	4	5	5	4	4	1	1	2	2	1	1	4	5	69
	Apex Industrial Park Ph 1&2	8	PHQ	3.1	1	1	0	2	2	4	3	2	4	2	3	3	2	4	0	2	2	2	2	1	5	5	3	4	2	1	2	2	1	2	4	5	78
	Kenrick Way West Bromwich	12	PHQ	3.8	1	1	0	2	2	2	4	2	5	2	3	1	3	5	4	2	1	1	2	3	5	5	5	4	0	1	2	2	1	0	4	5	80
	Bromford Lane West Bromwich	12	LQ	2.7	1	1	0	2	1	3	3	2	4	2	3	1	4	4	0	2	2	1	1	3	5	5	3	3	1	1	2	3	1	1	5	5	75
	Pikehelve EcoPark	**8**	**PHQ**	**12.8**	3	2	1	2	2	1	3	2	4	2	3	3	1	0	0	1	1	2	2	2	4	3	3	4	2	5	4	2	2	1	4	5	76
	Vaughan Trading Estate	9	LQ	1.3	1	1	0	2	2	2	4	2	3	3	3	3	5	0	0	2	1	2	1	2	3	3	3	4	1	1	2	3	1	0	5	5	70
	Former Gulf Oil Depot	**9**	**LQ**	**7.4**	1	2	1	2	2	3	1	2	2	3	1	1	4	5	2	1	1	1	3	3	3	3	3	4	3	3	2	3	2	1	4	5	76
	Anne Road / Foundry Lane	12	LQ	5.7	1	1	0	2	2	3	2	2	3	3	1	3	1	2	0	2	1	1	1	4	3	4	3	4	0	1	2	3	1	1	3	5	65
	Land Adj To Birmingham Canal	12	LQ	1.9	1	1	0	2	2	3	1	2	2	2	0	3	3	0	0	2	1	1	1	3	2	1	1	3	1	1	2	3	1	0	5	5	55
	Crown Works	12	LQ	4.3	1	1	0	2	2	2	2	2	3	3	1	3	1	1	0	2	1	1	1	4	3	4	3	4	1	1	2	3	1	1	3	5	64
	Edwin Richards Quarry*	FS	N/A	8.0	1	1	0	1	2	3	2	1	1	2	3	3	1	0	5	2	1	1	3		3	3	3	3	0	3	5	1	1	0	4	2	61
Walsall	Maybrook Industrial Estate	15	PHQ	2.3	1	1	0	2	2	3	4	2	5	2	3	3	2	0	0	2	2	1	3	2	5	5	5	4	1	1	2	2	1	1	5	5	77
	James Bridge (R/O Globe)	6	PHQ	3.3	1	1	1	2	1	2	4	2	5	2	1	1	2	0	0	2	1	2	3	5	4	4	5	4	1	1	2	2	1	1	4	5	72
	Anglesey Bridge	15	PHQ	2.6	1	1	0	2	2	3	3	2	5	2	1	3	2	5	4	2	2	1	2	3	5	5	4	4	1	1	2	2	1	1	3	4	79
	Aldridge Park	21	PHQ	1.5	1	1	0	1	2	5	2	1	3	2	3	3	5	4	0	2	2	2	2	1	4	5	3	3	0	1	2	2	1	0	4	2	69
	Joberns Tip	21	LQ	4.2	1	1	1	2	2	3	3	2	4	2	3	3	1	1	0	2	1	1	3	4	4	5	5	4	0	1	2	3	1	1	4	5	75
	Middlemore Lane	21	PHQ	4.0	1	1	1	2	2	3	3	2	4	2	3	3	5	0	4	2	2	1	3	4	4	5	5	4	3	1	2	2	1	0	4	5	84
	James Bridge	6	LQ	1.7	1	1	1	2	1	2	4	2	5	2	3	1	2	0	0	2	2	2	3	4	4	4	5	4	1	1	2	3	1	1	4	5	75
	Wellington Place	21	LQ	2.2	1	1	1	2	2	2	1	2	2	3	3	3	5	1	0	2	2	1	1	4	3	2	2	3	0	1	1	3	1	0	4	5	64
	North Of Newfield Close	7	LQ	1.2	1	1	1	2	2	3	2	2	3	2	3	3	1	1	0	2	1	1	2	3	3	3	3	3	2	1	2	3	1	0	4	4	65
	Bcr Junction 1 Site B	6	PHQ	2.0	1	1	0	2	1	2	4	2	5	2	3	3	1	1	0	2	1	2	3	2	5	5	5	4	1	1	2	2	1	1	4	5	74
	Reedswood	7	PHQ	4.3	1	1	0	1	2	4	3	1	4	2	3	3	5	0	0	2	2	2	3	1	3	3	4	3	1	1	2	2	1	0	4	4	68
	South Of Watery Lane	6	PHQ	1.0	1	1	0	1	2	2	4	2	3	1	3	3	1	0	0	2	2	1	2	2	3	3	4	3	0	1	2	2	1	0	5	5	62
	Adj. Joberns Tip	21	LQ	1.9	1	1	1	2	2	3	3	2	4	2	3	3	1	1	0	2	1	1	3	3	4	5	5	4	0	1	2	3	1	1	4	5	74
	Fmr Garringtons Site	6	LQ	1.9	1	1	1	2	2	2	4	2	5	2	3	3	1	3	4	2	2	2	3	4	5	5	5	4	1	1	2	3	1	1	4	5	83
	Vigo Place / Brickyard Road	21	LQ	1.2	1	1	0	2	2	3	3	2	4	3	3	3	2	5	0	2	1	1	3	2	4	5	5	4	0	1	2	3	1	1	4	5	78
	Willenhall Road	6	PHQ	1.7	1	1	0	2	1	2	3	2	4	2	3	3	4	0	4	2	2	1	3	4	5	5	5	4	1	1	2	2	1	1	4	5	80
	Bentley Mill Way	6	PHQ	2.9	1	1	0	2	0	2	4	2	5	2	1	1	2	4	0	2	2	2	3	2	4	4	5	4	1	1	2	2	1	1	4	5	72
	Westgate One	21	PHQ	1.2	1	1	0	2	2	3	3	2	4	3	3	3	2	4	0	2	2	2	3	2	4	5	4	4	1	1	2	2	1	1	4	5	78
	Imi Works	6	PHQ	10.3	1	1	1	2	2	2	4	2	5	2	3	3	1	3	0	0	2	2	2	3	4	4	4	5	4	1	1	2	2	1	1	4	5	76
	Fmr Trident Alloys, Fryers Road	**7**	**LQ**	**3.6**	3	1	1	2	2	4	2	2	3	3	3	3	2	4	5	2	1	1	2	4	3	3	3	3	2	1	5	3	1	2	3	5	84
	Aldridge Quarry* **	**FS**	**N/A**	**4.5**	0	2	0	1	1	5	4	1	1	3	3	3	1	1	5	2	1	1	3	3	3	4	5	3	0	1	5	2	1	2	4	4	75
	Branton Hill Quarry*	FS	N/A	15.3	1	1	0	1	1	5	3	1	1	1	3	3	1	0	5	2	2	2	3	3	3	4	5	3	1	1	5	1	1	2	4	4	73
	Highfields South Quarry**	FS	N/A	14.8	1	1	0	1	1	2	4	1	1	0	3	3	1	0	5	2	2	1	3	3	4	5	5	4	1	1	5	1	1	1	4	4	71
	Sandown Quarry* **	**FS**	**N/A**	**24.2**	0	2	0	1	2	2	3	1	1	-1	3	3	1	4	5	1	1	1	3	3	3	3	3	3	2	1	1	4	2	1	1	4	4	65
	Atlas Quarry**	FS	N/A	23.4	1	1	0	1	0	2	3	1	1	1	3	3	2	0	5	2	2	1	3	2	3	3	3	3	0	1	4	1	1	1	4	4	62
	Wagon	15	LQ	4.3	1	1	0	2	2	3	4	2	4	0	3	3	2	1	0	1	2	1	3	2	4	5	5	3	1	5	2	3	1	1	4	4	75
Wolverhampton	Ladymoor Road	4	PHQ	2.7	1	1	2	2	2	2	2	2	4	2	3	2	1	0	0	2	2	1	1	3	3	3	3	2	3	2	1	2	2	1	3	4	3	64
	Qualcast Bridge	4	LQ	1.5	1	1	1	2	2	3	3	2	3	2	1	2	5	0	4	2	2	1	3	1	3	3	4	5	1	1	2	3	1	0	4	5	73
	Vulcan Road	5	PHQ	1.4	1	1	0	2	1	3	3	2	3	3	3	2	5	0	0	2	1	1	2	2	4	5	5	4	0	1	2	2	1	0	4	5	70
	Crown Works	2	LQ	2.0	1	1	1	2	2	3	4	2	4	2	-1	2	2	4	2	2	1	2	3	1	3	2	4	4	1	1	2	3	1	1	5	5	72
	Bowmans Harbour	6	PHQ	7.5	1	1	1	2	2	1	4	2	3	2	3	2	5	4	4	2	1	2	3	3	3	3	3	3	3	1	2	2	1	0	4	5	78
	SITA site, Wednesfield	**6**	**PHQ**	**0.5**	3	2	0	2	2	3	3	2	3	3	3	2	2	5	5	2	1	2	2	3	3	3	3	2	0	1	5	2	1	0	4	5	79

Sites in bold are those allocated in Policy WM3 *Assessed for complimentary uses as existing landfill sites ** Assessed for complimentary uses as existing quarry (landfill to come after plan period) ***Assessed as Landfill

Appendix 7

Contaminated Soil Management: Summary of Key Issues and Evidence

Contaminated Soil - Waste Arisings

Walsall Council Estimate (April 2008)

A7.1 In April 2008 Walsall Council undertook a desk-top exercise to quantify arisings and therefore potential future requirements for contaminated soil management. This considered evidence from published studies into arisings and use of CD&EW (construction, demolition and excavation waste) as aggregate, undertaken by the Waste and Resources Action Programme (WRAP)[18] and Capita Symonds/ WRc Plc,[19] based on 2003 and 2005 survey data.

A7.2 The two Capita Symonds surveys carried out in 2003 and 2005 considered CD&EW arisings and their fate, and produced reliable data to regional level only. Although the 2005 Capita Symonds survey produced data for Birmingham and the Black Country (see Table A11.12), this was grossed up from the regional data and is therefore not considered reliable. The WRAP study focused mainly on the sustainable use of CD&EW as aggregate. This was based on a survey of 20 recycling sites in the former West Midlands County[20] in 2003 by CIRIA, supplemented by 2004 data provided by Tarmac and the findings of the 2003 Capita Symonds survey.

[18] The sustainable use of resources for the production of aggregates in England (2006), WRAP in association with CIRIA, Enviros Consulting and Tarmac.

[19] Survey of Arisings and Use of Construction, Demolition and Excavation Waste as Aggregate in England 2003 (October 2004), Capita Symonds/ WRc Plc for DCLG and Survey of Arisings and Use of Alternatives to Primary Aggregates in England, 2005: Construction, Demolition and Excavation Waste (February 2007), Capita Symonds/ WRc Plc for DCLG.

[20] The former West Midlands County includes the Black Country, and comprises the seven Metropolitan unitary authorities of Birmingham, Coventry, Dudley, Sandwell, Solihull, Walsall and Wolverhampton.

A7.3 While these studies give an indication of the quantities of CD&EW managed/ produced within the West Midlands region as a whole and within the West Midlands County, neither has attempted to measure CD&EW arisings at individual WPA level. It is therefore not possible to produce reliable estimates of CD&EW arisings and use in the Black Country using the data from these surveys. Furthermore, none of the surveys provides reliable data on waste soil arisings, let alone contaminated soil arisings, so it is necessary to assume that "excavation wastes" contain a high proportion of soils and clays.[21]

Table WA7a: Re-use, Recycling and Disposal of CD&EW in the West Midlands Region, 2001 - 2005: Soils and Other Excavation Wastes

Date of Survey	Recycled Soil	Material Used on Registered Exempt Sites[22]	Excavation Waste and Mixed CD&EW Used for Engineering [23]	Excavation Waste and Mixed CD&EW Disposed of at Registered Landfills	Total Soils and Other Excavation Wastes Managed	Total CD&EW Managed
2001	565,000	1,808,000	1,990,000	346,000	4,709,000 (54.60%)	8,624,000 (100%)
2003	647,000	779,000	1,293,000	655,000	3,374,000 (41.50%)	8,130,000 (100%)
2005	470,000	2,911,000	674,000	808,000	4,863,000 (49.42%)	9,840,000 (100%)

Source: Capita Symonds CD&EW Survey 2001, Table 1, Capita Symonds Survey 2003, Table A8,1, Capita Symonds CD&EW Survey 2005, Table A10.4

[21] The WRAP study suggests this is likely to be the case for "low recovery" excavation wastes, i.e. materials disposed of to landfill – see 4.2.5.

[22] For 2001 and 2003 this includes all material used at registered exempt sites, as 2005 data includes an aggregated total only.

[23] For 2001 and 2003 this includes excavation wastes and mixed CDEW used for landfill engineering/ restoration and to backfill quarry voids; for 2005 it includes excavation wastes and mixed CD&EW used for engineering and capping at registered landfill sites.

A7.4 Data from the Capita Symonds surveys (see Table WA7a above) suggests soils and other excavation wastes represent around 40 - 50% of total CD&EW re-used, recycled and disposed of in the West Midlands region. However, as these figures include mixed/ unspecified CD&EW and other excavation wastes as well as soils (although specified hard construction and demolition wastes have been excluded), actual waste soil arisings are likely to be somewhat lower.

A7.5 It can be reasonably assumed that recycled soils are either clean or contain very low levels of contaminated material which does not require further treatment. Material recovered or re-used in this way can therefore be disregarded. Much of the material used on registered exempt sites is likely to be of a similar quality (the Capita Symonds surveys from 2001 and 2003 do not specifically refer to contaminated material and record relatively low quantities of mixed CD&EW).

A7.6 The only data which specifically relates to contaminated material is that relating to deposits at licensed landfills. The 2005 Capita Symonds survey data is most useful as this differentiates between “clean” and mixed/ contaminated wastes (where known), giving a broad indication of the quantities of contaminated material entering landfill sites. The 2003 survey data is less useful as contaminated material is included within broader categories of mixed and/ or contaminated waste. The WRAP study does not differentiate between clean and contaminated material and simply breaks down excavation wastes into two sub-categories: high recovery (wastes used on licensed exempt sites) and low recovery (wastes deposited at licensed landfill sites).

A7.7 According to the Capita Symonds surveys, unprocessed CD&EW sent to licensed landfills in the West Midlands region totalled around 2,011,000 tonnes in 2005. Of this, around 68,000 tonnes were classed as contaminated. Table WA7b below provides a breakdown of contaminated wastes entering licensed landfills in the region by waste category, together with the Birmingham and Black Country data from the same survey for comparison.

Table WA7b: Contaminated Unprocessed CD&EW Entering Licensed Landfills in the West Midlands in 2005

Region/ Sub-Region	Unprocessed CD&EW Entering Licensed Landfills (tonnes)			
	Contaminated Hard C&D Waste	Contaminated Excavation Waste	Contaminated "Mixed" CD&EW	Other
West Midlands Region 2005	3,350	46,072	18,107	367,157
Birmingham & Black Country	372	5,373	2,012	309,266

Source: Capita Symonds survey 2005, Tables A10.4 and A11.12

A7.8 Around 3,000 tonnes of this contaminated material related to hard C&D wastes which can be discounted, giving a total of around 65,000 tonnes of residual contaminated soil and other contaminated excavation waste entering licensed landfills in the West Midlands region. However, this may be an under-estimate. Some contaminated material could be included in the "other" category, which includes a significant quantity of materials for which the category is unknown.

A7.9 Assuming that contaminated excavation waste and contaminated "mixed" CD&EW = contaminated soils, and based on the assumption used in the WRAP study that 75% of CD&EW managed in the West Midlands region relates to the former West Midlands County, Walsall Council has estimated that **contaminated excavation waste arisings in the West Midlands County as a whole are likely to be around 50,000 tonnes per annum**.[24]

A7.10 Extrapolation from the sub-regional data for Birmingham and the Black Country was not considered appropriate because it is unlikely to be reliable. It also covers waste entering landfill sites within the sub-region, and as the number of these is limited, this would not reflect actual arisings even if the data was reliable.

[24] This is a rounded figure based on 75% of 65,000 tonnes = 48,750 tonnes.

A7.11 Assuming that the above estimate is valid for the West Midlands County as a whole, it is reasonable to assume that somewhat **less than 50,000 tonnes of contaminated excavation waste arises in the Black Country per annum**. As the Core Strategy is proposing significant redevelopment of employment land within the growth network, arisings may increase between now and 2026, but it is not clear by how much.

Black Country Waste Planning Study Estimate (April 2009)

A7.12 Section 3.6 of the Black Country Waste Planning Study (BCWPS) considers how much contaminated soil is likely to arise in the Black Country between now and 2026, using the following evidence:

- Proposed levels of housing, retail and office development 2006 – 2026 in RSS Phase 1 Revision and draft RSS Phase 2 Revision;

- Environment Agency estimate of land affected by contamination in the West Midlands Region (2005)

- NLUD data for the four Black Country authorities (2007)

- RSS derelict land monitoring data for the four Black Country authorities – amounts of derelict land and past rates of remediation (2007)

- Estimates of likely quantities of contaminated soil arising on a typical remediated site, based on Atkins' experience of dealing with such sites.

A7.13 To arrive at estimates using the above data, it was necessary to make assumptions about the depth of excavation on derelict sites and the proportion of excavated soil which is likely to be contaminated, based on previous experience. It was assumed that around 50% of a derelict site area will be excavated to a depth of 1 metre, and that around 30% of the soil excavated is likely to be contaminated. Using these assumptions, the BCWPS estimates

that around 251,064 tonnes of contaminated soil and hazardous waste residue from on-site treatment is likely to arise in the Black Country between 2008 and 2026. This equates to around **14,000 tonnes per annum**.

A7.14 The BCWPS includes a caveat that the derelict land data on which the above estimate is based reflects current estimates the amount of derelict land, and levels of remediation activity in the past rather than what is proposed in the future. However, recent work undertaken by the Black Country authorities suggests that future remediation activity within the growth network is likely to be similar to levels of activity in the past, and is therefore likely to generate similar quantities of material. Future arisings are therefore unlikely to exceed the estimate in the BCWPS.

Black Country Core Strategy Stage Two Infrastructure & Delivery Study (November 2009)

A7.15 The Stage Two Infrastructure & Delivery Study (Technical Note 6) has only been able to assess the risk from contamination within the regeneration corridors in very broad terms, and recommends more detailed site investigation at a local level. The Study was not able to quantify the amounts of contaminated soils and other contaminated excavation wastes likely to arise from redevelopment within the growth network over the plan period.

Conclusions

A7.16 The above estimates of contaminated excavation waste arisings are based on extrapolated evidence, assumptions about how much contaminated material is likely to be present and past rates of activity. They are therefore unlikely to be 100% reliable, although the BCWPS estimate of around 14,000 tonnes per annum is likely to be the most robust.

Contaminated Soil Management – Current Practice and Management Options

Existing Capacity and Management Options

A7.17 There are currently no permanent contaminated soil management facilities in the Black Country and no final disposal sites for hazardous waste residues. However, there is a company specialising in in-situ treatment: Envirotreat Ltd, based in Dudley. There are also contractors who can organise land remediation using a sub-contractor. However, any contaminated material which cannot be managed in-situ must be removed for treatment and/ or disposal outside the Black Country.

A7.18 The BCWPS (Section 3.6.2) confirms that the methods of management chosen will depend on the nature of the contamination present and this can usually only be determined following a phased programme of investigation. It identifies a number of remediation options for contaminated soils, as follows:

- Left in-situ
- Sealed off in-situ
- Treated in-situ
- Treated on site
- Moved and reburied on-site, usually in engineered containment
- Treated off-site
- Landfilled off-site

A7.19 The option chosen will depend on the specific characteristics of the site, for example, the distribution and type of contaminants, the proposed after-use, whether the pollution or liability drivers are important, and the availability / relative cost / potential funding for different remedial options.

A7.20 A study by the British Urban Regeneration Association (BURA) in 2006 found that on-site treatment is not practical on small sites as there are

insufficient volumes of material to justify setting up on-site decontamination technologies.[25] In the Black Country, stakeholder engagement with AWM, the development industry and pollution control officers has confirmed that time constraints are an important factor in deciding whether waste is managed on-site or off-site. Developers in the Black Country are inclined to choose off-site rather than on-site remediation options, to minimise delays and associated costs.

Treatment and Remediation Techniques

A7.21 Three main strategies can be adopted towards remediation of contaminated soil and groundwater:

- **Destruction or alteration** of contaminants using chemical, biological or thermal techniques;

- **Extraction or separation** of contaminants from environmental media using physical or thermal techniques;

- **Immobilisation** of contaminants using chemical techniques.

A7.22 There is a very wide range of treatment techniques, some of them very specialised and targeted towards treating particular contaminants. Different techniques can be applied in isolation or in combination with others through a remediation "treatment train," which is a sequential use of different techniques to treat the same volume of waste.[26] Several destruction/ alteration and extraction/ separation techniques can be used either on-site (in-situ) or off-site (ex-situ). The main techniques used to treat contaminated soil and groundwater are listed in Table WA7c below.

[25] Waste Management in Urban Regeneration (2006), BURA, Section 3.4

[26] See Brownfield Briefing: Remediation Solutions Issue III (October 2005), "Driving the Treatment Train"

Table WA7c: Common Management and Remediation Techniques for Contaminated Soils and Groundwater

Technique	Type	Key Characteristics	On-Site or Off-Site?
Air Sparging/ Venting	Physical	Injection of compressed air beneath the water table at controlled pressures and volumes to encourage physical and biological degradation of contaminants. Not usually used in isolation - more commonly used to extend the application of soil vapour extraction to water-saturated soils.	On-Site
Barriers/ Cut-Off Walls/ Capping	Physical	Use of impermeable or permeable barriers, walls or capping to create a physical barrier around contaminated areas, preventing leaching of contaminants into adjacent soils, groundwater or water bodies. Permeable "reactive" barriers can be used to treat/ filter out contaminated groundwater.	On-Site
Bioremediation – Aerobic	Biological	Use of aerobic bacteria (bacteria which use oxygen) to break down organic contaminants through introduction of air, oxygen or nutrients into soils. Can be introduced through wells or boreholes as with extraction techniques such as soil vapour extraction. This can treat solvents, oil and petroleum based substances. There are a number of techniques (e.g. bio-sparging, bio-venting, oxygen infusion, electrolytic oxygenation). Can be a lengthy process where groundwater temperature is low; can be speeded up when combined with thermal treatment.	On-Site
Bioremediation – Anaerobic (Dehalogenation)	Biological	Use of anaerobic bacteria (bacteria which process hydrogen) to break down organic chlorinated compounds present in soils. Requires the right conditions to work, and may not be effective if there are "competing" reducing bacteria or "source zones" present in the soil.	On-Site
Bioremediation – Bio-piling and Windrow	Biological	Piling of soil into large heaps and use of mechanical plant to agitate and oxygenate the material to encourage natural break down and degradation. Windrow is similar to open windrow composting, bio-piling involves additional biological treatments. Requires large open area so not usually suitable for on-site treatment. Off-site facilities may be located on non-hazardous landfill sites. Does not produce bio-aerosols so does not need to be 250m from sensitive receptors.	On-Site or Off-Site

Technique	Type	Key Characteristics	On-Site or Off-Site?
Chemical Treatments	Chemical	Introduction of chemical oxidants or reductants to destroy or neutralise contaminants present in soil and groundwater. Chemical oxidisation is used to treat organic materials and chemical reduction is used to treat solvents and some heavy metals. Can be done through well, barrier or mixing.	On-Site or Off-Site
Conductive Heating	Thermal	In-situ thermal treatment involving use of heater elements to heat soil and speed up other treatment techniques. Most effective in low permeability, high clay content soils.	On-Site
Disposal (Landfill)	Physical	Disposal to landfill of solid hazardous waste residues which remain once all other treatment options have been exhausted. Residues can only be deposited in a landfill site licensed to take hazardous waste. Sometimes referred to as “dig and dump.”	Off-Site
Extraction – Soil Vapour (SVE)/ Dual Vapour (DVE)/ Multi-phase (MPE or Bioslurping)	Physical	Extraction of contaminated groundwater, other liquids and/ or soil vapour through wells or boreholes, using “lances” and a vacuum system. Soil vapour extraction (SVE) can be used on its own or in combination with dual/ multi-phase extraction (DVE, MPE) which can also extract liquids. Extraction process can be speeded up if used in combination with air sparging/ venting and/ or thermal treatment such as steam enhanced remediation. Unlikely to be suitable where underlying geology has high organic content or contamination occurred a long time ago.	On-Site
Monitored Natural Attenuation (MNA)	Biological Chemical Physical	Reliance on natural processes to reduce mass, toxicity, mobility, volume or concentration of contaminants present in soil or water. Can be “enhanced” through interventions to speed up natural processes or make them more effective. Requires favourable conditions.	On-Site
Pump and Treat (Biosplurging)	Biological Chemical Physical	General term describing modular systems for treating contaminated groundwater. The water is pumped through a series of treatment units designed to remove contaminants - these can include physical, biological and chemical treatments. The cleaned water can then be safely discharged.	On-Site or Off-Site

Technique	Type	Key Characteristics	On-Site or Off-Site?
Resistive Heating	Thermal	In-situ thermal treatment involving use of high currents, applied through electrodes, to heat soil and speed up other treatment techniques. Most effective in low permeability, high clay content soils.	On-Site
Segregation/ Recovery	Physical	Stockpiling, testing, identification and classification of different types of waste present in soils, to identify the most appropriate strategies and methods of treating and removing contaminants, minimise the need for treatment/ disposal, and maximise recovery and re-use of soils on-site.	On-Site or Off-Site
Soil Washing/ Screening	Physical	Use of mobile plant to wash, screen and filter soils and clays or to recover further usable material from filter cake (residues). Similar to ordinary mobile plant for screening and washing CD&EW, but specially designed to filter out contaminants. Filter cake processing can take place in combination. Can be open-air or enclosed activity.	On-Site or Off-Site
Stabilisation/ Solidification	Chemical	Injection of chemical additives (such as a cement-based "binder") and use of augurs to mix it with the soil to immobilise contaminants. Solidification is a chemical process used to treat sludge or other semi-solid material to make it more solid, whereas stabilisation is the process that binds the matrix and immobilises the contaminants. One variant is a special treatment for heavy metal contaminants called Phosphate Apatite Metal Stabilisation.	On-Site or Off-Site
Steam Injection	Thermal	In-situ thermal treatment involving controlled injection of pressurised steam into a contaminated area to heat and mobilise the contaminants. Can be used in conjunction with other methods of recovery where heat helps to speed up the treatment process.	On-Site

Technique	Type	Key Characteristics	On-Site or Off-Site?
Thermal Desorption	Thermal	Heating of soil in a rotating kiln to treat persistent pollutants embedded in soil or hydrocarbons not susceptible to biological processes. This vapourises, filters and combusts the contaminants and the cleaned soil can then be rehydrated and used. Soils can be heated to high or low temperatures and heat can be applied directly or indirectly. Successful treatment depends on quality of feedstock. Not effective on over-saturated soils or soils with high clay or silt content.	Off-Site

A7.23 The table also indicates which methods are suitable for on-site (in-situ) and off-site (ex-situ) management. Some technologies can be used on-site or off-site, but several of the biological and chemical treatments, including stabilisation/ solidification, can only be applied on-site.

A7.24 "Dig and dump" is still the most popular option for brownfield developers in the Black Country. In the past, this usually involved direct disposal of waste to landfill and this was a relatively cheap and easy option. But this is no longer the case, due to the shrinking pool of hazardous waste final disposal facilities, the cost of using them, and new requirements which have arisen as a result of the Landfill Directive.[27] Alternative off-site treatments, such as off-site sorting, washing and screening, bioremediation, other biological or chemical treatments, and thermal desorption therefore have to be considered.

Remediation Contractors - Key Players

A7.25 There are a lot of companies offering land remediation and contaminated soil treatment services. Table WA7d above lists operators in England and Wales who are known to specialise in the treatment and remediation of contaminated soils and groundwater. This is an updated and simplified version of the schedule in Remediation Solutions III published by Brownfield Briefing in October 2005.[28] Later versions of this briefing have been published but are only available to subscribers. The table in the 2005 edition has been updated by Walsall Council using information obtained through stakeholder engagement/ online search.

A7.26 The companies listed below will undertake site investigations and testing, and design a specific treatment strategy for each site. They will

[27] See Waste Management in Urban Regeneration (2006), BURA, Section 2.5 and CL:AIRE Sustainable Urban Brownfield Regeneration: Integrated Management (SUBR:IM) Bulletin 1 (February 2008): The Role of the UK Development Industry in Brownfield Regeneration, Section 3.

[28] Brownfield Briefing Issue 3 (October 2005). This also includes a list of consultancies offering remediation services (which may be sub-contracted).

organise a remediation package either in-house or through sub-contracting arrangements with another company. They can apply a combination of on-site or off-site solutions using a variety of techniques depending on the nature of the contamination, the site conditions and the client's requirements. Some contractors are actively involved in research and development, and have pioneered and patented their own methods of treatment.

A7.27 Most operators appear to specialise in on-site treatment or off-site treatment on the client's own land, using mobile plant. Where off-site treatment or disposal is required, most also rely on permanent treatment and disposal facilities operated by others. Only a few have their own permanent treatment facilities, and in some cases their websites do not disclose where they are located. Some are able to offer off-site treatment through parent companies or partnerships, which in some cases may be based outside the UK.

Contaminated Soil Management – Locational Considerations

<u>On-Site Treatment and Remediation</u>

A7.28 National policy guidance requires waste planning authorities to consider opportunities for on-site waste management when searching for new facilities (PPS10, paragraph 20). On-site management of contaminated soils and other CD&EW is therefore encouraged, where feasible, through Policy WM4 and Policy WM5. However, as is noted above, on-site management will not be suitable in many cases due to time constraints or because the types of contaminants present are more appropriately treated off-site. The Core Strategy therefore needs to make provision for other potential treatment and remediation options.

Table WA7d: Soil and Groundwater Treatment and Remediation Contractors in England and Wales @ January 2010

Company	Location of Treatment Facilities	Nearest Office/ Base to Black Country	Techniques Used													
			Air Sparging/ Venting	Barriers / Cut-Off Walls/ Capping	In-Situ Bioremediation	Ex-Situ Bioremediation	Chemical Treatments	Disposal (Landfill)	Extraction (SVE/ DVE/ MPE)/ Bioslurping	Monitored Natural Attenuation (MNA)	Pump and Treat (Biosplurging)	Segregation/ Recovery	Soil Screening/ Washing	Solidification/ Stabilisation	Thermal Desorption	Other Thermal Treatments
3R	Mobile plant	Chelmsford	✓		✓	✓	✓		✓	✓	✓	✓	✓			✓
Alpha Environmental	Mobile plant	Gloucester Newark	✓	✓	✓	✓	✓	✓	✓	✓						
Arcadis GMI Ltd	Mobile plant	Newmarket (Suffolk)	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	
Ardabus Ltd	Mobile plant	Stoke Mandeville (Bucks)	✓		✓		✓		✓	✓	✓	✓		✓		
Augean Plc	Mobile plant, also treatment centres at Kings Cliffe (Northants) and Port Clarence (Cleveland). Port Clarence is joint venture with DEC UK Ltd.	Cannock			✓	✓	✓	✓					✓		✓	

Company	Location of Treatment Facilities	Nearest Office/ Base to Black Country	Techniques Used													
			Air Sparging/ Venting	Barriers / Cut-Off Walls/ Capping	In-Situ Bioremediation	Ex-Situ Bioremediation	Chemical Treatments	Disposal (Landfill)	Extraction (SVE/ DVE/ MPE)/ Biosluring	Monitored Natural Attenuation (MNA)	Pump and Treat (Biosplurging)	Segregation/ Recovery	Soil Screening/ Washing	Solidification/ Stabilisation	Thermal Desorption	Other Thermal Treatments
Bachy Soletanche	In-Situ only	Burscough (Lancs) Wakefield		✓										✓		
Bilfinger Berger Environmental Ltd	Mobile plant, also treatment centres (location not specified but probably in Germany)	Chertsey (Surrey) Manchester	✓		✓	✓			✓		✓	✓	✓	✓	✓	✓
Biogenie/ Biffa (partnership)	Risley, Warrington (Cheshire) and Colnbrook, Slough (Berkshire)	See treatment facilities	✓		✓	✓			✓	✓						
C A Blackwell/ HBR (subsidiary)	Mobile plant and treatment facilities (not specified where they are)	Bromsgrove		✓+		✓+	✓+				✓+	✓+	✓+			
Celtic Technologies	Mobile Plant, also use Biogenie/Biffa treatment facilities.	Cardiff	✓		✓+	✓	✓		✓		✓	✓		✓		

Company	Location of Treatment Facilities	Nearest Office/ Base to Black Country	Techniques Used													
			Air Sparging/ Venting	Barriers / Cut-Off Walls/ Capping	In-Situ Bioremediation	Ex-Situ Bioremediation	Chemical Treatments	Disposal (Landfill)	Extraction (SVE/ DVE/ MPE)/ Bioslurping	Monitored Natural Attenuation (MNA)	Pump and Treat (Biosplurging)	Segregation/ Recovery	Soil Screening/ Washing	Solidification/ Stabilisation	Thermal Desorption	Other Thermal Treatments
Churngold*	Mobile plant, also five licensed facilities in and around Bristol.	Bristol	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Cognition Land and Water*	Mobile plant	Weybridge (Surrey) Gatley (Cheshire)		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		
DEC UK Ltd (DEME Group)	Mobile plant, also treatment centre at Port Clarence (joint venture with Augean Plc) and recycling centres in Belgium and the Netherlands (joint venture with partner GRV NV)	East Grinstead (West Sussex)		✓	✓	✓+	✓+		✓			✓+	✓	✓	✓+	✓+

Company	Location of Treatment Facilities	Nearest Office/ Base to Black Country	Techniques Used													
			Air Sparging/ Venting	Barriers / Cut-Off Walls/ Capping	In-Situ Bioremediation	Ex-Situ Bioremediation	Chemical Treatments	Disposal (Landfill)	Extraction (SVE/ DVE/ MPE)/ Bioslurping	Monitored Natural Attenuation (MNA)	Pump and Treat (Biosplurging)	Segregation/ Recovery	Soil Screening/ Washing	Solidification/ Stabilisation	Thermal Desorption	Other Thermal Treatments
Ecologia Environmental	Mobile plant	Stafford	✓		✓	✓			✓		✓	✓				✓
EDS (Euro Dismantling Services Ltd)	Mobile plant	Sheffield	✓	✓+	✓	✓		✓	✓		✓		✓+	✓		
EDSR*	Mobile plant	Chatham (Kent) Leeds		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Encia Demolition	Mobile plant	Hilton Hall (Staffordshire)	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓
Environmental Land Solutions Ltd (ELS)	Mobile plant	Worcester	✓		✓			✓	✓		✓	✓				
Envirotreat Ltd	In-Situ only	Kingswinford, Dudley		✓	✓+	✓+								✓		
Frankis Solutions Ltd+	Mobile plant	Sidcup (Kent)		✓	✓	✓			✓		✓	✓	✓	✓	✓	
GeoFirma	In-Situ only	Colchester												✓		
GeoSierra LLC	In-Situ only	London		✓												

Company	Location of Treatment Facilities	Nearest Office/ Base to Black Country	Techniques Used													
			Air Sparging/ Venting	Barriers / Cut-Off Walls/ Capping	In-Situ Bioremediation	Ex-Situ Bioremediation	Chemical Treatments	Disposal (Landfill)	Extraction (SVE/ DVE/ MPE)/ Bioslurping	Monitored Natural Attenuation (MNA)	Pump and Treat (Biosplurging)	Segregation/ Recovery	Soil Screening/ Washing	Solidification/ Stabilisation	Thermal Desorption	Other Thermal Treatments
Hanson Support Services Ltd	In-Situ only	Scunthorpe			✓											
IEG Technologies UK Ltd	Mobile plant	Milton Keynes		✓	✓				✓		✓	✓				
Keller	In-Situ only	Coventry		✓												
Land Clean*	Mobile plant	Petersfield (Hampshire)	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	
Land & Water	Mobile plant	Swadlincote (Derbyshire)			✓	✓	✓					✓	✓	✓		
MB Envirotech	Website states they can undertake off site treatment via “hub,” otherwise off-site treatment is via parent company DSV Group (based in Denmark)	Woking (Surrey)	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
MEL Environmental Solutions Ltd	Scotland (developed with partner Hitech)	Barnsley			✓	✓		✓	✓		✓	✓	✓		✓	

Company	Location of Treatment Facilities	Nearest Office/ Base to Black Country	Techniques Used													
			Air Sparging/ Venting	Barriers / Cut-Off Walls/ Capping	In-Situ Bioremediation	Ex-Situ Bioremediation	Chemical Treatments	Disposal (Landfill)	Extraction (SVE/ DVE/ MPE)/ Bioslurping	Monitored Natural Attenuation (MNA)	Pump and Treat (Biosplurging)	Segregation/ Recovery	Soil Screening/ Washing	Solidification/ Stabilisation	Thermal Desorption	Other Thermal Treatments
McArdle	Mobile plant	Colnbrook (Berkshire)	✓	✓	✓	✓		✓			✓	✓		✓		
O' Keefe Soil Remediation	Mobile plant	Greenwich										✓	✓	✓		
QDS Environmental	Mobile plant	Guildford Sheffield	✓	✓	✓	✓	✓	✓	✓	✓						✓
RAW Remediation UK	Mobile plant	Malvern		✓	✓		✓	✓	✓	✓	✓					
Remedx Remediation Services (RSK)	Mobile plant	Bristol	✓	✓	✓	✓	✓		✓		✓					✓
Rockbourne Environmental	Mobile plant	Christchurch (Dorset)		✓	✓+		✓		✓	✓			✓	✓		
Shanks/ Bio-logic	Mobile plant, also "soil hospital" in unspecified location	Milton Keynes			✓+	✓+		✓			✓	✓	✓	✓	✓	✓
Soil and Water Remediation	Mobile plant	Manchester			✓	✓	✓	✓	✓		✓			✓		

Company	Location of Treatment Facilities	Nearest Office/ Base to Black Country	Techniques Used													
			Air Sparging/ Venting	Barriers / Cut-Off Walls/ Capping	In-Situ Bioremediation	Ex-Situ Bioremediation	Chemical Treatments	Disposal (Landfill)	Extraction (SVE/ DVE/ MPE)/ Bioslurping	Monitored Natural Attenuation (MNA)	Pump and Treat (Biosplurging)	Segregation/ Recovery	Soil Screening/ Washing	Solidification/ Stabilisation	Thermal Desorption	Other Thermal Treatments
Soilfix Environmental Contracting	Mobile plant	Bristol	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
TCSR Ltd	Have facilities in Europe. Obtained permission for thermal desorption treatment facility in Warwickshire in June 2008 but not implemented.[29]	Bristol				✓	✓					✓	✓	✓	✓	✓
Tamdown Regneration⊙	Mobile plant	Maidenhead (Berkshire)														
Telluric Land Remediation Ltd	Mobile plant	Cardiff	✓		✓	✓	✓	✓	✓	✓	✓	✓				
Terra Vac (UK) Ltd	Mobile plant	Castleford	✓	✓	✓	✓	✓				✓	✓		✓		✓

[29] Judkins Quarry, Nuneaton. Information obtained from the Warwickshire County Council website indicates the site owner withdrew support for the proposal, apparently under pressure from local opposition. The permission granted was a temporary one, for five years.

Company	Location of Treatment Facilities	Nearest Office/ Base to Black Country	Techniques Used													
			Air Sparging/ Venting	Barriers / Cut-Off Walls/ Capping	In-Situ Bioremediation	Ex-Situ Bioremediation	Chemical Treatments	Disposal (Landfill)	Extraction (SVE/ DVE/ MPE)/ Bioslurping	Monitored Natural Attenuation (MNA)	Pump and Treat (Biosplurging)	Segregation/ Recovery	Soil Screening/ Washing	Solidification/ Stabilisation	Thermal Desorption	Other Thermal Treatments
United Retek UK	Mobile plant	Birmingham		✓							✓	✓		✓		
Vertase FLI Ltd*	Not specified, but website states they have in-house capability.	Bristol Manchester Sheffield		✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	
VHE Group*	Not specified, but website states they have in-house resources. Undertook first CLUSTER project in Sheffield.	Cheltenham			✓	✓					✓	✓	✓	✓		
WSP Environment & Energy⊙	Not specified	London														

* Have Black Country case studies on their website
+ Wholly or partly sub-contracted to a partner/ subsidiary or undertaken by parent company
⊙ Unable to access website/ unable to find information on technologies on website

Temporary Off-Site Treatment and Remediation

A7.29 An alternative to on-site treatment is to set up a temporary treatment facility on a site nearby, for example, on an adjacent site in the developer's ownership or control, on part of a larger site to be developed in phases, or through a CLUSTER.[30] The BCWPS (Section 3.6.6) concluded that in the current economic climate, with less development happening, development of permanent infrastructure may not be economically feasible for the private sector. It suggests that in the short-term, the CLUSTER approach may offer a practical alternative. The CLUSTER approach is also noted in the BURA study as a potential solution to dealing with contaminated soils in brownfield regeneration.[31]

A7.30 The CLUSTER approach involves identifying a group of sites that are relatively close to each other, where it would be either uneconomic to remediate them on their own or where a co-ordinated approach would bring significant environmental and cost saving benefits. The sites are then remediated in a co-ordinated way, by establishing a "shared" temporary treatment site ("hub") where contaminated soils arising from these sites can be treated to minimise the amount of hazardous waste requiring final disposal to landfill. Any non-hazardous material can then be re-used on either the originating site or on another site within the CLUSTER group.

A7.31 CLUSTER projects have three guiding principles, which is that they are:

- **Temporary** – operate only as long as the sites defined within the Cluster are being developed

[30] CLUSTER has been developed by CL:AIRE in association with other organisations – see CL:AIRE website for details: http://www.claire.co.uk/index.php?option=com_content&task=view&id=261&Itemid=87

[31] Waste Management in Urban Regeneration (2006), BURA, Section 3.4

- **Local** – in terms of being demonstrably appropriate having regard to participants and their sites, geographical distance, relative savings and practical issues
- **Sustainable** – provide a more sustainable way of developing land

While the CLUSTER approach has been used successfully in a pilot scheme in Sheffield, this has shown that it will only work where there are a number of sites all fitting within a compatible development window that have similar contamination and remediation requirements and broadly similar geotechnical and structural challenges.

A7.32 In the Black Country, a CLUSTER project is most likely to be feasible in a large-scale phased regeneration programme covering a specific location, involving a single developer or consortium, where the contamination and geotechnical issues are similar in nature. Whilst it cannot be ruled out, there are not likely to be many suitable candidates for a CLUSTER in the Black Country, as land ownership tends to be fragmented, which can lead to problems with site assembly and remediation.[32] Industry in the Black Country has also been diverse in nature and consequently the nature of contamination and remediation solutions are also diverse.

A7.33 As CLUSTER projects are both temporary and local in nature, and may not work in the areas proposed for change in the Black Country, it is not feasible to identify CLUSTER locations in the Core Strategy. A CLUSTER location could only be identified with confidence in an Area Action Plan, Masterplan or other regeneration framework, where detailed investigations have shown it is feasible and is the most appropriate method of treatment and remediation for excavation wastes. Policy WM5 therefore requires those promoting regeneration programmes within the growth network to have a strategy for managing contaminated soils and other CD&EW arising from the land remediation process and to consider using temporary "hub" sites.

[32] See Black Country Joint Core Strategy Viability Sample Sites Study (October 2009), Mott MacDonald, Executive Summary, Page IX and Section 7.2.

Permanent Off-Site Treatment and Remediation Facilities

A7.34 Permanent soil treatment facilities are well established in Europe but are few and far between in the UK and there are none in the Black Country or elsewhere in the West Midlands Metropolitan area. The review of companies involved in contaminated soil treatment and remediation above identified the following permanent treatment facilities or "soil hospitals" in the UK:

- Augean plc – treatment facility in Northamptonshire
- Augean plc/ DEC UK Ltd – treatment facility in Cleveland
- Biffa/ Biogenie – bioremediation facilities in Cheshire and Berkshire
- Churngold plc – five treatment facilities in and around Bristol
- MEL/ Hitech – treatment facility in Scotland
- Shanks – "soil hospital" in unspecified location

A7.35 As there are so few of these facilities in the country, the likelihood is that if one were to be developed in the Black Country, it would be a very large facility, meeting far more than just local needs and importing waste from other areas – which is what happens at the existing facilities. However, to ensure that it did meet local needs, it would need to be located as close as possible to sources of contaminated waste in the Black Country.

Contamination in the Black Country – The Scale of the Problem

A7.36 Contamination is not present everywhere in the Black Country. It is the older employment areas which are most affected, and it is the growth network – where some of these areas are proposed to change to housing use – which is likely to generate the main demand for contaminated soil and water treatment. Logic suggests that these areas should be the focus for any new treatment facilities developed. But where exactly should we be looking? Although derelict land has been analysed in the BCWPS (see above), not all derelict land has contamination present. Information must therefore be sought from other sources.

A7.37 At present, no sites are listed on the Black Country's statutory Contaminated Land Registers. This often comes as a surprise to many people. However, there are strict tests for determining what goes onto the register. Under Part IIA of the Environmental Protection Act 1990, the relevant authority must demonstrate that contamination is causing significant harm or significant possibility of harm, or pollution to controlled waters, before a site can be placed on the statutory register. As Pollution Control Authorities, each of the Black Country Authorities has adopted a strategy for inspecting potentially contaminated sites and determining whether they should go onto the register.

A7.38 The contaminated land inspection strategies highlight former landfill sites and areas of previous industrial activity as the main areas where contamination is likely to be present, particularly areas known to have been involved in processing heavy metals and other toxic materials. Some sites area also affected by instability (the legacy of past mining and quarrying activity) or contaminants leaching into the site from neighbouring sites through groundwater or underground voids. Where redevelopment is proposed, sites affected by contamination and/ or instability must undergo remediation to make them safe and fit for the proposed use.

A7.39 As the cost of land remediation can be very considerable, and the strategy depends to a large extent on changing existing employment areas to housing use, there were concerns about the potential impact of this on the viability of individual projects as well as on the regeneration strategy as a whole. The Black Country authorities therefore asked Mott MacDonald to consider the implications of ground risk for deliverability of the strategy, as part of the technical studies they carried out into infrastructure and deliverability and viability.

A7.40 A desk top assessment of ground risk within the growth network is included in the Stage 2 Infrastructure and Deliverability Study.[33] This was a high-level assessment without the benefit of detailed site investigations, and it notes that the authorities' contaminated land inspection strategies have not been completed. The Technical Note therefore cautions against placing undue emphasis on the findings, and advises that an assessment of contaminative potential should be carried out once specific development sites have been defined at a local level.

A7.41 Although the Mott MacDonald assessment did not specifically identify areas with contamination, it did identify areas of made ground and worked ground where contamination may be present. Table 3 and Figure 3 of Technical Note 6 show the extent of made and worked ground within the growth network. Figure 3 shows a large area of this covering the central part of the Black Country, extending into all four authority areas.

A7.42 This confirms the evidence from the Contaminated Land Strategies that the older employment areas within the regeneration corridors are likely to be most affected by contamination. The only regeneration corridor with no made ground or worked ground is Corridor 15: Brownhills. However, the evidence from this study is not conclusive, and has significant caveats attached to it. It does not point to any specific locations, or even to any particular authority areas, as being "hot spots" for contamination. It therefore does not help us to identify locations particularly suited to the development of facilities to store, treat or remediate contaminated soils.

A7.43 The authorities therefore asked Mott MacDonald to consider whether the lack of local provision for managing contaminated soil wastes would be a barrier to delivery of the strategy. The potential impact of land remediation on development costs was considered in the Sample Sites Viability Study carried out by Mott MacDonald. This was a desk top study using readily available

[33] See Black Country Joint Core Strategy Stage 2: Infrastructure and Deliverability Study, Technical Note 6: Ground Risk and Minerals Extraction (November 2009), Mott MacDonald, Section 1.2.1, Table 3 and Figure 3.

information and making a number of assumptions, so there are some caveats attached to the findings.

A7.44 As might be expected, the study revealed a significant number of locations with potentially high development costs, the majority of which are associated with remediation of contaminated land or demolition and removal of buildings. These costs have a potentially significant impact on the viability of sites. Although all the sample sites were found to have a high chance of some contamination, estimated remediation costs varied considerably. It was also noted that in some cases, prior extraction of coal may partly offset land remediation costs.[34]

A7.45 Technical Note 7 of the Stage 2 Infrastructure and Viability Study considers waste infrastructure and capacity gaps, again using readily available data from the BCWPS and regional waste studies. It notes the lack of local facilities for managing contaminated soils, and that any increase in provision would help with the deliverability of the strategy by increasing capacity and possibly reducing development costs. However, it identifies no evidence that the lack of capacity to deal with contaminated waste has restricted the development of sites in the Black Country relative to other areas.[35]

A7.46 This suggests that, whilst the cost of dealing with contamination can be considerable and can be a viability issue for particular sites, a lack of local facilities for managing contaminated soils is not in itself a barrier to site remediation, or to the delivery of the overall strategy. Strategic site allocations for facilities to store, treat and remediate contaminated soils are therefore arguably not "central to the achievement of the strategy" PPS12, paragraphs 4.6 – 4.7). Furthermore, whilst the emerging RSS Policy W10 requires the Core Strategy to "give specific priority" to identifying sites, this does not

[34] See Black Country Joint Core Strategy Sample Sites Viability Study (October 2009), Mott MacDonald, Executive Summary, Page VII, Sections 5.3.1 and 7.8

[35] See Black Country Joint Core Strategy Stage 2: Infrastructure and Deliverability Study, Technical Note 7: Waste (November 2009), Mott MacDonald, Section 1.7.

amount to a requirement to identify specific sites. Indeed, it is impossible to identify such sites without adequate supporting evidence, which we do not currently have.

Off-Site Treatment Facilities – Locational Requirements

A7.47 The need to make provision for managing contaminated soils in the Black Country is not in dispute. It is also accepted that there is likely to be sufficient waste arising from future redevelopment schemes and regeneration programmes to make some facilities commercially viable in the long-term. However, as is noted above, we do not know for certain how much contaminated excavation waste is likely to arise in the Black Country between now and 2026, or what methods will need to be used to manage it.

A7.48 The range of contaminants present on Black Country sites is likely to be wide, suggesting that a variety of techniques will be needed to manage the waste. Some of the techniques identified in Table WA7c above involve on-site (in-situ) treatment, or can be carried out either on-site or off-site. This suggests that one or more very large sites would be required, capable of accommodating a range of different technologies. The main off-site (ex-situ) techniques which could be carried out at a permanent facility, their locational requirements, and key constraints are summarised in Table WA7e below.

A7.49 Off-site bioremediation would require a suitable “host” landfill site, but there are few options available. The TCSR proposal suggests that a brownfield employment site of at least 3ha with direct access to the primary route network (PRN) would be needed for off-site thermal treatment, and similar sites would be required to accommodate other technologies. However, large employment sites are few and far between in the Black Country, and no suitable sites were identified as a result of the assessment of potential waste management sites, which included potentially suitable RELS sites (see Section 4 of main paper).

A7.50 Even if a potential site had been identified, it could not have been allocated without evidence that it was deliverable. There is no evidence that any operator is interested in developing a permanent facility to store, treat or remediate contaminated soils in the Black Country at present. To date, none of the authorities has been approached by any operator or land owner, and no sites were suggested for this purpose through the consultation and engagement process.

A7.51 At the present time, the evidence does not support the identification of any sites for the storage, treatment and remediation of contaminated soils in the Core Strategy. However, we cannot rule out that sites will be identified at a later date, through more detailed research at a local level (as recommended in the Viability and Deliverability Study), and following a more extensive search for potential sites. Such sites could be allocated in Site Allocations DPDs. To assist with this process, the Core Strategy needs to include locational guidance, and identify broad locations likely to be suitable for different kinds of facilities. This guidance is provided in Policy WM4 and is based on the analysis of the key requirements above.

Table WA7e: Off-Site Contaminated Soil Management – Key Locational Requirements and Constraints

Technique	Key Requirements	Type of Location	Key Constraints
Bioremediation	Suitable "host" non-hazardous landfill site. Area of at least 0.5ha is likely to be required. Only likely to be viable where the treated soil can be used in restoration, in which case it will cease to be a "waste" and will not attract Landfill Tax.	Open Site	• Options are limited as there are only four non-hazardous landfill sites in the Black Country, and it has already been tried – and failed - at one of them. • Other non-hazardous sites are likely to come forward in the future but these are not likely to become available before 2020.
Disposal	Landfill site able to take hazardous waste residues.	Open Site	• There are no landfill sites in the Black Country or anywhere else in the West Midlands region licensed to take hazardous waste residues. • There is no evidence that any of the landfill voids currently available in the Black Country or likely to become available in the future are suitable to take these kinds of waste.

Technique	Key Requirements	Type of Location	Key Constraints
Segregation/ Recovery	Large brownfield employment site of sufficient size to allow stockpiling, sorting and separation of contaminated material removed from development sites following testing.	Open Site/ Enclosed Compound	• A combined treatment facility would require a very large site of at least 3ha, probably more, and no obviously suitable sites can currently be identified in the Black Country. • Will be treating waste from a large catchment area generating significant traffic movements, therefore requires good access to PRN, but there are only a limited number of locations in the Black Country likely to meet these requirements. • Likely to be visually obtrusive and to generate noise, vibration and dust, therefore not suitable for permanent location near residential areas/ community uses, "high quality" employment areas or other potentially sensitive locations. • To minimise harmful effects on neighbouring uses, this type of plant needs to be adequately screened and should be in an enclosed compound or structure.
Washing/ Screening	Large brownfield employment site of sufficient size to accommodate plant, plus space for stockpiling of material. Plant is mobile, similar to ordinary CD&EW screening and washing plant but adapted to filter out contaminants, and can have a throughput of up to 100,000 TPA.	Open Site/ Enclosed Compound	
Biological and Chemical Treatments	Large brownfield employment site of sufficient size to accommodate treatment plant. Likely to have similar requirements to washing and screening facilities.	Open Site/ Enclosed Compound	
Thermal Desorption	Large brownfield employment site of sufficient size to accommodate the plant used for treating the soils. TCSR proposal in Warwickshire was on a site of 3 ha and it would have had a capacity of 120,000 TPA. Treatment plant included soil processing equipment, a rotary kiln, filters, a fuel storage unit, a dewatering unit and a control system.	Open Site/ Enclosed Compound	

A7.52 As well as being difficult to accommodate in practical terms, by their nature, these proposals will be regarded as "bad neighbour" uses by the general public, as would other types of CD&EW processing facilities. They are not likely to be popular, judging by the example of the TCSR proposal in Warwickshire. To stand any chance of success, any future proposals must be well presented and demonstrate how they will contribute towards the regeneration of the Black Country, as well as addressing any potential harmful effects on adjoining uses.

Conclusions

A7.53 Planning for future contaminated soil management is not straightforward, given the many variables involved in land remediation in an area with complex land ownerships and site histories, the lack of obviously suitable sites, and the current lack of interest from operators. There is no "one size fits all" solution. As with other types of waste operation, a flexible approach is needed, allowing provision for treatment and remediation of contaminated soils in any suitable location, whether on-site or off-site, and whether temporary or permanent.

A7.54 The Core Strategy therefore adopts the following approach towards provision of facilities to store, treat and remediate contaminated soils:

- Policies WM1 and WM3 identify a potential need for facilities to be developed within the regeneration corridors;

- Policy WM2 identifies the only locally-based facility specialising in on-site treatment as a strategic site;

- Policy WM4 seeks to steer proposals for different facilities towards the most appropriate locations; and

- Policy WM5 provides guidance on how contaminated soil management should be addressed at a local level, in the planning of major area regeneration programmes.

Appendix 8

Assessment Criteria for Waste Applications and Key Considerations

Criterion	Key Considerations
Consistency with waste strategy	• Does it support the key planning objectives of national policy guidance towards waste? • Does it support Spatial Objective 9 and the strategic objectives of Policy WM1? • Would it contribute to the landfill diversion targets and help move waste up the "waste hierarchy"? • Would it contribute to residual capacity requirements? • Would it be managing wastes that not currently catered for in the Black Country or in the WPA area? • Would it be meeting a particular need identified in the RSS, LDF, SCS or MWMS?
Proximity to source of waste	• What types of wastes or waste residues will be managed and where will they come from? • Would the facility be associated with or ancillary to an adjacent or nearby waste producer? • Will the facility be accessible or useable by local communities and businesses? • If the waste being managed is not local, why has a Black Country location been chosen?
Suitability, flexibility and adaptability	• Is the location appropriate for the type of facility and operations proposed? • What sort of operations can the site accommodate? • Could the site or premises be adapted to suit different types of waste operation/ technology or other employment uses if circumstances change?
Potential for co-location/ synergies	• Would it involve co-location of different waste operations/ management of different waste streams? • Could it help create a waste management "cluster" in the area, for example is it near existing waste operators? • Would it be providing a service or supplying raw materials or energy/ heat and power to adjacent users?
Re-use of previously-developed land	• If it is on green field/ Green Belt land, is it fully justified in terms of need, operational requirements, and lack of suitable alternatives?

Environmental/ amenity impacts	• Would it conflict with environmental transformation objectives? • Would it harm important environmental assets? • Would it be compatible with surrounding/ neighbouring uses? • Is it likely to cause nuisances to neighbours such as traffic generation, noise, emissions, odours, vermin or litter? • If there are other similar facilities nearby, would the cumulative impact of an extra facility be harmful to the area or to neighbouring uses? • Is the design and layout appropriate to the type of operation and the location? • Does it include measures to address potentially harmful effects and if so are they adequate?
Compatibility with economic growth strategy	• Would the proposal support regeneration and growth, for example, would it be managing contaminated soils or other CD&EW? • Would the proposal be providing a service to local businesses, for example by managing locally arising commercial and industrial wastes? • If the proposal involves re-use, recovery or recycling, are the end-products to be used in the Black Country and if so will they support local industry?
Transport and accessibility	• Would it have significant impacts on the local/ strategic highway network? • Does it include measures to address highway/ traffic impacts and if so are they adequate? • Have potential opportunities to transport waste and/ or end products by rail or canal been fully explored?