

**WEST OF ENGLAND WASTE
MANAGEMENT AND PLANNING
PARTNERSHIP**

**CAPTURE RATE AND WASTE
ARISINGS ASSUMPTIONS 2006/07**

**MODELLING ASSUMPTIONS FOR
PROJECTING FUTURE MUNICIPAL
SOLID WASTE ARISINGS AND
ACHIEVING 50% RECYCLING AND
COMPOSTING OF HOUSEHOLD
WASTE IN SOUTH
GLOUCESTERSHIRE**

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1 INTRODUCTION OF UPDATED CAPTURE RATE AND WASTE ARISING ASSUMPTIONS

A Technology Options Appraisal (TOA) was conducted in 2006. This TOA involved waste flow and mass balance technical modelling, which analysed historic waste arisings in each authority. Using these historic waste arisings and working with South Gloucestershire Council (SG) waste officers, Jacobs modelled future trends in waste arisings. These trends included a prediction of the overall waste quantity looking at various potential arisings projections. We looked jointly at what the future performance of source segregation initiatives would be i.e. what the capture rate of materials would be under a Programmed Service Improvements (PSI) scenario, compared to the current Status Quo (SQ) baseline.

These future waste arisings and capture rate assumptions are presented in the Options Appraisal report prepared by Jacobs in January 2007. This report is available to download at www.rubbishorresource.co.uk

The SQ option represents the 2006/07 baseline performance in source segregation modelled into the future i.e. with no increases in source segregation performance. It represents the reliance on landfill for disposal of residual waste.

The Partnership undertook detailed assessments of their short to medium-term Programmed Service Improvements (PSI) i.e. assessing how their source segregation initiatives and services would change into the future, for example, additional roll out of a scheme, improving participation of a scheme, targeting the recovery of extra materials. This PSI was not scored during the Options Appraisal, as it provided the baseline source segregation performance upon which the technology options (1 to 7) were founded.

A Waste Arisings Model is used to project how the quantity of Municipal Solid Waste (MSW) arisings may change in the future across the Authority, taking into account factors such as changes in arisings per household and changes in the number of households. When considering future waste generation for each Authority, MSW was split into three waste streams for analysis:

1. Collected Household waste (including all residual household waste, kerbside collected source segregated materials and bring banks);
2. HWRC waste; and,
3. 'Other MSW' not described above.

A Capture Rate Model is used to estimate the future performance of the source segregation of materials from the MSW stream. It models the impact on the composition of MSW from the removal of recyclable materials by both current and future source-segregation collection schemes/ initiatives and analysing how effective these schemes will be in the capture of these materials for recycling.

The Capture Rate Model requires a number of operating parameters to be determined. These are the percentage:

- Of a waste stream "Targeted" for source segregation
- Roll Out" of the source segregation scheme to residents
- "Participation" in each source segregation scheme

- “Recognition” of a particular scheme by a resident.

The product of these parameters is the Capture Rate and this term refers to the fraction or percentage of a particular waste stream that is removed by a particular source segregation initiative i.e. “captured” from the waste stream.

New waste arisings for 2006/07 changed the SQ position. In light of this the SG waste officers and Jacobs reviewed the TOA waste arisings projections and the TOA PSI scenario at a workshop on 24 September 2007.

The revised assumptions were agreed and verified with SG before being re-applied to Jacobs’ technical waste flow and mass balance models along with an updated household waste composition analysis supplied by SG. This process resulted in a better understanding of current 2006/07 capture rates for all waste streams.

Jacobs’ Waste Arisings and Capture Rate models containing this updated data were used to assess each authority’s performance against recycling and composting targets and performance against LATS allowances. The outputs of this model showed that under the PSI scenario, SG would perform below the recycling and composting target of 50% by 2020 set in the National Waste Strategy for England 2007.

In order to meet the recycling and composting target, additional assumptions based on the performance of the other authorities in the West of England Waste Management and Planning Partnership (“the Partnership”) were applied to the SG capture rate model that resulted in an improved recycling and composting performance for SG.

This report details the assumptions agreed at the workshop and any subsequently revised assumptions that have been applied to enable SG reach the 50% recycling and composting target. Also contained are the future waste arising projections agreed by SG at the workshop on 24 September 2007.

The following a review of the Regional Spatial Strategy the Government office for the South West has published a Panel report recommending a change to the predicted housing growth within the area. The predicted waste growths within this report take into consideration the updated predicted housing numbers from the Panel report.

These assumptions have been applied to the technical waste flow modelling that underpins the Joint Waste Strategy for the Partnership.

The assumptions presented do not necessarily reflect what the Authority will adopt or implement or devote resources to. This is especially pertinent where assumptions are being projected ten or more years in to the future.

The assumptions will be kept constantly under review as new waste arisings data emerges.

2 CHOSEN WASTE GROWTH PROJECTIONS

Following the new waste arisings data, the new composition analysis supplied by SG and the outcomes of the Capture Rate and Waste Arisings workshop, waste arisings projections determined for the TOA have been revised.

2.1 Collected Waste

At the capture rate workshop three Jacobs projections for the social arisings of collected waste per household were presented to the authority and are detailed in Table 1 below.

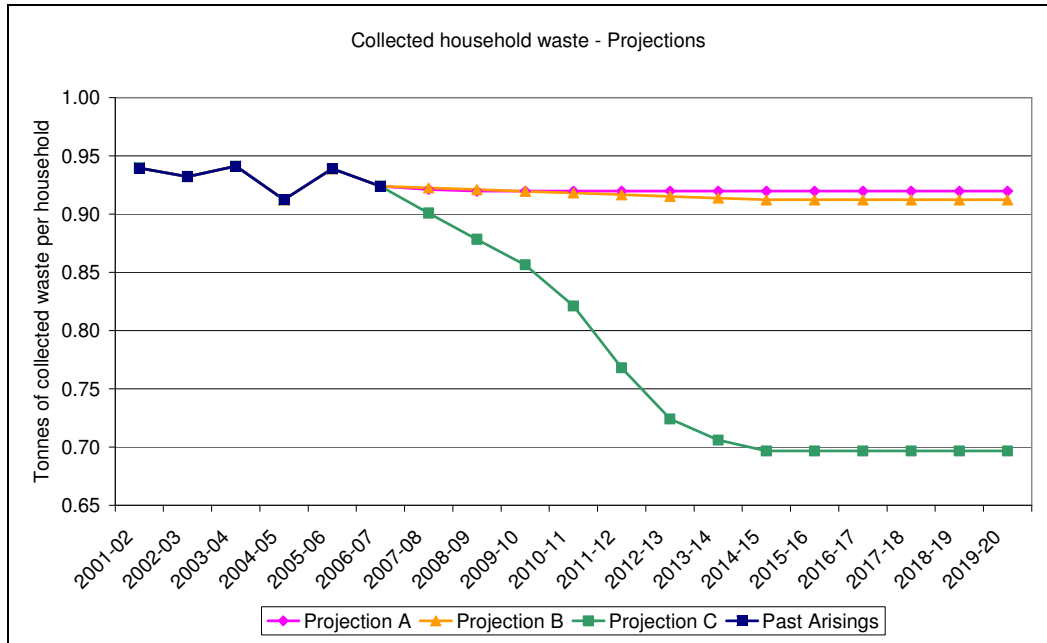
Table 1: Collected waste arising scenarios

Scenario	Description
Jacobs Collected Household Waste arisings projection A	Social arisings remain constant from 2007/08 onwards
Jacobs Collected Household Waste arisings projection B	Social arisings decrease slightly until 2014/15 then stabilise to a constant level
Jacobs Collected Household Waste arisings projection C	Social arisings decrease until 2014/15 then stabilise to a constant level

These projections are based on the historic arisings and consideration of a number of influencing factors, including the impact of future legislation, central Government targets, education initiatives and awareness raising.

Figure 1 shows the three projections (A-C) for collected household waste social arisings from Table 1 as discussed at the Capture Rate and Waste Arising workshop. It was agreed that waste arisings per household are anticipated to decrease slightly following the 2006/07 decrease (which at this point in time is thought to be an anomaly), then stabilise from 2014/15. Therefore Projection B was taken forward into the Jacobs models.

Figure 1: Household Waste Projections



2.2 HWRC Waste

At the capture rate workshop three Jacobs projections for the social arisings of HWRC waste deposited per household were presented to the authority and are detailed in the table below. These projections are based on the historic arisings and consideration of a number of influencing factors, including the impact of future legislation, targets, education initiatives, awareness raising and improvements in site operations.

Table 2: HWRC waste arising scenarios

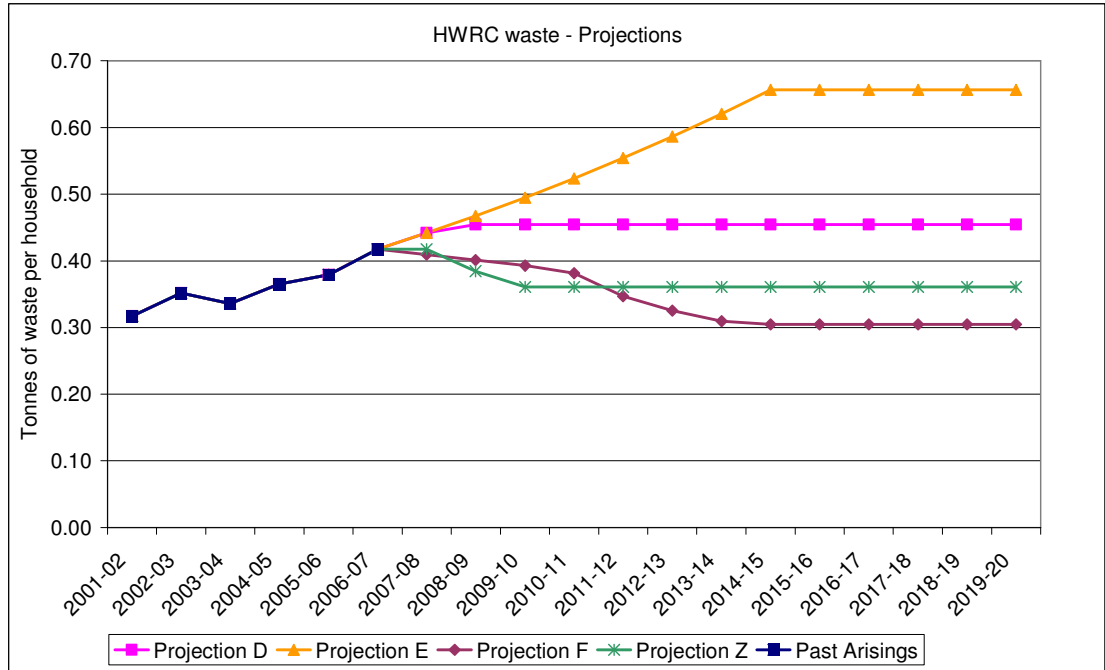
Scenario	Description
Jacobs HWRC Waste arisings projection D	Increase in social arisings until 2008/09, then a stabilisation to a constant level
Jacobs HWRC Waste arisings projection E	Social arisings average growth projected until 2014/15 then stabilises to a constant level
Jacobs HWRC Waste arisings projection F	Social arisings decrease until 2014/15, then stabilises to a constant level

A further Projection Z waste developed at the workshop in conjunction with the authority.

Figure 2 shows the three projections (D-F) for HWRC waste social arisings shown in Table 2 as discussed at the Capture Rate and Waste Arising workshop. The additional projection, projection Z was developed during the workshop. This is assumed to take into account the introduction of restrictions and possible permits at the HWRC sites over the next two years. This is assumed to decrease the tonnages of waste per household from 0.41 to 0.31 with the next two years. Tonnages are expected to plateau after 2007/08

It was agreed at the workshop that that Projection Z will be taken forward. This is due likely introduction of permits and other restrictions decreasing waste per household similar to that seen in B&NES.

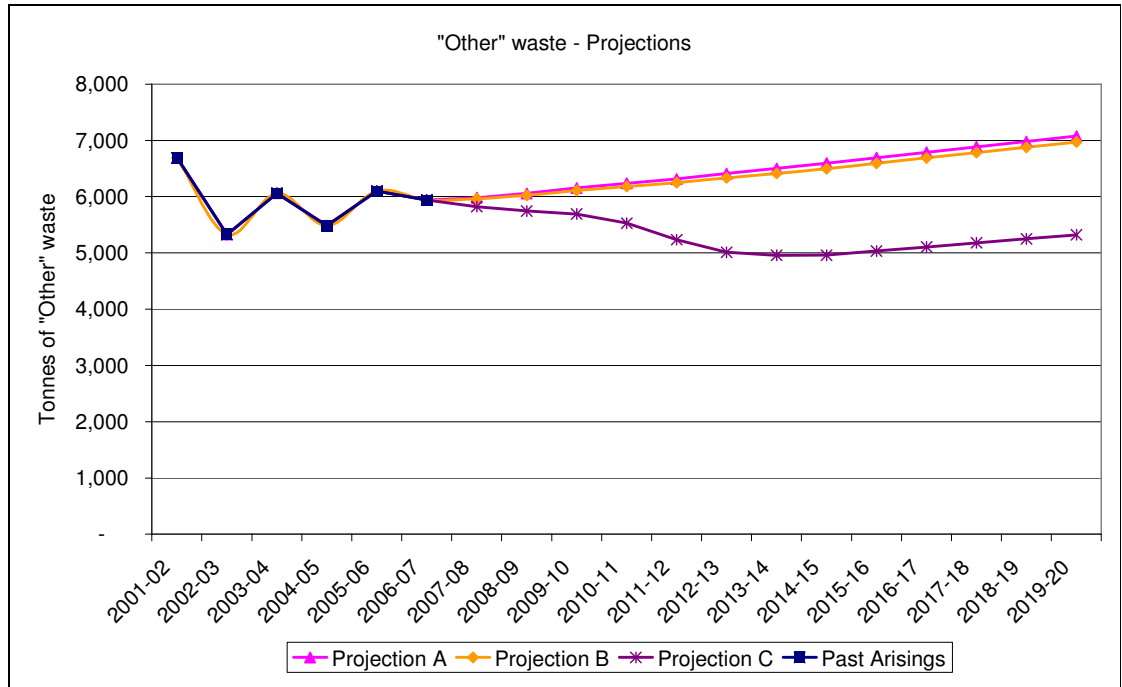
Figure 2: HWRC waste projections



2.3 Other Waste

“Other” waste is modelled as being proportional to the growth of social arisings for collected waste. This is because “Other” waste consists largely of sweepings, which should vary with population as collected waste arisings do. Projection B was chosen for collected waste therefore the growth rate of Projection B has also been used for “Other” waste arisings. Figure 3 shows the tonnages that would be generated under each of the social arisings projections used also for household waste in Figure 1.

Figure 3: "Other" waste projections



2.4 Total MSW

The panel report published by Government office for the South West (following a review of the Regional Spatial Strategy) shows 30,800 new homes are to be built in SG to 2026. After 2026 South Gloucester have stated that they expect the rate of house-building to be the same as the current rate of growth (0.8% per year). The assumed housing projections are shown below in Table 3.

Table 3: SG housing projections. Note that Draft RSS allocation is to 2026

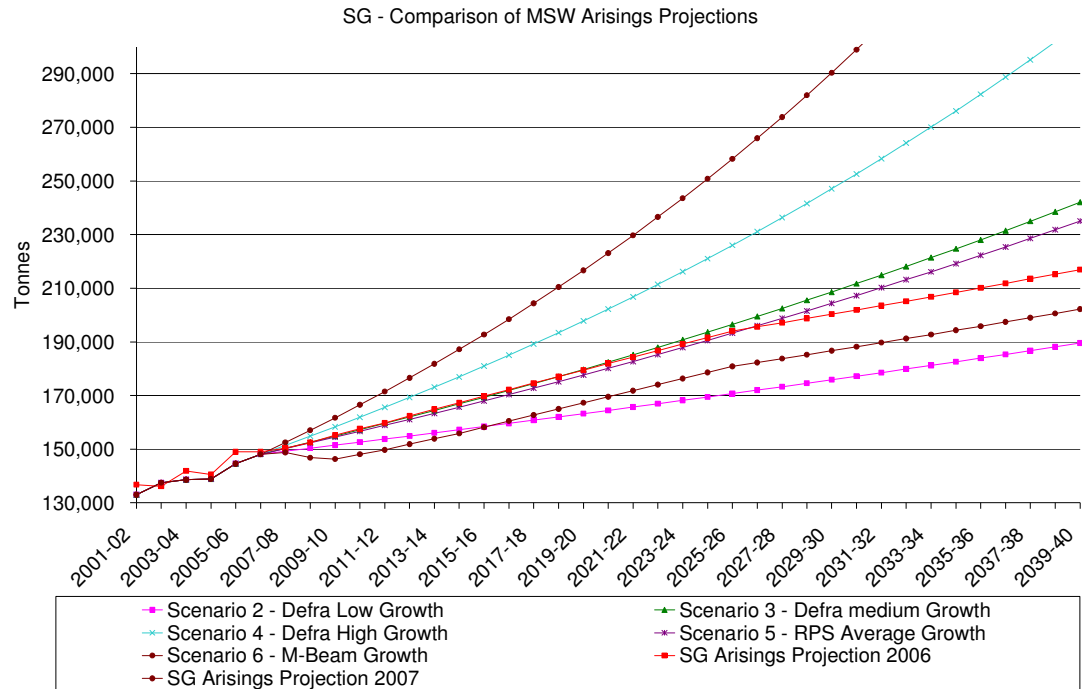
Year	Total houses	Net additional per annum
2000/01		
2001/02	102,237	
2002/03	102,852	
2003/04	103,770	
2004/05	104,407	
2005-06	105,035	
2006-07	105,974	628
2007-08	106,545	939
2008-09	107,803	571
2009-10	109,518	1,258
2010-11	110,973	1,715
2011-12	112,343	1,455
2012-13	114,070	1,370
2013-14	115,706	1,727
2014-15	117,352	1,636
2015-16	119,108	1,646
2016-17	120,814	1,756

Year	Total houses	Net additional per annum
2017-18	122,520	1,706
2018-19	124,226	1,706
2019-20	125,932	1,706
2020-21	127,638	1,706
2021-22	129,344	1,706
2022-23	131,050	1,706
2023-24	132,756	1,706
2024-25	134,462	1,706
2025-26	136,168	1,706
2026-27	137,257	1,089
2027-28	138,355	1,098
2028-29	139,462	1,107
2029-30	140,578	1,116
2030-31	141,703	1,125
2031-32	142,836	1,134
2032-33	143,979	1,143
2033-34	145,131	1,152
2034-35	146,292	1,161
2035-36	147,462	1,170
2036-37	148,642	1,180
2037-38	149,831	1,189
2038-39	151,030	1,199
2039-40	152,238	1,208
2040-41	153,456	1,218
2041-42	154,683	1,228
2042-43	155,921	1,237
2043-44	157,168	1,247

Aggregating the ‘per household’ social arisings assumptions agreed above with the number of new houses determines the projection of total MSW. Figure 4 compares the total quantity of MSW generated between 2001/02 and 2039/40 in South Gloucestershire applying the three agreed projection scenarios

- Household Waste – Projection B
- HWRC waste – Projection Z
- Other Waste – Projection B

Figure 4: Total MSW comparing DEFRA, RPS, M-BEAM and Jacobs projections



By comparing the TOA 2005/06 waste arisings scenario for SG with the 2006/7 waste arising scenario, it can be seen that the 2007 scenario assumes 14,750 tonnes less MSW arising in 2039/40 than previously predicted in the 2006 scenario. The 2007 SG arisings scenario lies between the DEFRA low and medium growth projections. Across the period 2006/07 to 2019/20 this equates to an average waste arisings growth rate of approximately 1.0%. Over the period to 2039/40, the equivalent waste arisings average growth rate is 1.4%.

3 CAPTURE RATE ASSUMPTIONS

3.1 Targeted

The assumed proportion of each waste category targeted in the SQ and PSI scenario were identified and summarised in Table 4. The composition provided by SG did not contain sufficient detail on categorisation to determine an accurate targeted %, therefore the percentage targeted is based on the national statistics.

These figures have not changed from those agreed at the Capture Rate and Waste Arisings workshop on 24 September 2007.

Table 4 includes the SQ position at the time of the Technical Options Appraisal (TOA) in 2006 (column 2). This is to illustrate the comparison with the most recent modelling for 2006/07 (column 3).

Table 4: Material Targeted in Capture Rate Model

Material		SQ 2005/06	SQ 2006/07	PSI	Notes
Paper ¹		61%	61%	61%	Current scheme targets newspapers, magazines, white and coloured paper. No increase is anticipated.
Textiles		50%	50%	50%	Textiles already targeted, therefore no increase anticipated.
Mixed Cans		98%	98%	98%	The Authority already target both Ferrous & Non Ferrous cans, therefore no increase anticipated.
Glass		94%	94%	94%	The Authority already target all glass, therefore no increase anticipated.
Garden Waste & Cardboard	Garden Waste	93%	93%	93%	The Authority already target principal components of garden waste, therefore no increase anticipated.
	Cardboard ²	22%	22%	22%	The Authority already target principal components of cardboard, therefore no increase anticipated.
Kitchen Waste		0%	0%	97%	The Authority do not currently collect kitchen waste, from 2008/09 onwards they aim to target the principal components.

¹ The percentage of paper targeted is the percentage of paper in the paper and card stream

² The percentage of cardboard targeted is the percentage of cardboard in the paper and card stream

3.2 Roll Out

The SQ and PSI roll out figures have been updated from the TOA position based on the outcomes of the Capture Rate and Waste Arisings workshop. There have been no changes to roll out figures in order to help SG reach the recycling and composting target. The updated roll out assumptions are summarised in Table 5.

Table 5: Level of Roll Out in Capture Rate Model

Material		SQ 2005/06	SQ 2006/07	PSI	Notes
Paper		98%	98%	98%	The Authority do not propose any changes to these services.
Textiles		98%	98%	98%	
Mixed Cans		98%	98%	98%	
Glass		98%	98%	98%	
Garden Waste & Cardboard	Garden Waste	97%	98 ³ %	97%	Garden waste and cardboard collection roll out is expected to increase slightly to cover 98% of households by 2008/09.
	Cardboard	97%	97%	98%	
Kitchen Waste		0%	0%	93%	Kitchen waste roll out will start in 2008/09 at 25%, increasing to 75% in 2009/10 and 93% in 2010/11 ⁴ .

3.3 Participation

The SQ and PSI participation figures have been updated based on information provided by SG at the Capture Rate and Waste Arisings workshop. Table 6 shows a summary of the updated participation rate assumptions. There have been no changes to participation rates in order to help SG reach the recycling and composting target.

Table 6: Level of Participation in Capture Rate Model

Material		SQ 2005/06	SQ 2006/07	PSI	Notes
Paper		80%	83%	90%	Paper participation increases annually up to 90% from 2006/7 to 2011/12
Textiles		30%	30%	40%	Participation increases annually up to 40% from 2006/7 to 2014/15
Mixed Cans		75%	75%	85%	Participation increases annually up to 85% from 2006/7 to 2014/15
Glass		80%	80%	90%	Participation increases annually up to 90% from 2006/7 to 2011/12
Garden	Garden Waste	98%	98%	98%	Garden waste & Cardboard

³ This scheme is a paid for opt in scheme that is offered city wide

⁴ This is assumes that the service will run to half the properties for six months in 2008/9, and all remaining properties for six months in 2009/10.

Material		SQ 2005/06	SQ 2006/07	PSI	Notes
Waste & Cardboard	Cardboard	98%	98%	98%	participation assumed to remain constant
Kitchen Waste		0%	0%	80%	It is assumed that participation will start at 70% when the scheme is introduced in 2007/08 and will increase annually to 80% by 2010/11.

3.4 Recognition

The back calculation of recognition rates for the SQ has been updated as a result of new waste arisings data supplied by SG and changes extra changes to Targeted as described above. In addition, recognition rates for paper have been manually increased to 90% and mixed cans increased to 85% after consultation with SG regarding improvements to meet the recycling and composting targets.

The updated recognition rates are described below in Table 7.

Table 7: Level of Recognition in Capture Rate Model

Material		SQ 2005/06	SQ 2006/07	PSI	Notes
Paper		85%	86%	90%	Recognition assumed to increase by 1% per annum from 86% in 2015/16 until 90% is attained in 2019/20
Textiles		43%	43%	43%	Assumed that recognition remains constant at 43%.
Mixed Cans		73%	78%	85% by 2019/20	It is assumed that beyond 2015/16, recognition will increase steadily from 78% to 85% by 2019/20
Glass		94%	99%	99%	Consistent education and awareness initiatives will maintain these already high levels
Garden Waste & Cardboard	Garden Waste	79%	100%	100%	
	Cardboard	71%	98%	98%	
Kitchen Waste		0%	0%	90%	Recognition for the kitchen waste is expected to achieve 90% recognition when the scheme is rolled out in 2008/09.

3.5 Capture Rate

Capture rates for collected materials have been updated to take into account the updated assumptions on targeted, roll out, participation and recognition assumptions. The updated capture rates are shown in Table 8.

Table 8: Maximum projected Capture Rate in Capture Rate Model

Material		SQ 2005/06	SQ 2006/07	PSI
Paper		41%	43%	49% by 2019/20
Textiles		6%	6%	8% by 2011/12
Mixed Cans		53%	56%	69% by 2009/10
Glass		75%	73%	82% by 2011/12
Garden Waste & Cardboard	Garden Waste	88%	89%	89%
	Cardboard	23%	23%	23%
Kitchen Waste		0%	0%	65% by 2010/11

3.6 Bring Banks

Changes in the projected number of bring banks were discussed at the assumptions workshop. PSI capture rates for bring banks have been updated as a result. These updates are represented in Table 9. One change has been made to bring bank capture rates in order to meet the recycling and composting target; this is to increase the quantity of plastics captured.

Table 9: Bring Bank Capture Rates

Material	SQ2005/06	SQ 2006/07	PSI
Paper	7%	6%	6%
Plastics	2%	5%	8% by 2007/08
Textiles	5%	10%	10%
Mixed Cans	7%	9%	9%
Glass	41%	44%	44%

3.7 HWRC's

Capture rates at the HWRCs have been updated as a result of new waste arisings data supplied by SG. Table 10 shows the updated capture rates for HWRCs. After

consultation with SG it was agreed to change the PSI capture rate for green waste to 27% as part of meeting the recycling and composting target.

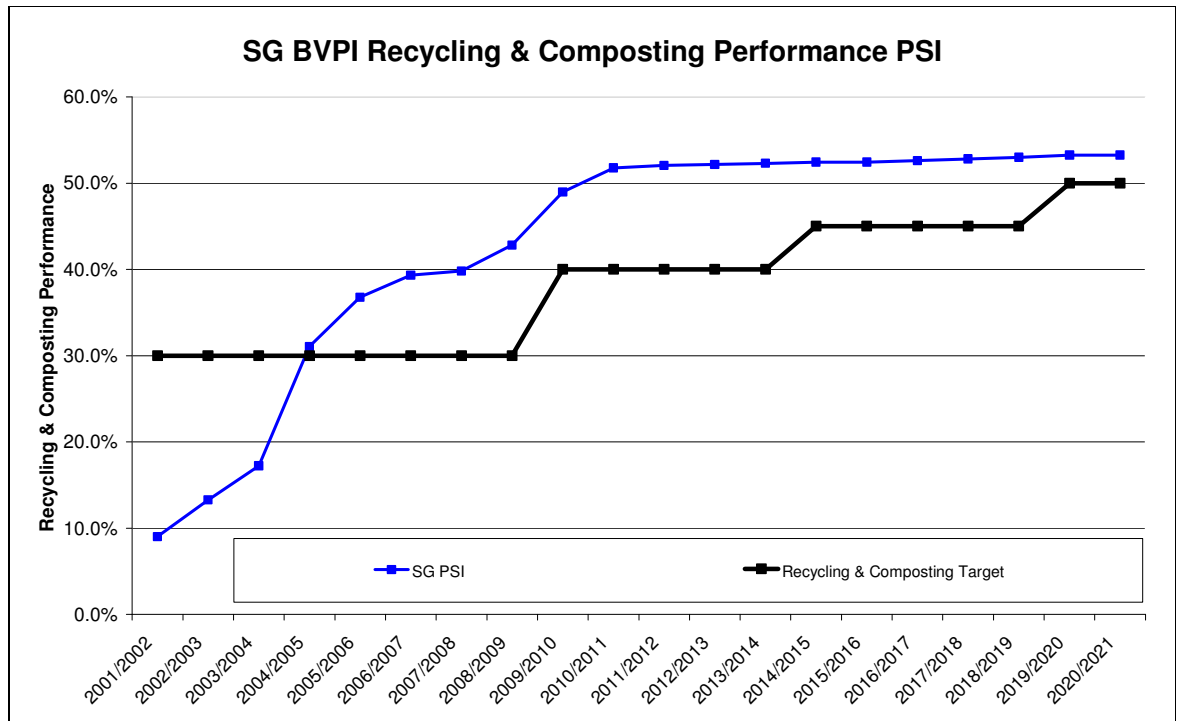
Table 10: HWRC Capture Rates

Material	SQ2005/06	SQ 2006/07	PSI
Recyclables	60%	69%	Increasing steadily to 78% by 2014/15
Green Waste	9%	23%	Increasing steadily beyond 2015/16 until 27% achieved by 2019/20

1.1 Projected Capture Rate Performance

Applying the capture rate assumptions detailed above enables SG to reach the 50% recycling and composting target by 2020. This is illustrated in Figure 5.

Figure 5: SG’s Projected PSI Recycling and Composting Performance



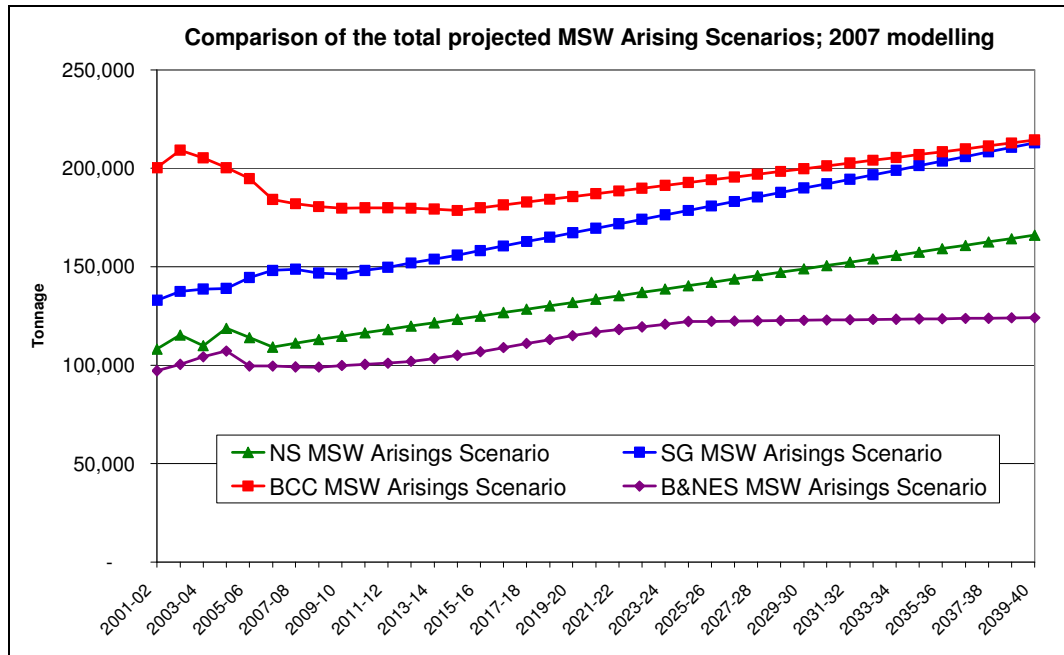
The waste arisings scenario has been applied to the Jacobs Capture Rate model, which uses the capture rate assumptions shown above to determine the quantities of materials captured.

From this quantity Jacobs has determined the performance against BVPI recycling and composting targets, and also the effect that source segregation has on South Gloucestershire performance against LATS allowances.

The quantity of materials captured has been deducted from the total waste arisings to determine the quantity of residual MSW that is available for processing. This quantity has been taken forward to the Jacobs technology model, the outputs of which are being applied to the Joint Waste Strategy.

This waste arisings scenario for South Gloucestershire is compared to the other Partnership authorities in Figure 6.

Figure 6: Comparison of waste arisings scenarios across the Partnership



The tonnage projections by waste stream, under the PSI scenario, that are output from the capture rate model are shown in Figure 7.

Figure 7: SG's Projected Tonnages to 2020

Contract Year	Year													
	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
MSW Input	148,099	148,730	146,792	146,296	148,067	149,720	151,844	153,842	155,848	158,181	160,446	162,712	164,977	167,243
Household	97,926	98,296	99,298	100,716	101,891	102,983	104,399	105,727	107,060	108,662	110,218	111,774	113,331	114,887
HWRC	44,232	44,470	41,470	39,470	39,995	40,488	41,111	41,700	42,294	42,927	43,541	44,156	44,771	45,386
Bing Banks	2,397	2,508	2,459	2,417	2,368	2,316	2,345	2,372	2,400	2,436	2,459	2,483	2,506	2,529
Other MSW	5,941	5,963	6,024	6,110	6,182	6,248	6,334	6,414	6,495	6,592	6,687	6,781	6,876	6,970
MSW Output	148,099	148,730	146,792	146,296	148,067	149,720	151,844	153,842	155,848	158,181	160,446	162,712	164,977	167,243
<i>Jacobs check - DOES THIS EQUAL TOTAL MSW?</i>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Kerbside Recycling Collection														
HH - Paper & Cardboard	100%	9,386	9,580	9,839	10,142	10,425	10,703	10,850	10,988	11,127	11,293	11,597	11,904	12,216
HH - Plastics	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
HH - Glass	0%	5,641	5,804	6,006	6,237	6,456	6,674	6,766	6,852	6,938	7,042	7,143	7,244	7,344
HH - Ferrous Cans (or Fe & Al where mixed)	0%	961	980	1,007	1,037	1,066	1,095	1,127	1,158	1,190	1,208	1,251	1,296	1,340
HH - Non-ferrous Cans (where Al is separate)	0%	95	97	100	103	106	109	112	115	118	120	124	129	133
HH - Kitchen	100%	0	0	3,654	11,624	15,216	15,379	15,590	15,788	15,988	16,227	16,459	16,692	16,924
HH - Garden Waste only	100%	21,841	21,999	22,299	22,695	22,960	23,206	23,525	23,824	24,124	24,495	24,836	25,187	25,537
HH - Textiles	50%	189	198	208	219	229	240	252	264	276	280	284	288	292
HH - Other (aerosols, books etc.) - please specify here	0%	3	3	3	3	3	3	3	3	3	3	3	3	4
Kerbside Recycling Sub Total		38,116	38,661	43,115	52,060	56,461	57,408	58,225	58,993	59,764	60,558	61,698	62,742	63,790
Kerbside Total		95,529	95,788	96,639	96,299	99,522	100,668	102,054	103,355	104,660	106,226	107,759	109,292	110,825
<i>Jacobs check on kerbside sub-total</i>		0	0	0	0	0	0	0	0	0	0	0	0	0
Bing Banks														
BB - Paper & Cardboard	100%	774	767	765	766	765	763	773	783	793	805	808	810	813
BB - Plastics	0%	322	500	505	512	518	524	531	538	545	553	551	569	576
BB - Glass	0%	922	863	809	756	700	642	651	660	668	678	688	697	707
BB - Ferrous Cans (or Fe & Al where mixed)	0%	70	69	68	67	67	66	65	64	63	64	63	61	59
BB - Non-ferrous Cans (where Al is separate)	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
BB - Textiles	50%	279	279	281	285	287	289	292	295	298	303	307	311	316
BB - Other (aerosols, books etc.) - please specify here	88%	30	30	30	31	31	31	32	32	33	33	34	34	35
Bing Banks Sub-Total		2,397	2,508	2,459	2,417	2,368	2,316	2,345	2,372	2,400	2,436	2,459	2,483	2,506
<i>Jacobs check on bing banks sub-total</i>		TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Other Recycling/composting														
Other - Sweepings - Leaf Fall	100%	0	0	0	0	0	0	0	0	0	0	0	0	0
Other - Collected Trade Waste	76%	0	0	0	0	0	0	0	0	0	0	0	0	0
Residual Waste Collections														
HH - Black Bag/ Bin Collection	68%	57,413	57,126	53,724	46,239	43,061	43,260	43,830	44,362	44,896	45,568	46,061	46,550	47,035
Other - Collected Trade Waste	68%	0	0	0	0	0	0	0	0	0	0	0	0	0
Other - Clinical	68%	14	14	14	14	15	15	15	15	15	16	16	16	16
Other - Street sweepings/ cleansing + dog bin waste	59%	3,124	3,136	3,168	3,213	3,250	3,285	3,331	3,373	3,415	3,466	3,516	3,566	3,615
Other - Gully Waste	68%	0	0	0	0	0	0	0	0	0	0	0	0	0
Other - Sweepings - Leaf Fall	100%	0	0	0	0	0	0	0	0	0	0	0	0	0
Other - Parks litter	68%	0	0	0	0	0	0	0	0	0	0	0	0	0
Other - Fly-tipped, ELVs, Grass & leaves in parks	68%	0	0	0	0	0	0	0	0	0	0	0	0	0
Other - fly-tipped	68%	794	797	805	817	826	835	846	857	868	881	894	906	919
Other - Specials	68%	0	0	0	0	0	0	0	0	0	0	0	0	0
Other - Bulkies, housing refurb, community waste	68%	1,489	1,495	1,510	1,531	1,549	1,566	1,587	1,608	1,628	1,652	1,676	1,700	1,723
Other - Charity + Relets (Sch 2 waste)	68%	520	522	527	535	541	547	554	561	569	577	585	594	602
HWRC														
HWRC - Paper & Cardboard	100%	732	749	710	687	708	728	751	774	797	809	820	832	844
HWRC - Paper & Cardboard (Books)	100%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - Plastics	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - Textiles	50%	163	167	158	153	158	162	167	172	177	180	183	185	188
HWRC - Textiles - Shoes	50%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - Glass	0%	83	85	81	78	80	83	85	88	90	92	93	94	96
HWRC - Ferrous metal	0%	3,593	3,675	3,485	3,373	3,474	3,574	3,666	3,758	3,811	3,970	4,027	4,084	4,140
HWRC - Non-ferrous metal	0%	56	57	54	53	54	55	57	59	61	62	63	64	65
HWRC - Garden Waste	100%	3,901	3,922	3,657	3,481	3,527	3,571	3,626	3,678	3,730	3,786	3,963	4,144	4,328
HWRC - Wood & Chipboard	100%	3,222	3,295	3,125	3,024	3,115	3,205	3,306	3,406	3,507	3,560	3,611	3,662	3,713
HWRC - Fluorescent Tubes	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - Car Batteries	0%	191	195	185	179	185	190	196	202	208	211	214	217	220
HWRC - Domestic Batteries	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - Fridges	0%	828	847	803	777	801	824	850	875	901	915	928	941	954
HWRC - Tyres	0%	105	107	102	99	102	104	108	111	114	116	118	119	121
HWRC - Tyres - Incinerated (BVPI 82c)	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - Control	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - CRT's, Mineral Oil, TVs, computer monitors, gas bottles	0%	785	803	761	737	759	781	805	830	855	867	880	892	905
HWRC - Vegetable Oil	100%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - Residual Waste	68%	20,240	20,179	18,660	17,609	17,690	17,754	17,870	17,967	18,061	18,331	18,471	18,607	18,739
HWRC - Soils	0%	0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC - Rubble (Hardcore)	0%	10,333	10,389	9,688	9,221	9,343	9,458	9,604	9,742	9,880	10,028	10,172	10,315	10,459
HWRC Total		44,232	44,470	41,470	39,470	39,995	40,488	41,111	41,700	42,294	42,927	43,541	44,156	44,771
<i>Transferred to Kerbside</i>		0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Jacobs check on HWRC sub-total</i>		0	0	0	0	0	0	0	0	0	0	0	0	0
MSW Input		148,099	148,730	146,792	146,296	148,067	149,720	151,844	153,842	155,848	158,181	160,446	162,712	164,977
<i>Sub-total from breakdown</i>		148,099	148,730	146,792	146,296	148,067	149,720	151,844	153,842	155,848	158,181	160,446	162,712	164,977
<i>Jacobs check - DOES THIS = MSW INPUT?</i>		0	0	0	0	0	0	0	0	0	0	0	0	0
HWRC total		44,232	44,470	41,470	39,470	39,995	40,488	41,111	41,700	42,294	42,927	43,541	44,156	44,771
HWRC Recycling		9,758	9,980	9,465	9,160	9,434	9,705	10,011	10,314	10,622	10,781	10,936	11,090	11,245
HWRC Inerts		10,333	10,389	9,688	9,221	9,343	9,458	9,604	9,742	9,880	10,028	10,172	10,315	10,459
HWRC Green		3,901	3,922	3,657	3,481	3,527	3,571	3,626	3,678	3,730	3,786	3,963	4,144	4,328
HWRC Residual		20,240	20,179	18,660	17,609	17,690	17,754	17,870	17,967	18,061	18,331	18,471	18,607	18,739
Green waste transferred		0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Sub-total from breakdown</i>		44,232	44,470	41,470	39,470	39,995	40,488	41,111	41,700	42,294	42,927	43,541	44,156	44,771
<i>Jacobs check on HWRC sub-total</i>		0	0	0	0	0								