



GLOUCESTERSHIRE  
WASTE PARTNERSHIP



APPENDIX 1

# Joint Waste Programme

## Report on Business Case Update

**Project Name: Business Case Update**

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# EXECUTIVE SUMMARY

## E.1.0 Context

The Gloucestershire authorities have been looking at the case for the joint delivery of waste services to understand both the value of the savings that are achievable and the implications of taking these. This paper summarises the principle outcomes of, and assumptions behind, an updated business case model developed in order to show the scale of savings potentially achievable from the six Gloucestershire districts coming together with the county to form a joint waste partnership. It is intended that the primary audience for this paper is the Finance Officer for each authority and it is designed to be read in conjunction with the accompanying excel business case model.

## E.2.0 The Features of a Joint Waste Partnership

Whilst no final decisions have been made about how the partnership would operate, appropriate groups have identified the likely features of an acceptable arrangement.

The Gloucestershire Waste Partnership (GWP) and Joint Improvement Board (JIB) have agreed the following vision:

*‘By working together the Gloucestershire authorities will deliver more efficient waste services. This will be achieved whilst respecting the local needs and autonomy of each partner’*

GWP and JIB have agreed outline governance arrangements to safeguard the interests of the constituent authorities whilst providing strong and co-ordinated service management.

Finance Officers have agreed the cost-sharing principles that will determine how a joint waste budget is developed. This budget will be the mechanism for determining how service costs (and therefore partnership savings) are equitably distributed between the Gloucestershire partner authorities.

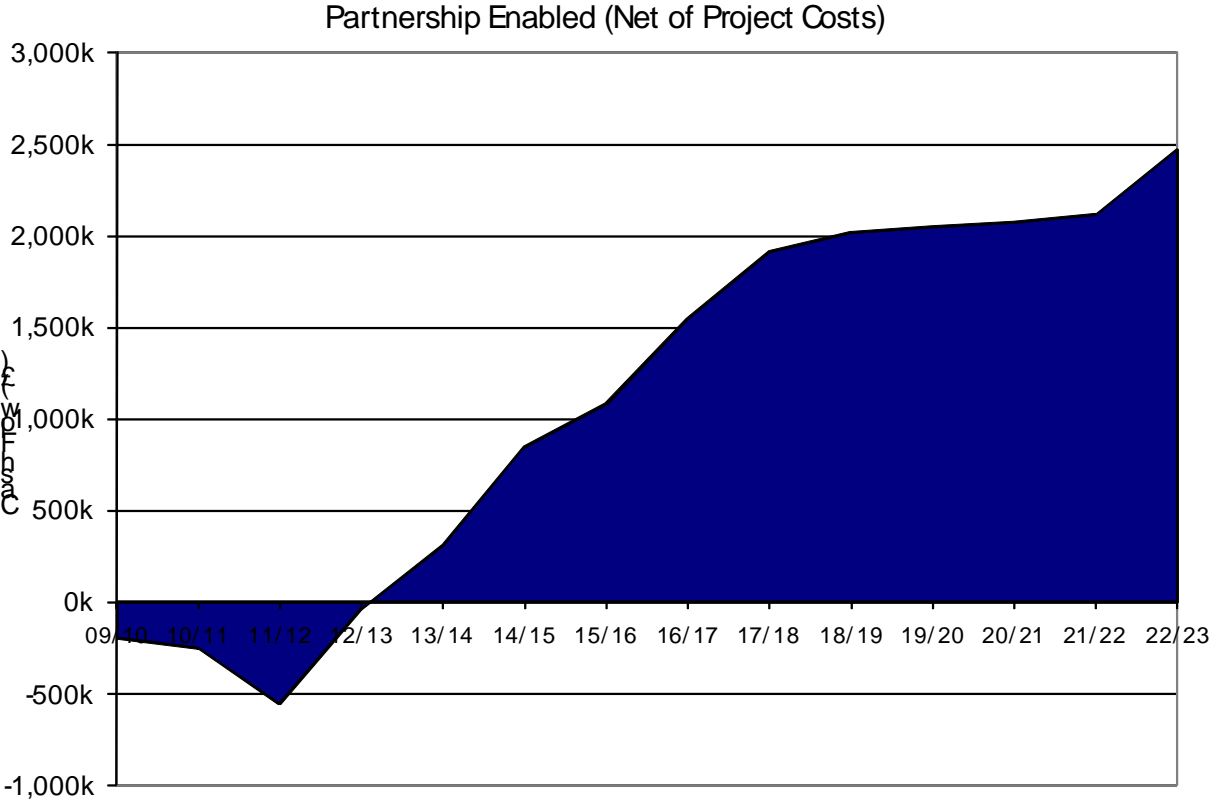
Partners’ existing waste collection contracts do not neatly co-terminate. In the first instance, therefore, the partnership will inherit existing contracts and DSO operations and integrate service management (and governance). This will allow the partnership to deliver early savings whilst enabling the achievement of the larger gains that become possible with full integration of service delivery over time.

## E.3.0 Benefits of a Joint Waste Partnership

The business case shows projected annual savings for the whole of Gloucestershire in the range £1.7m to £3.2m. The business case draws on evidence from the success of the Somerset Waste Partnership which formed in 2007. As with Somerset, and on the basis of Gloucestershire specific studies, the business case anticipates savings from rationalising collection and disposal depots, joint service management, joint service delivery, and the economies that follow from increased purchasing power.

The timing for the achievement of savings relates to the timing of rationalisation of depot infrastructure and the timing for the integration of the various waste collection operations. However short-term savings are also achievable to ensure an early return on investment. The cash-flow for mid-point partnership savings is shown at Figure E-1.

**Figure E-1: Annual Cash Flow – Partnership Savings**



The project has also tested the financial impact of the Gloucestershire authorities achieving their Joint Municipal Waste Management Strategy aspiration to achieve a whole-county recycling rate of 60%. Whilst there is a realistic prospect of the partners achieving high performance without the formation of a partnership, to do so is likely to facilitate and expedite these environmental gains.

Given high disposal costs, high recycling performance is financially advantageous. The business case shows financial benefits of £5m from improved recycling net of any further investment in collection services.

### E.4.0 Conclusions

It is hoped that this paper will help the Gloucestershire authorities in their decision on whether to participate in the forming of a joint waste partnership. The business case suggests there are significant savings to be had although understandably the scale and timings of these savings vary for each authority.

Inevitably once a decision has been reached there will be further work to do. This work will generate further questions and challenges, but it will also continue the process that has already begun of developing understanding and trust between the Gloucestershire authorities as they prepare to create a partnership. Should they decide to proceed, authorities will continue to benefit from central government support which remains focussed on promoting such projects to show how in this area, considerable savings can be achieved without impacting service quality.

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## 1.0 Purpose

Eunomia is pleased to present this report which re-visits and updates the business case associated with the integration of waste service delivery in Gloucestershire. The updates presented here are underpinned by the experience Eunomia has acquired in supporting the delivery of the Somerset Waste Partnership, as well as in the work that we have recently undertaken for the Dorset and Buckinghamshire waste partnerships.

This report briefly describes the updates that have been made to the business case model, before presenting the results of the updated business case for the Gloucestershire waste services partnership. The update also includes a new element in the business case which looks at the potential costs and savings associated with moving towards an enhanced harmonised collection service across Gloucestershire.

## 2.0 Context

The Gloucestershire authorities have been looking at the case for the joint delivery of waste service to understand both the value of the savings that are achievable and the implications of taking these. Eunomia has been supporting the authorities in understanding the scale of these benefits to support decision-making regarding the possible formation of a county-wide organisation responsible for all waste and recycling collection, treatment and disposal.

A business case which looked at the benefit of joint delivery of waste services in Gloucestershire was prepared and signed-off by finance officers in 2008. Following this work the Joint Improvement Board (JIB) instructed that a member-led Shadow Joint Waste Board (SJWB) be formed to bring forward proposals for authorities to consider. The SJWB requested in early 2010 that the business case be re-cast to take account of various changes since 2008.

This report presents that work; it is expected that it will be read and considered primarily by finance officers as a means of engaging with the business case model itself. An earlier version of this paper (v0.9) circulated to Finance Officers along with the accompanying Business Case Update Model generated several clarification questions. These have mostly been dealt with verbally but where a written response has been provided, these responses have been included within this document as Appendix A.1.0.

## 3.0 Business Case Model Enhancements

This section highlights the key changes that have been made to the previous Gloucestershire Waste Partnership business case for this update report.

### 3.1.1 Infrastructure

The partnership provides a direct opportunity for the optimisation of current infrastructure across Gloucestershire; the savings derived from this optimisation will vary according to the current ownership of the infrastructure, its potential market value where applicable, and the new infrastructure configuration that is likely to be adopted. The assumptions associated with infrastructure for the Gloucestershire partnership have been updated as follows:

- Current costs associated with depots and waste transfer stations (WTS) have been updated to reflect actual values where known. It is worth noting that no savings are now assumed relating to the depot at Eastington or the depot at Lower Lode. In

addition, because the Swindon Road depot is used in one of the two central scenarios used to calculate the potential new infrastructure costs for the whole partnership (described below), then its whole value cannot be included in the business case as a potential saving. 50% of the value of this depot is treated as a possible saving (given that half of the scenarios rely upon its use and half do not).

- The business case is based on the depot at Eastern Avenue sitting outside the partnership. This depot would remain, with Gloucester City continuing to pay for it and their staff reporting there. This means that the strategic depot modelled in this version of the business case is slightly smaller than previously, given that it is not required to accommodate Gloucester City's workforce. Gloucester City is no longer modelled as contributing to the costs of the strategic depot.
- The original business case was based on moving from seven depots and three WTS, to two-two and a half WTS, one strategic depot, two waste and streets depots and three streets depots.
- The updated business case is based on the average cost between two central scenarios currently forming part of the infrastructure optimisation workstream, which are as follows:
  - One strategic depot, transfer station depots in both Forest of Dean and Cotswold, and satellite streets depots in Cirencester and Cheltenham.
  - One strategic depot, transfer station depots at Swindon Road (Cheltenham) and in Forest of Dean, and a satellite streets depot in Cirencester.
- The costs of the new infrastructure are based on an average capital cost of £375k for a satellite streets depot, £1,000k for the strategic depot, and £1,300k for the combined depot and transfer stations (required at Forest of Dean and either Swindon Road or in Cotswold). Haulage costs for residual waste at the transfer station depots are based upon the number of vehicles that would be likely to tip at each transfer station and the associated tonnage to be hauled from that location. The annual cost of financing new depots is calculated based on a 4.76% interest rate paid over a 25 year period; this interest rate represents the 10 year average 50 month + fixed rate from the Public Works Loan Board.
- An earlier iteration of the updated business case included haulage for residual waste for the two new infrastructure scenarios referred to above but did not include the cost of haulage for garden and food waste. An adjustment has therefore been made to the model for an additional £324k per annum haulage cost (based on the current cost) and is apportioned 100% to the County. Since current costs have been used this represents a conservative estimate as it is likely that the final infrastructure option chosen will offer efficiencies in the transfer of garden and food waste.

### 3.1.2 Vehicles

No changes have been made to vehicle cover, vehicle financing or vehicle procurement savings in relation to the original business case.

### 3.1.3 Operational Management

No changes have been made to savings associated with a reduction in operational management in relation to the original business case. Operational management savings are linked to the number of depots from which the collection services would be operated, and as such can be considered a direct consequence of the partnership.

### 3.1.4 Front-Line Workforce

Integration costs for the front-line workforce are also taken into account within the business case and are here updated according to the financial risk analysis work that was undertaken in November 2009, based on updated numbers of staff in the front office and their current salaries (where available). The potential integration costs would be a direct result of jointly procuring the collection service as a partnership, and are governed by the decision as to whether the joint collection service would be in-house or contracted out.

No decision has yet been made as to whether services should be operated by an in-house workforce or via a contract with the private sector, with both approaches being currently in use across the county. Both options are therefore considered within the business case and are combined in the mid-range result figures that are presented. This approach reveals the labour cost impact of one or other approach for those interested in the detail of the modelling (finance officers) but avoids the introduction of additional complexity for those looking for a high-level answer to the question “how much is the partnership worth?”.

For the in-house scenario, the following assumptions have been made:

- Where an individual’s salary is currently below the average of the comparable salaries across all authorities, the salaries for these staff would shift upwards to the average salary across the authorities;
- Where an individual’s salary is already above the average, they would remain on their current terms and conditions; and
- New joiners would also enter at the average existing salary across the authorities.

The result of this harmonisation in the in-house scenario leads to an average increase in salaries of around £138k per annum between 2013/14 and 2021/22. In addition, the requirement to offer a local government pension to those staff currently working for a private contractor would lead to an increase in pension costs of around £605k per annum (based on a 17% employer contribution).

In contrast, in a contracted out situation, it is assumed that individuals remain on their current terms and conditions, with new joiners entering at the average existing salary across the authorities. Workforce integration in the contracted-out situation would actually generate a small amount of savings over time; new joiners would be offered a private rather than local government pension which offsets the slight increase in salaries to generate an overall saving of approximately £120k per annum. However, a profit margin would also have to be factored into the contracted-out scenario – a 12% profit margin (calculated on the service provider costs (2008/09) for Cheltenham BC and Tewkesbury BC) has subsequently been added to the integration costs for the outsourced scenario, totalling £518k per annum and generating an overall integration cost of £398k per annum.

Given that a decision has yet to be made on whether the service should be brought in-house or contracted out, the integration costs of £743k and £398k for the in-house and contracted-out scenarios therefore constitute the upper and lower case integration costs in the business case presented here.

No changes have been made to the savings associated with labour cover in relation to the original business case; thus it is assumed that a 1 to 2% saving can be made on labour cover costs as a direct result of the joint collection service and hence of the partnership.



### 3.1.5 Back Office

Following the Business Process Analysis (BPA) work that has been carried out in Gloucestershire and the up-to-date information that has been obtained on the potentially in-scope roles and processes, the savings associated with the formation of a single back-office waste management team have been updated. Based on our recent experience in Buckinghamshire, the savings associated with the back-office will most likely be derived from a combination of the following three factors:

- 1) Duplication of workload across all levels of staff, across both the county and the district teams: 26 of 72 processes were duplicated in Buckinghamshire between the county and the districts, and there were another ten processes to which both tiers contributed.
- 2) Reduction in the movement of data and money between the two tiers leads to further savings when the county are considered part of the single waste management team.
- 3) Ability to further optimise the roles and partial FTEs (full-time equivalents) if integrating vertically as well as horizontally, particularly at management level.

We have assumed that a 16-26% saving can be made in the back office. This saving is similar to that which was projected in the original business case, although the range is narrower than that which was previously projected (based on our increased knowledge of the Gloucestershire situation and recent work in Buckinghamshire which confirms our previous expectation). In this business case we have factored in the cost of an additional FTE to lead on the shorter-term service improvements that are discussed in Section 3.1.7.

The original business case contained the requirement for additional support service costs for the new back office team, rather than assuming that the formation of this team could be cost neutral or even lead to any savings 'back at the ranch'. In this updated business case, the support service costs remain, and have been increased slightly to ensure sufficient costs have been taken into account for IT. However, we have also assumed that given sufficient incentive to achieve savings within each authority, £40k per annum of current support service costs can be found by five of the six districts with only £20k per annum to be achieved by Gloucester City (taking into account their small client-side and recent organisation into neighbourhood teams) and £80k by the county (given the increased size of the support services required by this authority). These savings will be found from a variety of sources, including rationalising office space, sale or transfer of redundant equipment, and the re-organisation of partial FTEs in support services as other services also undergo efficiency reviews and business process re-engineering type activities.

### 3.1.6 Better Market Response

No changes have been made to the original business case relating to better market response to larger procurements, the original assumptions being robust.

### 3.1.7 Short and Medium Term Productivity Savings

In the original business case, savings related to increased productivity of the waste collection services were given as 5-7% of the current service provider costs. This figure was based on a conservative estimate compared to the savings obtained from the joint collection service in Somerset, where the savings obtained were around 12%. In this updated business case, savings of between 6-8% are projected in relation to medium-term productivity gains for a single collection service.

The updated business case also now contains an element of savings related to shorter-term productivity gains. In the short term, we have modelled that there would be a series of

efficiency reviews across the districts; it is projected that these reviews will generate productivity gains of £150k for three out of the six districts. This figure is based on work we have undertaken elsewhere in relation to increased waste collection service productivity. It is worth noting that we have modelled an additional member of staff that would be employed to lead on delivery of the short-term productivity gains.

The combined overall savings in relation to short and medium term increases in productivity are thus calculated as 9-11% of the total service provider costs.

Savings associated with a reduction in the number of procurements required for the collection service were missing in the original business case model. It should be possible to reduce the number of procurements required from four to two every seven years in the initial set-up of the partnership, followed by a reduction to one procurement every seven years once all partners sit under a single joint collection service. It is worth noting that it would also be possible to reduce the number of procurements by letting a longer contract – for example in Somerset the collection contract has been let with a minimum term of seven years but extendable up to 21 years.

## 4.0 Updated Business Case: Existing Collection Services

This section outlines the costs and savings that would directly result from the formation of a waste partnership in Gloucestershire, without the need to harmonise services across the county. The costs and savings included in the business case are presented in Table 4-1.

The original business case calculated savings of between £1 million and £2.4 million per annum from the partnership. With the additional updates provided in this re-visit to the business case, the overall savings presented in Table 4-1 are now projected at between £1.7million and £3.2 million per annum, based on all authorities have entered into the joint collection service with existing services.

Key drivers of the significant increase in overall savings are as follows:

- 1) The change in infrastructure configuration – the new configuration is now modelled based on reducing the current number of separate transfer stations from three to zero, with one strategic depot (not requiring a transfer station element), two waste and streets transfer station depots, and either one or two street cleansing depots subsequently required. The main difference between this assumption and the original business case is in the higher number of transfer stations that are subsequently released, the lower number of new street cleansing depots that are required, counterbalanced slightly by the reduction in savings that can be achieved from the existing depot infrastructure.
- 2) Medium and short-term productivity gains – the productivity savings that can be achieved from the joint collection service have been increased from 5-7% to 6-8%, and an additional 3% short-term productivity gain has been added to the model.
- 3) ‘Back at the ranch’ overheads savings and savings associated with a small reduction in the number of procurements required have now been factored into the business case.

**Table 4-1: Full-Year Effect Costs and Savings based on All Authorities having Entered into Joint Collection Service with Existing Services (i.e. post-2022)**

Item	Category	Unit Value (£k)	Number		Saving (£k)		
			Low	High	Low	High	Mid-Point
Depots reduced	Infrastructure	85	4	4	340	340	340
Transfer stations reduced	Infrastructure	446	3	3	1,337	1,337	1,337
New strategic depot	Infrastructure	132	1	1	-132	-132	-132
New waste/streets depot	Infrastructure	301*	2	2	-1,065	-787	-926
New streets depot	Infrastructure	35	1	2	-35	-69	-52
Ops managers	Operational management	36	1	2	36	73	55
Asst ops managers	Operational management	30	1	2	30	60	45
Supervisors	Operational management	19	2	4	39	77	58
Vehicle cover (1%)	Vehicles	24	1	2	24	48	36
Labour cover (1%)	Front-line workforce	101	0.5	1.5	50	151	101
Vehicle maintenance	Infrastructure	20	3	4	60	80	70
Vehicle procurement	Vehicles	21	3	5	63	104	83
Vehicle financing	Vehicles	79	1.75	2	139	159	149
Improved market response	Improved market response	97	1	2	97	195	146
Procurement savings	Medium-term productivity gains	19	2	4	39	77	58
Medium-term productivity gains	Medium-term productivity gains	150	6	8	901	1201	1051
Short-term productivity gains	Short-term productivity gains				400	500	450
Client savings	Back office				176	290	233
Integration costs	Front-line workforce				-742	-398	-570
Overheads saving	Back office				300	300	300
Support service costs	Back office				-357	-357	-357
<b>Total</b>					<b>1,698</b>	<b>3,248</b>	<b>2,473</b>
<b>Per Household</b>					<b>£6.42</b>	<b>£12.28</b>	<b>£9.35</b>

*\*note that the unit value presented here represents an average cost of the two different potential infrastructure scenarios used in the business case modelling (see Section 3.1.1).*

## 5.0 Authority Specific Savings

Given that each authority will want to know in more detail what the overall business case might look like for them, we have attempted in this section to apply a series of high level costs and savings sharing principles to the business case. It should be noted that a series of supplementary reports are available, providing authority-specific views of the business case update.

### 5.1 Costs and Savings Sharing

In modelling costs and savings for each Authority we have, as far as has been possible, applied the cost-sharing principles agreed with finance officers. It is worth emphasising however, that the assumptions described below are only applicable to this business case model, and should only be taken as an indication of how cost-sharing *might* be approached for the Gloucestershire partnership. In reality, should the authorities choose to progress the partnership, then further detailed discussion will be required around the cost-sharing mechanisms to be applied in practice. For the purposes of the modelling presented here, the assumptions are as follows:

#### ➤ Infrastructure

- Savings associated with a reduction in transfer stations are assigned to the County.
- Savings associated with a reduction in depots assigned to the district that currently pays for/runs that depot.
- Costs of the new strategic depot assigned to the districts on a per household basis (this excludes Gloucester City which obtains no costs or savings associated with changes in infrastructure as Eastern Avenue is modelled as outside of the partnership scope for the purposes of this business case).
- Costs of the new transfer depots are shared according to the following set of assumptions:
  - All haulage costs paid for by the County;
  - 40% of the remaining costs for transfer depot are assigned to the county, with the remaining 60% allocated to the districts according to the number of households in each district (this excludes Gloucester City which is modelled as continuing to use Eastern Avenue);
  - For the Swindon Road expansion scenario, 20% of the costs of this transfer depot are assigned to the county, with the remaining 80% allocated to the districts;
  - Given that we do not know and would not want to pre-judge the outcomes of the infrastructure options appraisal, an average value has subsequently been taken across the two central scenarios described in Section 3.1.1 for the purposes of determining the county-district split in this cost-sharing calculation.
- Costs of new streets depots and savings associated with reduced vehicle maintenance space both allocated to the districts according to the number of households in each district (again excluding Gloucester City).

#### ➤ Short-Term Productivity Gains

- In creating the single client team in 2011/12, there will be the potential for the new role within this team to lead on delivering short-term productivity savings prior to the joint collection service. No assumptions are made however regarding where (in which authority) these savings will be found. It is, in our experience, likely that savings of this type will be relatively easily to achieve, but without doing an operational review, we would not like to speculate as to where in practice these might be found. An equal share (i.e. one sixth) of the efficiency gains available has thus been apportioned to each district. It may be that this approach is maintained, even once the operational reviews are completed. If the partnership carries out this work on behalf of the constituent members, it is reasonable that all or some of the savings that are identified will return to the partnership to take forward similar productivity improvement work elsewhere across the partnership, again for the benefit of all.
- **Back Office**
- Based on current headcount, we have modelled that the county will bear 28% of the additional support service costs and receive 28% of the back office savings that are available. The districts will bear the remaining costs and savings associated with the single back office team according to the number of households in each authority.
  - Managing down overheads: these savings are assigned to each individual authority as described in Section 3.1.5; we have modelled that Gloucester City receives £20k, the remaining five districts receive £40k and the county receives £80k of back at the ranch overheads savings.
- All other costs and savings are shared among the districts according to number of households. This includes:
- Vehicle savings;
  - Operational management;
  - Improved market response;
  - Medium-term productivity savings including savings related to reduced number of procurements; and
  - Front-line workforce costs.
- It should be noted that a small adjustment has been made to the number of households figures used in the model since an earlier version of the updated model seen by Finance Officers. This is to ensure that the same figures have been used in both the full business case model and the associated Waste Flow Model. The updated figures have been derived from WasteDataFlow.

## 5.2 Results

The authority-specific benefits derived from applying the cost and savings sharing assumptions (discussed above) to the business case outputs are presented in this section. The savings are illustrated per household for 2014/15 (medium-term planning) and 2022/23 (long-term planning) in Figure 5-1 and Figure 5-2 respectively. The savings are also displayed per authority in Figure 5-3 and Figure 5-4 for 2014/15 and 2022/23 respectively. Savings are shown for the year 2022/23, because it will take until 2022/23 to fully realise

all the costs and savings given in Table 4-1, due to the late integration of Gloucester City within the joint collection service elements of the partnership in 2021/22.

Figure 5-1: Savings per Household (£) in 2014/15

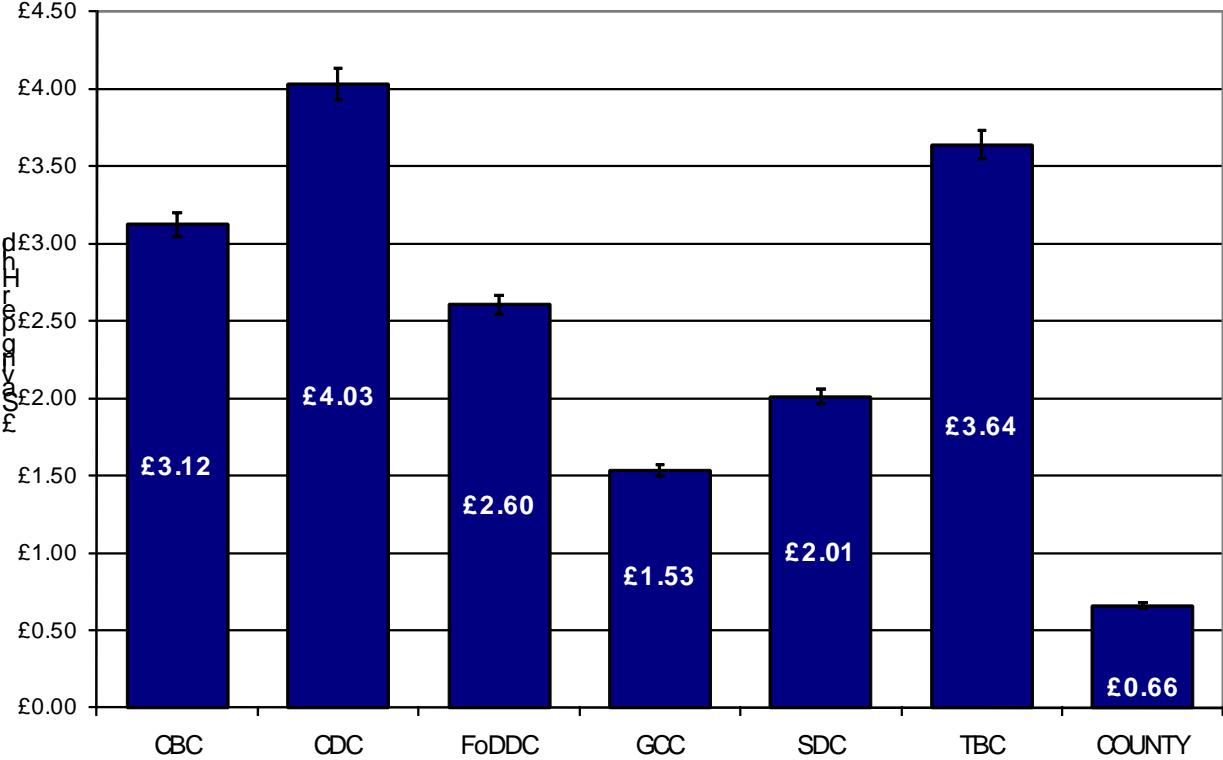


Figure 5-2: Savings per Household (£) in 2022/23

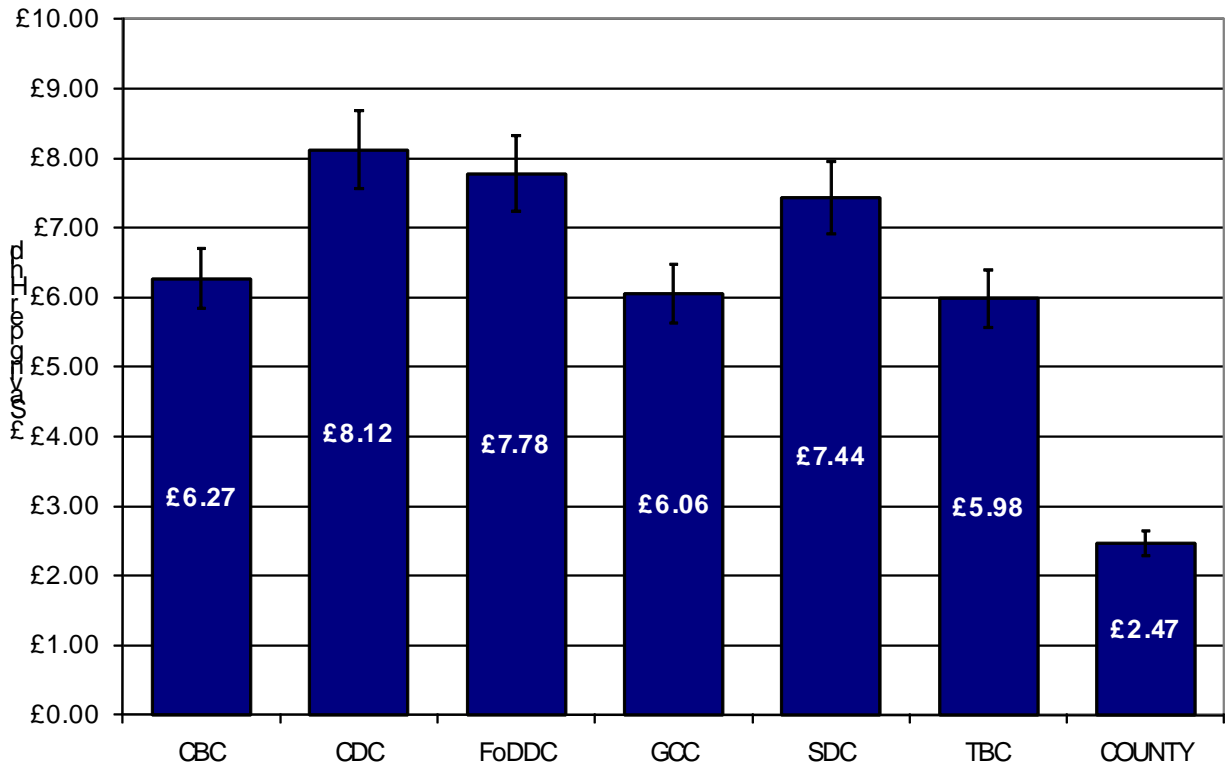
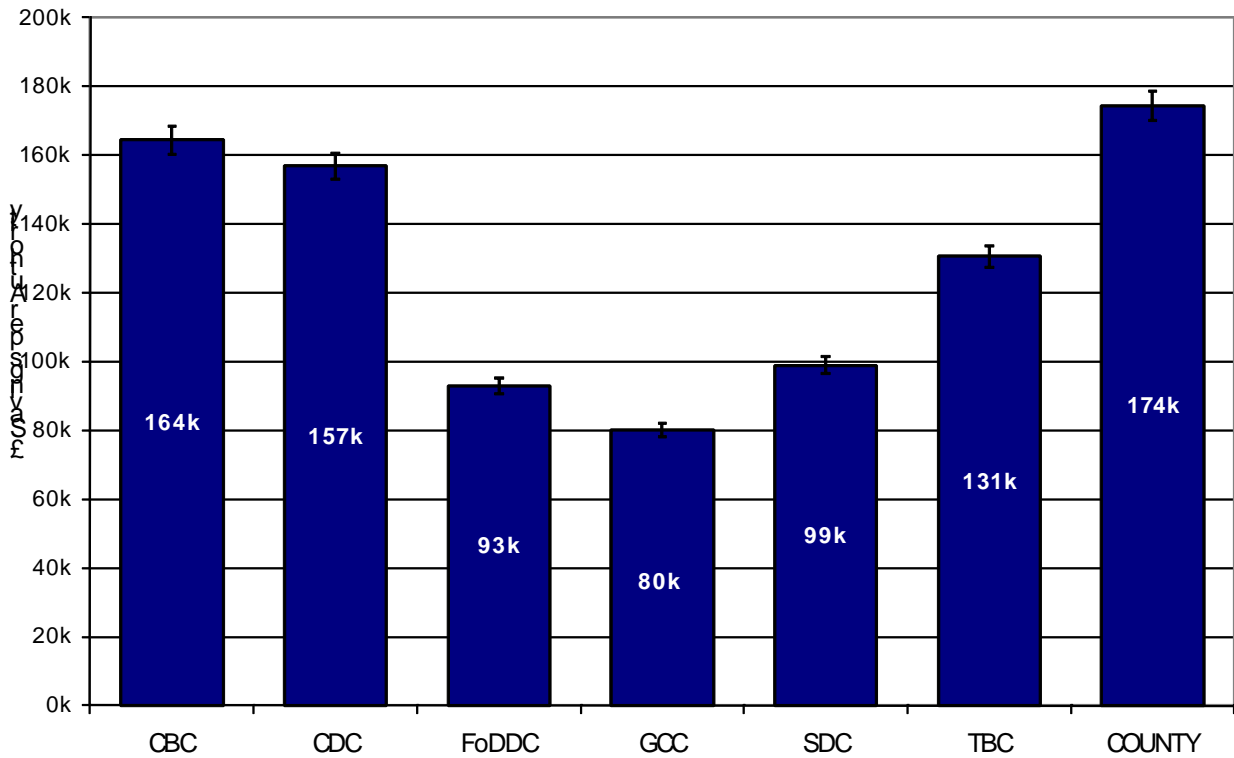


Figure 5-3: Savings per Authority (£) in 2014/15



**Figure 5-4: Savings per Authority (£) in 2022/23**

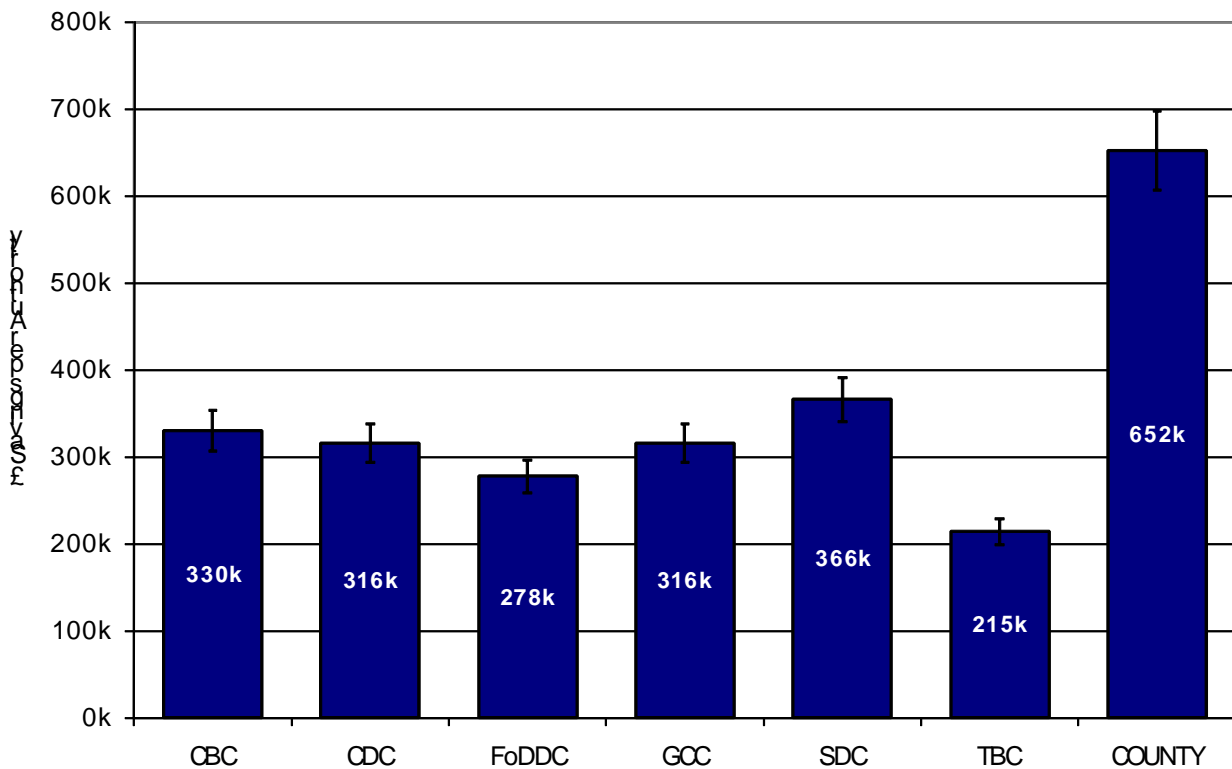


Figure 5-1 and Figure 5-3 show the savings per authority in 20-14/15 i.e. with three of the six districts forming part of a single joint collection service and changes starting to happen to the infrastructure. Hence the savings are more significant for the three districts which could come into the joint collection service in 2013/14 (Cheltenham BC, Cotswold DC and Tewkesbury DC).

Figure 5-2 and Figure 5-4 illustrate the savings per district in 2022/23 when all districts are part of the joint collection service. The savings are illustrated per household in addition to giving the total overall savings per authority in order to illustrate the impact of the business case with and without taking into account the variation in the size of authorities across Gloucestershire.

In 2022/23, the highest savings per household are achieved in Cotswold DC, Forest of Dean DC and Stroud DC, and the lowest are achieved by Tewkesbury BC. The differences between the districts are driven primarily by the current infrastructure that is owned, rented or paid for through current contracts in each district, and the possibility of the subsequent sale or release of this infrastructure as a result of the partnership. Although Cheltenham BC and Tewkesbury BC own their own depots, which could be sold either to the partnership or for other uses, relatively low savings are obtained by these districts relative to Cotswold DC, Forest of Dean DC and Stroud DC, given the assumptions made in Section 3.1.1 that Cheltenham BC only achieve 50 % of the total savings available from the potential release of their depot and that no savings would be available to Tewkesbury BC from the Lower Lode depot.



## 6.0 Benefits of Increased Recycling

To reduce the amount of household waste that requires treatment and disposal, improved and potentially more expensive recycling and composting collection services will be required. The true value of avoided disposal cost savings can only be calculated therefore once any increased cost of these collection services is taken into account.

The combination of existing contractual commitments and recent service changes means that a single integrated service delivery organisation with responsibility for all or most districts, operating a single co-ordinated service is not immediately realistic. However, a WRAP facilitated inter-authority member workshop in February 2010 found general support for the principle of harmonisation of service design over time. Additionally, a number of participants were interested to find fairly significant similarities between current services.

On the basis of the findings of the member workshop and having considered the questions listed above, we have priced enhanced collection services on the basis that all authorities harmonise over time, as contracts and other arrangements allow, around the following basic service:

- Enhanced dry recycling collections (including cans, glass, paper, cardboard and plastic). Tewkesbury are projected to offer a commingled service whilst all others separate materials manually at the kerbside as at present;
- A separate food waste collection;
- Fortnightly refuse collections; and
- A charged garden waste service.

The above service configuration will perform to a high standard (in terms of diverting waste from landfill), will be affordable and, based on the consensus emerging following the WRAP workshop, may find favour.

It should be noted, however, that this approach has been used merely for the purposes of demonstrating the *level* of savings that *might* be available from this type of service configuration; authorities may collectively, or separately, choose to roll-out different services from these.

We have not carried out a detailed modelling exercise of the type which we use when supporting procurements; to do so would be disproportionate to the needs of this analysis. Instead, we have developed a relatively reliable but simple cost projection model based on average service costs drawn from our experience of other authorities' services.

The remainder of this section outlines the key assumptions used in determining the change in waste flows that result from the move towards a harmonised service configured along these lines. This work allows the impact on material revenues, recycling credits and avoided disposal savings to be factored into the revised business case.

### 6.1 Modelling

This section describes the modelling approach and key assumptions that have been made in order to determine the likely impact of moving towards a harmonised service configuration across Gloucestershire.

### 6.1.1 Baseline Model

In order to determine the potential costs and savings associated with implementing predominantly fortnightly enhanced dry recycling, weekly separate food waste, fortnightly charged garden and fortnightly residual waste collections, it is first important to establish the starting point from which the new set of services will subsequently be implemented. The baseline waste flows in Gloucestershire are based on the most recent annual tonnage per material and per district for the first ten months of 2009/10, extrapolated to cover all twelve months. Waste composition information is based predominantly on a national dataset,<sup>1</sup> sense-checked against other sets of composition data that are available to Eunomia, including local composition study datasets specifically provided by the Gloucestershire authorities, and ensuring sensible material captures (kg/hhld/annum) for each of the systems.

Tonnages also include separate lines for trade waste, HWRCs, street sweepings and bring sites, though for the purposes of the financial impacts associated with the partnership and service harmonisation, the waste flows through these avenues are assumed to remain as they are in the baseline and do not, therefore, contribute to the overall costs and savings presented in this business case. It is also assumed that all communal properties will continue to be classified as such and will not receive any change to their collection systems.

The baseline systems have been modelled as summarised in Table 6-1. The baseline system for residual waste collection for Forest of Dean DC has been amended since an earlier version of this report seen by Finance Officers. This was to correct an error in the original baseline specification. It should be noted that three of the districts, Cotswold DC, Gloucester City and Tewkesbury BC, have recently made or are at present making significant changes to their service configurations.

For Tewkesbury BC and Gloucester City, these changes have recently been rolled out; thus tonnage data provided for 2009/10 will refer to the previous systems in place in these authorities. We have therefore additionally modelled a further baseline for these authorities from 2010/11, based on the new systems currently being rolled out. The new systems also take into consideration the potential financial benefit to the County and hence to these authorities of the avoided disposal savings (and higher recycling credits) achieved ahead of any joint service delivery roll-out. These authorities are not shown as attracting any additional recycling credits over and above the 2010/11 baselines, as these savings will be factored into their existing budgets. In addition, it should be noted that both will receive an incentive for rolling out these schemes which will need to be taken into account when calculating the subsequent future avoided disposal savings to which the districts may be entitled.

Cotswold DC, has made three recent service changes. Card and food waste were included in the kerbside scheme from summer 2008, while at the same time a charged garden waste scheme replaced the previous free scheme. The impact of these changes on tonnages are already shown in the 2009/10 tonnage data used for the baseline, as is the impact on recycling credits and material revenues. The additional costs of these services are supported by an incentive payment from the County Council. All of this is included in the baseline for CDC.

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<sup>1</sup> Based on work by Dr Julian Parfitt for Defra in 2006/07

**Table 6-1 Baseline Collection Systems in Gloucestershire**

		<b>CBC</b>	<b>CDC</b>	<b>FoDDC</b>	<b>GCC</b>		<b>SDC</b>	<b>TBC</b>	
<b>Baseline Year</b>		<b>2009/10</b>	<b>2009/10</b>	<b>2009/10</b>	<b>2009/10</b>	<b>2010/11</b>	<b>2009/10</b>	<b>2009/10</b>	<b>2010/11</b>
<b>Dry Recycling</b>	<b>Frequency</b>	<b>Fortnightly</b>	<b>Fortnightly</b>	<b>Fortnightly</b>	<b>Weekly</b>		<b>Fortnightly</b>	<b>Fortnightly</b>	<b>Fortnightly</b>
	<b>Containment</b>	<b>43,500 hhlds kerb sort box, 6,000 hhlds communal 240l bins (treat as communal properties)</b>	<b>Kerbside sort box</b>	<b>Kerbside sort box</b>	<b>Kerbside sort box</b>		<b>Kerbside sort box</b>	<b>Kerbside box</b>	<b>Commingled bin</b>
	<b>Hhlds Offered Scheme</b>	<b>All except ~3,000</b>	<b>All</b>	<b>All</b>	<b>All</b>		<b>All</b>	<b>All</b>	<b>All</b>
	<b>Materials Collected</b>	<b>News &amp; pams, light card, cans, tins, glass</b>	<b>News &amp; pams, card, cans, tins, glass</b>	<b>News &amp; pams, cans, tins, glass</b>	<b>News &amp; pams, cans, tins, glass, plastic bottles</b>	<b>Now also includes light card</b>	<b>News &amp; pams, cans, tins, glass, plastic bottles</b>	<b>News &amp; pams, cans, tins, glass</b>	<b>Now includes card and plastic</b>
<b>Food</b>	<b>Frequency</b>	<b>N/A</b>	<b>Weekly</b>	<b>N/A</b>	<b>N/A</b>	<b>Weekly</b>	<b>N/A</b>	<b>N/A</b>	<b>Weekly</b>
	<b>Containment</b>	<b>N/A</b>	<b>10 l caddy or into garden waste bin</b>	<b>N/A</b>	<b>N/A</b>	<b>25 l bucket with caddy</b>	<b>N/A</b>	<b>N/A</b>	<b>Caddy</b>
	<b>Hhlds Offered Scheme</b>	<b>N/A</b>	<b>All</b>	<b>N/A</b>	<b>N/A</b>	<b>All</b>	<b>N/A</b>	<b>N/A</b>	<b>All</b>

		<b>CBC</b>	<b>CDC</b>	<b>FoDDC</b>	<b>GCC</b>		<b>SDC</b>	<b>TBC</b>	
<b>Garden</b>	<b>Charged/Free</b>	<b>Free</b>	<b>Charged</b>	<b>Initial charge £26, no charge thereafter</b>	<b>Free</b>		<b>Charged</b>	<b>Charged</b>	
	<b>Frequency</b>	<b>Fortnightly</b>	<b>Weekly</b>	<b>Fortnightly</b>	<b>Fortnightly</b>		<b>Weekly (sent to landfill with residual)</b>	<b>Fortnightly</b>	
	<b>Containment</b>	<b>Sack</b>	<b>140-180 l bin</b>	<b>240 l bin</b>	<b>240 l bin</b>		<b>Sacks</b>	<b>240 l bin</b>	
	<b>Hhlds Offered Scheme</b>	<b>41,000</b>	<b>25,000</b>	<b>12,000</b>	<b>43,000</b>		<b>All</b>	<b>12,000</b>	
<b>Residual</b>	<b>Frequency</b>	<b>Weekly</b>	<b>Fortnightly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Fortnightly</b>	<b>Weekly</b>	<b>Weekly</b>	<b>Fortnightly</b>
	<b>Containment</b>	<b>180 l bin</b>	<b>240 l bin</b>	<b>Sacks</b>	<b>240 l bin</b>		<b>Sacks</b>	<b>180 l bin</b>	
	<b>Hhlds Offered Scheme</b>	<b>No containment for 2,680 hhlds, 9,180 hhlds on communal scheme</b>	<b>All</b>	<b>All</b>	<b>No containment for 2,298 hhlds, 1500 hhlds on communal scheme</b>			<b>All</b>	

### 6.1.2 Future State

In order to model the switch from current to future collection systems, we have developed a waste flow model which looks at the impact of changing the collection system on the resultant tonnes that are subsequently recycled, composted or that require disposal. The impact of moving to a predominantly fortnightly enhanced dry recycling, weekly separate food waste, fortnightly charged garden and fortnightly residual waste collection service is determined in kg/household/annum for each district, based on our experience of material capture rates from similar high-performing collection systems.

The total cost of treating the waste is then calculated year on year, taking into account, where applicable, gate fees for composting, anaerobic digestion and landfill, as well as the impact of the landfill tax and landfill tax escalator. Material revenues and recycling credits payable from the County to the districts are also both calculated for the recycle that is collected. The calculations are first undertaken for the baseline scenario in order to establish what the County would have to pay firstly for overall disposal and secondly to the districts as recycling credits if no changes were made to collection systems, and also to determine what material revenues would be obtained by the districts if the current collection systems continue through to 2021/22.

The same costs are re-calculated given the improved (and higher recycling) collection services described above. The switch in service for each authority is assumed to occur in the year in which the authority can join the joint collection service. The difference in material revenues and recycling credits is then calculated as the difference between the increased recycling scenario and the baseline on an individual district basis. The total avoided disposal costs from which the County would benefit are subsequently calculated as the difference between the total avoided disposal costs in the increased recycling scenario compared to the baseline, minus the additional recycling credits that would be payable to the districts.

The model assumes that the partnership would be able to command an improved price per tonne for the recyclates collected and sold on behalf of the authorities, due to increased market power as a result of large tonnages being marketed together. The material values per tonne have thus been inflated by 10 % for the joint collection service compared to the current material revenues obtained.

In addition to an assumed improvement in the value per tonne of recyclables, the enhanced service configuration would also lead to an increased tonnage of material being collected, leading to a further increase in income; this can be considered a direct result of the move towards harmonised services, rather than specifically being related only to the partnership.

Existing agreements are in place for the County to make payments to three districts to help to support the costs of enhanced services including food waste collection. We have assumed that these current incentives alongside recycling credits and a share of additional avoided disposal saving together form the overall 'pot' of money that would be available to all districts as they enter the joint collection service.

### 6.1.3 Collection Costs

The sections above discuss the changes in costs and savings as household waste material is diverted through the roll-out of enhanced collection services. However, to achieve the financial gains associated with reduced landfill and other disposal, and increased recycling,

investment in these new collection services is required and account must also be taken of the potential changes (generally increases) in cost of these services.

Table 6-2 details the assumptions that have been made in order to calculate the change in collection costs brought about by the move towards the harmonised collection service design.

It should be noted that these assumptions are high level; in practice the cost and savings will depend on factors such as the current efficiency in delivering the services in each authority, the current contract price obtained, and on the logistics faced in each authority. The figures given in Table 6-2 provide good estimates of the likely costs that would be incurred in the various switches that would be required by different authorities to move towards the harmonised collection service configuration, based on our extensive experience in this area. Although, when supporting contract procurements, or when assisting authorities in carrying out detailed technical appraisals of collection options, we would expect to do a much more detailed analysis of likely future costs, this high level approach is appropriate and proportionate for the purposes of this overall business case analysis.

**Table 6-2: Change in Collection Costs associated with Changes in Collection Service Configuration**

Waste Stream	Switch	Collection Cost £/hhld (excl. any material revenues, treatment costs)		Change in Collection Cost £/hhld
		From	To	
Residual	From weekly wheeled bin to fortnightly wheeled bin	£28	£20	-£8
	From weekly sack to fortnightly wheeled bin	£25	£20	-£5
Dry Recycling	Addition of kerbside box scheme	£0	£20	+£20
	Addition of plastic bottles to collection	£0	£2.50	+£2.50
	Addition of card to collection	£0	£2.50	+£2.50
	Addition of heavy card to collection	£0	£1.25	+£1.25
Garden	Introduction of new fortnightly wheeled bin scheme	£0	£0 (break-even at 25% participation, £35 charge)	£0
	From free wheeled bin to charged wheeled bin	£30	£15	-£15
	From free sack (CBC) to charged wheeled bin	£32	£15	-£13
	From weekly commingled charged to fortnightly source-separated charged	£30	£15	-£15
Food	Introduction of new weekly source-separated (with fortnightly dry recycling)	£0	£11 - £12	+£11 - £12
	Introduction of new weekly source-separated (with weekly dry recycling)	£0	£7 - £8	+£7 - £8

The change in collection costs given in Table 6-2 has been applied to each authority to estimate the likely change in costs of moving towards the envisaged collection service.

## 6.2 Overall Benefits of Increased Recycling

The annual costs and savings associated with increased recycling as at 2021/22 are presented in Table 6-3.

These incorporate the costs of service change to converge around the design described elsewhere: all authorities run a weekly separate food waste collection; a fortnightly charged garden waste collection service; a fortnightly residual waste service; and enhanced dry recycling collections. All authorities except Tewkesbury BC are modelled as having a kerbside sort scheme and all except Gloucester City are modelled as collecting recycling on a fortnightly basis. Tewkesbury BC is modelled as running a commingled dry recyclables service and Gloucester City is modelled as remaining on a weekly kerbside sort collection.

**Table 6-3: Additional Costs and Savings Above and Beyond Updated Business Case which Authorities Can Deliver with Harmonised Collection Services (at 2021/22)**

Item	Saving
Cost of introducing new collection services	-£326k
Material revenues (more material and better marketing)	£1,462k
Additional recycling credits available to districts	£822k
Avoided disposal savings (net of recycling credits payable to districts)	£3,079k
Total	£5,037k

It can be seen from Table 6-3 that the additional savings and avoided disposal costs that result from the roll out of enhanced services more than offsets the cost of introducing the new services, and that there is potentially a substantial amount of savings, in the region of £5 million per annum, that could be realised in moving towards this more harmonised service configuration. Although, strictly speaking, the savings presented here fall outside the partnership, it is worth noting that the ability to manage the procurement process for new services as a partnership should ensure that the cost of the new services is minimised, and the income from material revenues is maximised in the joint service arrangement.

## 7.0 Additional Benefits

There are a number of advantages that arise from partnership that have not been monetised within this examination on the basis that it might distract from the basic principles of the model and unnecessarily confuse cashable and non-cashable effects. None the less it is important not to lose sight of these additional benefits, and to ensure they are taken into consideration by authorities considering partnership membership.



## 7.1 Additional Partnership Benefits

A move toward a common service across the County provides a more consistent resident experience, and reduces confusion where the same street or area falls across district boundaries. A common service reduces the differences that have to be catered for at customer service level, allows optimisation of support and offers greater opportunities for automation and self service. This will reduce costs of communication and consultation.

The consolidation of back office teams offers a number of advantages. It allows for specialisation; i.e. although an individual district may not be able to afford to retain specialist skills, it may be viable where the resource is shared across the county. This increases the level of expertise available to the districts. Such consolidation also allows for the sharing of best practice and propagation of that practice.

From an environmental point of view, rationalisation of collection and disposal at a county level leads to more efficient use of vehicles in terms of miles travelled and fuel used resulting in a reduced carbon footprint for the service.

## 7.2 Additional Benefits from Increased Recycling

It is self evident that increased recycling will lead to a reduction in the amount of waste sent to landfill and that this is environmentally attractive. An increase in the number of front line staff needed to achieve increased recycling rates and a reduction of back office staff arising from consolidation will be seen as a positive transition against the backdrop of a much anticipated reduction in public services funding.

## 8.0 Project Costs and Cash Flow

The savings per annum illustrated in Section 4.0 will not be fully realised until all authorities are part of a joint collection service. The figures presented thus far do not, therefore, take into account the likely timing of different districts joining the shared service or any one-off project costs that would be incurred in order to set up the shared service. Consequently, this section first summarises the one-off project costs for the partnership, and then focuses on the cash flow for the county as a whole, taking into account the project costs through to 2021/22.

The total one-off project costs used in the cash flow are summarised in Table 8-1. The one-off costs associated with the project are largely carried forward from the previous business case. However a small number of changes have been made as follows:

- It is assumed that, as yet, none of the project costs can be removed from the business case and that all one-off costs projected in the original business case have yet to be borne by the authorities. Although the project has incurred costs, some of these relate to the re-development of this business case and the establishment of a formal programme using the structured Managing Successful Programmes (MSP) methodology, neither of which was anticipated at the point at which the previous business case was developed. In order to take a sensibly conservative view of future costs, and because the future structure of the project remains unclear in certain key respects, the whole project costs are carried forward. In reality it is to be hoped that costs will be significantly lower. One-off project costs of between £1,125k and £1,250k have thus been assumed for the updated business case (note this excludes internal officer time).

- Costs associated with IT and office equipment have been increased to between £550k and £700k. In our view the assumption we used in the previous business case (where an allowance of only £100k was made) was too low and a more conservative cost projection was required. This allowance covers the potential work that will be required for both a customer relationship management system (CRM) and a client-side/ front-line service system for the partnership. It should be noted, however, that Gloucestershire already has a number of CRMs and client-side systems from which a preferred option could be chosen for the partnership, and that this would reduce the costs that have been used in this business case for setting up the IT infrastructure.
- Redundancy costs have been reviewed and re-calculated, and remain as they were in the original business case (£60-120k).
- It is assumed that the authorities in Gloucestershire will seek funding to address some of the one-off costs associated with this project. We have subsequently factored £250k of funding as an offset to some of the one-off costs, with £50k obtained in 2010/11, and £100k obtained in both 2011/12 and 2012/13.

**Table 8-1 One-Off Project Costs**

	Low	High	Mid-Point
Project set-up costs	£1,125k	£1,250k	£1,188k
IT and office space set-up costs	£550k	£700k	£625k
Redundancy costs	£60k	£120k	£90k
Total Funding Received	£-250k	£-250k	£-250k
<b>TOTAL</b>	<b>£1,485k</b>	<b>£1,820k</b>	<b>£1,653k</b>

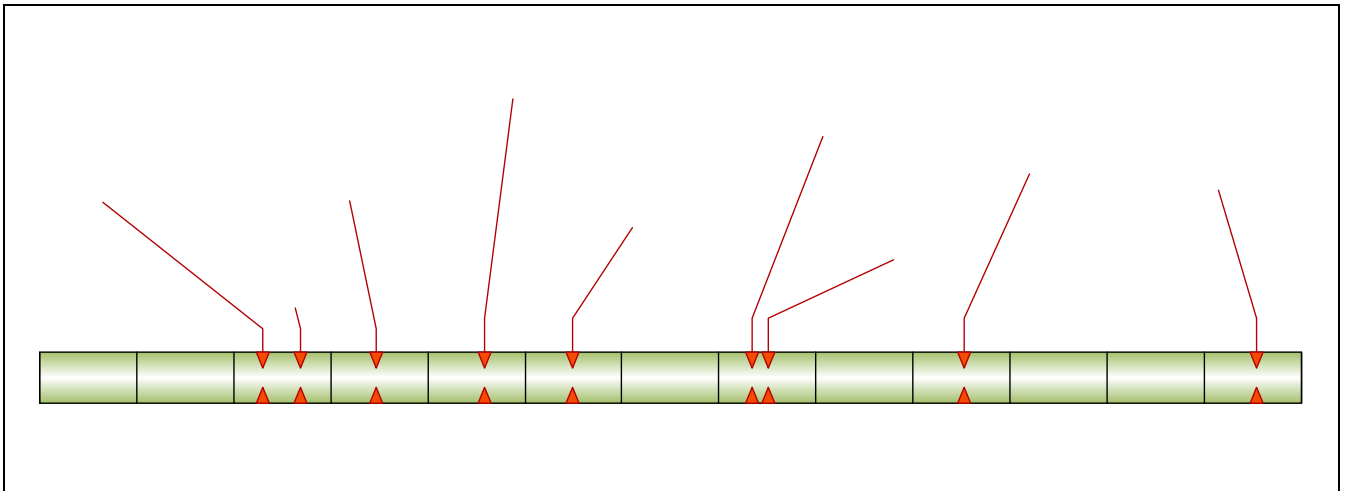
Although it does not reflect the current agreement across Gloucestershire, for the purposes of this modelling, and given that this agreement may be subject to change as the project progresses, the one-off project costs are shared according to the following high-level assumptions:

- Project costs: the county is assigned 50% of the one-off project costs required to set up the partnership, and the remaining 50% is split equally between the districts.
- IT and office set-up costs and redundancy costs: based on current headcount, the county will bear 28% of the IT and office set-up costs, with the remaining 72% split between the districts according to the number of households.

## 8.1 Cash Flow Assumptions

The key start dates used in order to model the cash flow for the updated business case are illustrated in Figure 8-1. Error! Reference source not found..

Figure 8-1 Key Dates for Cash Flow



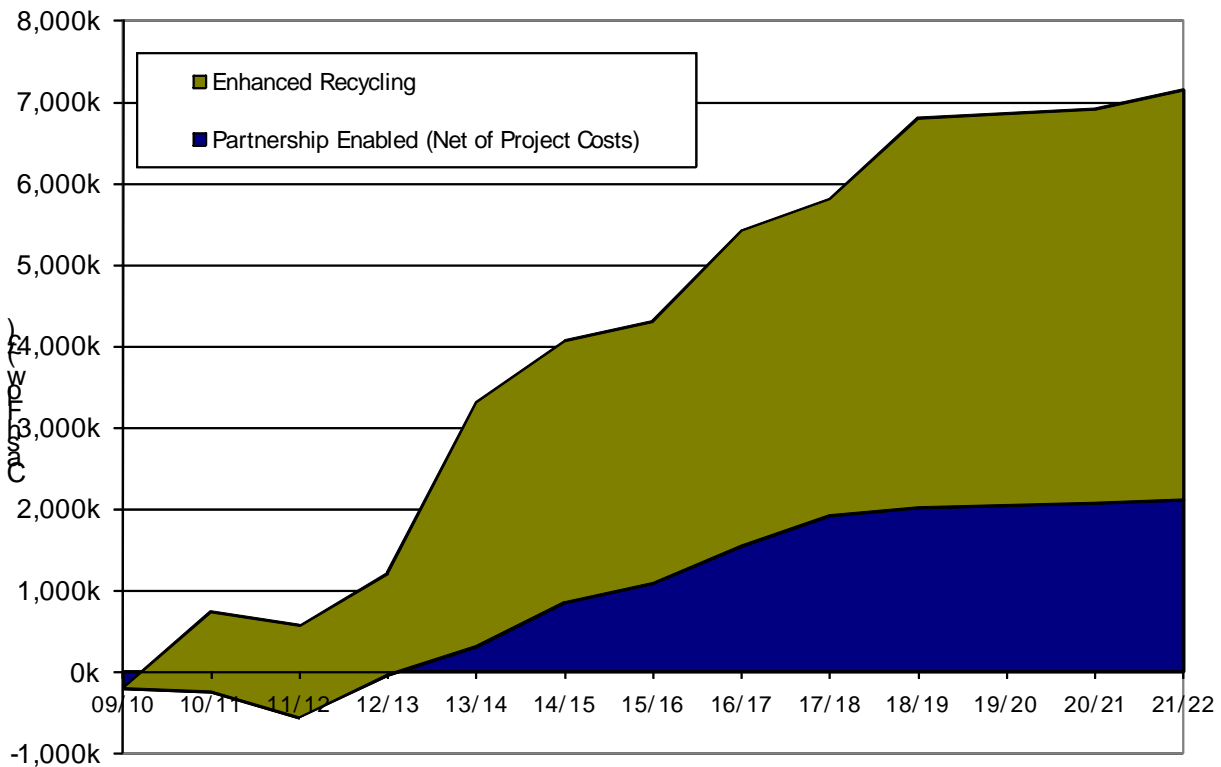
In addition to identifying the key start dates, it is important to outline the assumptions that have been made regarding how much of the total savings would be available from day one. We have thus applied the following principles to the cash flow modelling:

- 1) Infrastructure-related costs and savings
  - A) 25% of the total savings will apply/be available in 2014;
  - B) 50% available in 2015, and
  - C) Full savings available in 2016
- 2) For the back-office related costs and savings
  - A) 50% of the costs and savings will apply in the first year of set-up of each component;
  - B) 75% will apply in the second year; and
  - C) 100% in the third year.
- 3) For the joint collection service related savings
  - A) 100% are experienced in the first year of roll-out.
- 4) On-top of this, it is also assumed that the overall savings associated with the single collection service will not be maximised until all partners form part of the service i.e. 2021. Hence the savings available from the joint collection service have been modelled as follows:
  - A) Until Stroud DC joins the joint collection service, only 50% of the total savings will be available;
  - B) Until Forest of Dean DC joins the joint collection service, only 65% of the total savings will be available; and
  - C) Until Gloucester City joins the joint collection service, only 85% of the total savings will be available.
- 5) Finally, it should be noted that the one-off project costs associated with IT have been spread over the three year period from 2011/12 to 2013/14, with half of the costs experienced in the first year, and the remaining costs spread equally over the subsequent two years. Project costs are discussed further in Section 8.0.

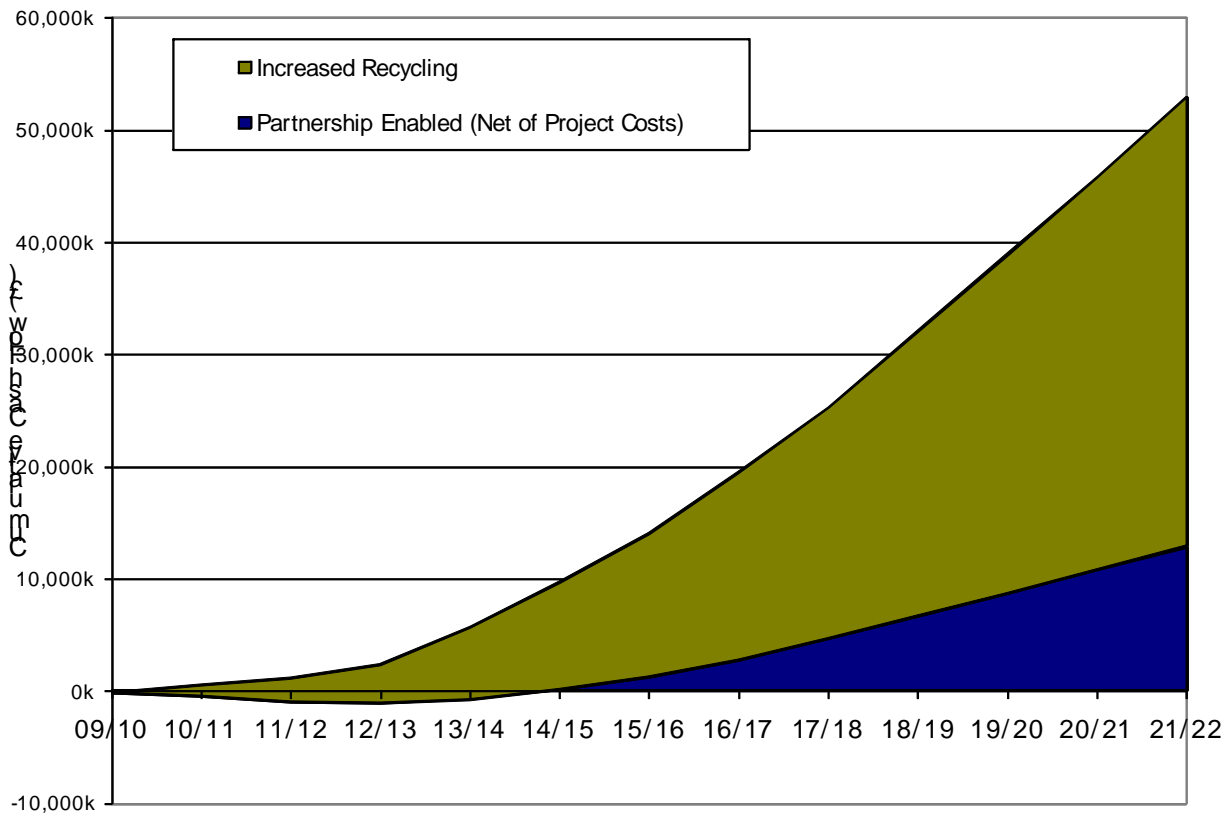
## 8.2 Cash Flow Output

Figure 8-2 shows the net annual cash flow for the partnership and also the savings that could be derived from increased recycling. As illustrated in Figure 8-2, a positive cash flow is first obtained from the partnership in 2012/13, with savings rising steadily thereafter. Figure 8-3 shows the cumulative cash flow for the partnership. Excluding savings associated with increased recycling, the cumulative cash flow would be positive from 2014/15 onwards, reaching just over £15 million by 2021/22. The additional savings associated with increased recycling would take the overall total to £53 million over the same time period.

Figure 8-2 Annual Cash Flow



**Figure 8-3: Cumulative Cash Flow**



## 9.0 Summary and Conclusions

This report presents the results of the updated business case modelling that has been carried out to look at the benefit of integrating and harmonising waste service delivery across Gloucestershire. The model has been updated in a number of ways:

- Updating the savings related to productivity of the collection service;
- Updating the infrastructure costs and savings;
- Re-visiting and updating the back-office savings, and factoring in subsequent savings associated with reviewing and streamlining ‘back at the ranch’ overheads. This update also includes the creation of an additional role to lead on the short-term productivity reviews and delivery of the ‘back at the ranch’ overhead savings;
- Factoring in savings associated with a reduction in the number of procurements required;
- Revising the costs associated with front-line workforce integration;
- Updating one-off project costs to account for additional IT set-up costs, but also factoring in £250k of funding to be obtained over the next three years;
- High-level modelling to try to ascertain the costs and savings share that each authority might expect to receive, based on a series of cost-sharing principles previously documented in work undertaken with finance officers;

- Undertaking a high-level assessment of the impacts of moving towards a harmonised and higher-performing collection service across the whole of the county;
- Cash flow modelling to incorporate the staggered approach to the development of the partnership.

The original business case calculated savings of between £1 million and £2.4 million per annum. With the updates provided in this re-visit to the business case, the savings are now between £1.7 million and £3.2 million by 2022/23, with an additional £5 million potentially also available if districts implement a change in collection systems leading to increased recycling. The principle reasons for this significant increase in savings are firstly, the change in infrastructure configuration, with the release of a greater number of transfer stations, the lower cost of the strategic depot due to co-location and removal of the need for a transfer station, and the requirement for a lower number of street cleansing depots all contributing to enhanced savings. Secondly, the productivity gains have been increased from 5-7% to 9-11% (including short-term productivity gains). Thirdly, when taking into account the potential increase in recycling from moving towards more harmonised collection systems, the small overall cost associated with the enhanced collection service configuration is easily offset by the associated increase in material revenues and avoided disposal savings resulting from the new service configuration and the joint collection service.

Although the staggered approach to the formation of the single collection service impacts the cash flow available in the short- to medium- term, the cash flow becomes positive by 2012/13, with only a small negative cash flow to be experienced in the first years (2010/11 to 2013/14) whilst setting up the single back office team and the first joint collection service stage. In putting the back-office team in place by 2011/12 and including an additional post to lead on service improvement delivery, this should enable the realisation of shorter-term productivity and 'back at the ranch' overhead savings to mostly offset the initial costs incurred. In addition, the cost-savings balance associated with the change in infrastructure follows shortly after the first stage of a single collection service, with savings being realised from 2014/15 onwards and being fully realised by 2016/17. The staggered approach upon which we have based this business case modelling would facilitate the move towards a more harmonised enhanced collection service, in turn enabling greater savings to be achieved through increased material revenues and avoided disposal savings.

## **APPENDICES**

## A.1.0 Appendix 1 Summary of Questions on Business Case Model

Following review of an earlier version of this document (v0.9) Finance Officers asked a number of questions regarding the business case model that accompanied the report. Where written responses were provided to these questions, these responses are included in Table A-1.

**Table A-2: Questions on Business Case Model v0.12**

Question	Response
On the vehicle analysis worksheet the raw data for FoDDC is blank	This data is unchanged from the original business case at which time data for FoDDC was not available. We have therefore used a pro-rata calculation based on household numbers to provide an estimate for FoDDC vehicles.
On the vehicle cover table in assumptions – some lines are mis-aligned	This was due to a difference in row headings compared to the vehicle analysis sheet – this will be corrected for the next iteration of the model but just to confirm it makes no difference to the business case numbers as vehicle names are correct in the vehicle analysis sheet which is where all the calc/costs/numbers of vehicles come from.
In the Assumptions worksheet, please explain the 120% multiplier used in row D165	We can confirm that this figure is simply a standard formula which we use to represent the financing cost of the vehicle lease over the period.
In the Option 2 – whole county sheet cells G20 and H20 use raw numbers.	These numbers reflect a high level estimate of possible short-term efficiency savings based on our extensive experience of advising local authorities of same. We have used what we feel to be a conservative assumption of delivering ‘quick win’ efficiency savings in 3 of the 6 districts, and that this would equate to around £150k per authority. The high and low figures are simply a variation around this.
Do salary costs include on costs for superannuation and NI? For example Waste Manager salaries	Correct, superannuation and NI costs are not included



<p>look as if they don't.</p>	
<p>The annual cost of new depots appear high compared with existing ones.</p>	<p>It is important to note here that the new configuration includes combined depot and transfer stations so for comparison purposes you would need to add the cost of the current transfer stations (approx £1,337k) to the current depots, making the comparison more meaningful.</p>
<p>Vehicle workshop overheads assumed at £20k per annum. What is the basis for this?</p>	<p>This is based on our experience of developing similar business cases for waste partnerships and operational efficiency reviews.</p>
<p>Vehicle life etc. There are 4 categories of vehicle which account for £10.4 million out of the total of £14.6million. As the life used of 7 years is an average would it not be better to be more specific for the larger value vehicles and use an average for the others?</p>	<p>We have used the 7 yrs life as an assumption applied to all vehicle types. Our experience confirms that an operational life of 7 years is a safe assumption for all vehicle types, not just the larger vehicles (Standard RCV, Large recycling, Garden/food waste and Cleansing). This is an accepted industry standard for the calculation of whole life cost.</p>
<p>Has there been any sensitivity analysis in relation to the vehicle life/vehicle costs etc.?</p>	<p>Since as stated above 7 years is an accepted industry standard for vehicle life no sensitivity analysis has been undertaken. However for the purposes of calculating likely costs/savings in terms of vehicle procurement, financing and maintenance we have calculated a 'unit value' which we have then applied a 'low' and 'high' multiplier to, to provide a saving range (See worksheet 'Option 2 - Whole County'). For the purposes of summarising the partnership benefits overall, and for each district plus the county we have used the mid-point figure.</p>
<p>Some of the savings on the Option 2 Whole County spreadsheet seem to be very rough guesses. For example productivity gains. Numbers look to have been keyed in.</p>	<p>It is certainly the case that for some category of savings we have used relatively broader assumptions than others. This largely reflects the data available when undertaking the original modelling but also the related uncertainty as to the reality of the savings available, particularly when looking at productivity and back office savings. We have therefore applied purposefully conservative</p>

	<p>assumptions in these areas based on our knowledge and experience at the scale of savings that have been delivered by other similar projects, most notably the Somerset Waste Partnership. With specific reference to the short-term productivity gains an amendment has been made in the model to link the savings to a corresponding assumption as for the other categories. This will be shown in the updated version of the model which will be available to Finance Managers ahead of the meeting on the 13th August.</p>
<p>Has there been any sensitivity analysis? What are the critical factors?</p>	<p>It is not clear to which category of saving this question refers. As stated above, the inclusion of a 'low to high' savings range within the 'Option 2- Whole County' sheet is intended to demonstrate the impact on that category, and therefore the overall savings available, of a range of magnitude. In general terms the most significant critical factors will be which authorities opt to join the Partnership, and when, and related to that, what infrastructure configuration will eventually be developed.</p>
<p>Has there been any sensitivity analysis? What are the critical factors?</p>	<p>It is not clear to which category of saving this question refers. As stated above, the inclusion of a 'low to high' savings range within the 'Option 2- Whole County' sheet is intended to demonstrate the impact on that category, and therefore the overall savings available, of a range of magnitude. In general terms the most significant critical factors will be which authorities opt to join the Partnership, and when, and related to that, what infrastructure configuration will eventually be developed.</p>