

Gloucestershire Joint Municipal Waste Management Strategy: Post Adoption Environmental Statement

Gloucestershire County Council

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July 2008

Report for:

Gloucestershire County Council

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1.0 Introduction

This statement marks the final reporting stage in the Strategic Environmental Assessment (SEA) process that has been undertaken alongside the development and adoption of Gloucestershire's Joint Municipal Waste Management Strategy (JMWMS). Its purpose is to provide details of how environmental considerations have been accounted for within the adopted strategy and how responses to the public consultations that were undertaken have been addressed.

This statement has been prepared in full compliance with the provisions of Regulation 16 (4) of the Environmental Assessment of Plans and Programmes Regulations 2004, otherwise known as the SEA regulations.

1.1 Availability of Documents

The adopted JMWMS, Environmental Report (ER) and Post Adoption SEA Statement, are available on the Recycle for Gloucestershire webpage at:
http://www.recycleforgloucestershire.com/joint_strategy.

The documents are also available for inspection free of charge Monday to Friday during normal office hours at Gloucestershire County Council Offices:

Waste Management Unit
Gloucestershire County Council
Shire Hall
Westgate Street
Gloucester GL1 2TG

Please telephone 01452 426654 to arrange an appointment.

2.0 Consideration of Environmental Factors within the Strategy

Moving towards environmental sustainability was one of the key principles used when developing the JMWMS. This can be seen throughout the JMWMS with the very first paragraph of the headline strategy recognising that society is currently living beyond its limits and emphasising the need for action at all levels. Particular emphasis is placed on the link between waste management and climate change.

From recognising the link between poor waste management and environmental degradation, the strategy moves on to setting out a series of objectives that are designed to move Gloucestershire towards more sustainable waste management. These objectives reflect the principles of the waste hierarchy, which is widely accepted as the key method by which sustainable waste management can be achieved. The waste hierarchy (see Figure 1) is a principle which states that waste should be prevented as a first priority. Once as much waste as possible has been prevented it should be re-used, recycled and recovered before disposal options are considered.

The hierarchy is not only reflected in the headline strategy and objectives, but also in the actions plans, which have been specifically tailored to meet the needs and aims of each of the county and district authorities across Gloucestershire. Each of the action plans reflects the hierarchy through the setting out of a series of actions for each level. In addition, actions reflecting a desire to work together to achieve sustainable waste management in an efficient way have also been included.

Figure 1: The Waste Hierarchy

The arrow represents the movement of efforts in terms of waste management in Gloucestershire away from disposal as a first option, up towards waste prevention, reduction and re-use.



The objectives set out within the headline strategy are then followed by a series of targets which are designed to be stretching yet achievable. Of particular interest is residual waste per capita target. Such a target (as opposed to the traditional target of the amount of waste recycled by an authority), promotes activities at the highest tier of the waste hierarchy – i.e. it counts all successful actions in relation to waste prevention and re-use. Other targets relate to education, participation in waste collection and other recycling schemes, waste growth and the disposal of biodegradable waste to landfill. All of these targets reflect a commitment by the authorities to environmental protection.

2.1 Consideration of the Environmental Report within the JMWMS

The ER was designed in such a way that it could influence the decision making process at the key stages of strategy development, action planning and implementation of specific services by each council upon strategy adoption. Based on detailed analysis (both quantitative and qualitative), the ER was able to make specific recommendations regarding the wording of a number of the core objectives proposed, with the aim of aiding clarity and pushing the JMWMS further forward in terms of sustainability. The specific recommendations that were made within the ER, together with the response of the Gloucestershire Authorities are presented in Table 2.

The ER has also been able to provide evidence and analysis to influence the development of the specific action plans for each of the Gloucestershire Authorities. For the county council this has included guidance on selecting waste prevention initiatives to action, and will assist the development of proposals for dealing with residual waste. For the individual district and borough councils, the ER has been able to influence both the choice of waste prevention initiatives, and waste collection policies. For example, in the district action plans, each of the authorities has policies for food waste collections and alternate weekly collections of residual waste. These policies range from actual implementation of the schemes to closer consideration of them and presentation for consideration to elected members. Both food waste collections and alternate weekly collections of residual waste are supported by the findings of the ER.

Of key importance in the context of the ER is the longevity of its value. Given that the action plans are designed to be 'living' documents which are updated regularly (the aim in Gloucestershire is to update the documents annually), the value of the environmental report should extend beyond the development of the initial action plans, and be used as a reference tool for decision making on future service changes.

Finally the ER provided methods by which any negative impacts identified during the assessment process could be mitigated.

3.0 Consultation on the JMWMS & Environmental Report

3.1 Introduction

Consultation is a crucial part of both strategy development and the SEA process. In light of this, the Gloucestershire Waste Partnership (GWP) decided to undertake two major consultation exercises between November 2006 and September 2007. The key results of these consultations and how these have affected the JMWMS are presented below.

3.2 The First Consultation on the Draft JMWMS

Between November 2006 and January 2007 the GWP published its draft JMWMS. Feedback on the nine strategic objectives was invited from the general public and key stakeholders. A full report on the consultation process and results from the consultation can be found on the Recycle for Gloucestershire website at: http://www.recycleforgloucestershire.com/joint_strategy, with the key messages emerging from the consultation being discussed below.

3.2.1 The Key Messages to Emerge from the Consultation

There was little disagreement about the importance of any of the core objectives covered in the survey. The objectives that were viewed as least important still received over 90% support, and therefore the survey provided no grounds for questioning or omitting any of these objectives.

In terms of measures to increase recycling, the message that appeared to come through clearly was that people wanted a wider range of materials to be collected in the kerbside collections (e.g. plastics and cardboard), and that providing clearer information on the recycling systems would help them to recycle more. Fewer people thought that more frequent recycling collections or larger containers for recycling would be an incentive to recycle more.

Food waste collections appeared to be the most controversial service proposal. Approximately 60% of respondents indicated that they would use such a service. This is in line with the upper end of food waste participation figures from other schemes in the UK.

The issue of compulsory recycling received a high level of support, with 72% of respondents agreeing that recycling should be compulsory, a figure that is in line with other surveys conducted in the UK. The support for compulsory recycling becomes slightly less clear when the issue of financial penalties is put forward, with people clearly feeling less comfortable about such a prospect.

The issue of fortnightly or Alternate Weekly Collections (AWC) was addressed only indirectly in the survey. The focus was on determining which services residents felt would be most useful in the context of an AWC service. What is apparent from the survey results is that the prospect of a shift to AWC does not make food waste collection services appear more attractive. Garden waste collections were the most popular AWC related initiative among respondents.

3.2.2 Summary of JMWMS revision following consultation

The consultation identified a number of recommended amendments to the draft JMWMS. These are summarised in Table 1 along with an overview of how they have been taken into account.

Table 1: Recommendations for Amendments to JMWMS – First Consultation

Recommendation	Reasoning	GWP Response
1. Maintain most existing core objectives.	Most core objectives of the strategy (Reducing Waste, Education, Recycling and Composting as much as possible, Reducing Hazardous Waste, Recovering Value, Working Together and Closing the Loop) attracted widespread support, and there are strong grounds for adopting these objectives either as they stand, or with only minor changes to the wording. See recommendation 5 below for the exception.	Accepted. All existing objectives have been maintained. (See recommendation 5 below for further information).

<p>2. Amend Objective 3 wording to reflect the need to optimise collection systems rather than specify system configurations.</p>	<p>Public opinion is that the range of recyclables collected from households should be increased. Objective 3 could be reworded to reflect the intention (stated elsewhere in the strategy) to maximise the range and quantity of materials separately collected. The point was made in the consultation workshops that reference to ‘three streams’ appears to restrict the number of streams that are collected, and consideration should be given to amending this wording so that it reflects the need to optimise collection systems, rather than specify system configurations.</p>	<p>Accepted. This has also been reflected in other sections of the strategy, allowing greater flexibility to adopt the most appropriate collection systems as circumstances and technologies change over time.</p>
<p>3. Develop a strong public education programme to accompany service changes.</p>	<p>Separate collections of food waste are supported by the consultation, albeit with some reservations. There is clearly some apprehension and lack of understanding on the part of householders about such a service and how it will work. A programme of education will therefore be important to address residents concerns regarding convenience, smell, vermin and flies if such a service is to be successfully introduced. Education on why it is important to compost food waste is also important.</p>	<p>Accepted. This has already been reflected in the headline strategy and no further changes have been made to this document. It is intended that education and communication features strongly in the future planning of service changes, and this will be a feature of future implementation plans.</p>
<p>4. Consider compulsory recycling.</p>	<p>Compulsory Recycling should be carefully considered by GWP districts as it is not only proven to be effective in raising recycling rates elsewhere, but is also likely to enjoy strong popular support, based on the results of the</p>	<p>No change made. Whilst this may be considered in the future (in support of other objectives), the strategy has not been amended to make this specific commitment at this stage.</p>

	survey.	
5. Remove Objective 6 'Delivering the strategy' and incorporate this into section 6 'How are we going to get there?' Consider the same for Objective 7.	<p>The question of the appropriateness of Objective 6 'Delivering the Strategy' as a separate objective was raised in the consultation and this deserves serious consideration. Delivery of the strategy is more of a method through which the objectives of the strategy can be achieved than an objective in itself, and it may be more appropriate to include this in Section 6 "How are we going to get there?" This same line of reasoning could also be applied to Objective 7 'Working in Partnership'.</p>	No change made. We believe that mechanisms around strategy delivery and partnership working are of sufficient current importance to maintain their development as specific objectives. Once these have been well established, consideration will be given to reviewing them in future revisions.
6. Clarify leadership.	<p>The strategy should set out more clearly the role and mandate of GWP, so that it is clear how this strategy will be taken forward and the status that the GWP has amongst member authorities. A theme that emerged at several points was the need for strong leadership to drive the strategy forward. The strategy should state clearly where this leadership will come from.</p>	Accepted. Section 3.2 has been extended to provide more detail on the role of GWP and the optimisation of joint working.
7. Consider other ways of removing hazardous waste from the residual waste stream.	<p>One suggestion to emerge from the consultation was that separation of hazardous materials for reuse, recycling, and treatment should be made compulsory, rather than left to 'education'. This could be given further consideration, and may be relatively easy to implement in the context of compulsory recycling (provided appropriate collection systems are in place). This will support</p>	No change has been made to the headline strategy, and 'Depollution of the Waste Stream' is maintained as specific objective. Any future service changes will be identified in the annual action planning process as options and technologies develop.

	Objective 9 “Depollution of the Waste Stream”.	
8. Consider adopting a stronger emphasis on working with supply chains (eg retailers) to reduce the amount of materials entering the waste stream.	The view that businesses (particularly retailers) should play a more active role in reducing waste came through consistently in the consultation. It was felt that business is responsible for producing materials (particularly packaging) that householders must ultimately dispose of and that there is a need for waste prevention to begin further up the supply chain. Working with business is touched on in Objective 7 of the strategy but it may be worthwhile for this to be emphasised more strongly under Objective 2 (Reduction First).	Accepted. Objective 2 has been strengthened to state our recognition of the role businesses may play in waste reduction. Any future actions which arise from this will be detailed in the action planning process.
9. Clarify timescales for action.	The point was raised that the strategy does not make it clear <u>when</u> things are going to be done. Whilst timeframes are determined within the targets section and in the ongoing action plans, we could consider drawing the time dimension out more strongly in the strategy itself through inclusion of a graphical timeline and by drawing clearer links between the objectives, targets and implementation actions.	Accepted. A timeline in graphical format has been added. See figure 6 in Volume 1 Headline Strategy.
10. Review the wording of objective 5 – is there a better	There were clearly a variety of messages from the consultation regarding treatment of residual wastes,	Accepted. Objective 5 has been rephrased to present a clearer logic.

way of presenting this objective ?	and no clear consensus emerged. Industry desired a more definite commitment to specific technologies, while NGOs felt that no commitment should be made. On this basis no clear recommendation can be given on Objective 5, beyond reviewing the wording of the objective.	
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Source: Summary of JMWMS Consultation November 2006 - January 2007.
http://www.recycleforgloucestershire.com/joint_strategy

3.3 The Second Consultation on the Draft JMWMS & Environmental Report

The second round of public consultation on the draft JMWMS was undertaken between July and September 2007. This consultation allowed the amendments made at the first consultation stage to be presented for further comment, and also made available the ER for public consultation.

The comments received during this consultation are presented in Table 2. The response of the GWP to these comments is also stated along with the rationale behind the response.

Table 2: Second Round Public Consultation: Comments Received & Responses

Source	Recommendation	GWP Response	GWP Rationale
SEA Report	<p><u>Core Objective 1: Changing Behaviour.</u></p> <p>To make clearer that this objective applies to everyone in the county and that the change desired in behaviour is towards sustainability. Whilst this is implicit in the text they need to make it explicit. Although not required as part of the wording of the objective, it will be important that the education initiatives are specifically tailored to the diverse needs of stakeholders, including the public.</p>	No change to JMWMS proposed.	The JMWMS explicitly applies to a wide 'society' as stated at various points throughout the supporting text. The desire to secure 'long term sustainability' is also explicitly stated in section 5 "Where do we want to be". Whilst we agree that these principles are central to the objective, in an effort to remain succinct and focussed it is not proposed to extend the wording of the objective further.

Source	Recommendation	GWP Response	GWP Rationale
SEA Report	<p><u>Core Objective 3: Segregation at Source.</u></p> <p>For this objective to gain greatest success, it will be important for the collection services provided to be convenient. Therefore it is recommended that wording be added to the objective to reflect this.</p>	No change to JMWMS proposed.	Whilst we would not disagree with the principle, this comment relates to the tactics we would need to employ rather than a high level objective.
SEA Report	<p><u>Core Objective 4 : Compost Hierarchy.</u></p> <p>Strengthen the wording within the objective to 'actively promote and encourage home composting'.</p>	No change to JMWMS proposed.	We do not believe this adds any further value to the objective since 'actively' is implicit within promotional activities and already reflects our intention to be active in this respect.
SEA Report	<p><u>Core Objective 5: Residual Waste as a Resource.</u></p> <p>It will be possible to further increase the benefits of this objective by reflecting a desire to continuously reduce residual waste. In considering this as part of the objective, the issue will be considered in determining waste treatment options. As a result, Gloucestershire is less likely to be locked into the construction of a treatment facility which does not allow flexibility.</p>	No change to JMWMS proposed.	Waste reduction is already explicit as a preferred option, as stated in objective 2 "Reduction First". The issue of developing a flexibly sized treatment facility is one of tactics and we do not believe that this belongs as a high level objective.
SEA Report	<p><u>Core Objective 7: Working in Partnership.</u></p> <p>To improve efficiency and deliverability of initiatives, the wording could be amended to include alignment of financial and operational interests.</p>	Accepted	It would be helpful to be clear about our intent here, which would potentially include alignment of these interests, even in part, as an objective. However, the work of the Joint Improvement Board may further inform a future approach to this and a response to JIB recommendations has been included in the detailed action plans.

Source	Recommendation	GWP Response	GWP Rationale
SEA Report	<p><u>Core Objective 9 : De-pollution of the waste stream.</u></p> <p>This objective could go further to include encouraging the reduction of hazardous waste arisings e.g. avoiding the use of garden chemicals, promoting the use of rechargeable batteries etc. Also the re-use of hazardous materials should be promoted to the main text.</p>	Accepted.	This would also fulfil the objective of waste reduction, and such issues could easily be incorporated into a waste minimisation programme. Objective 9 text to be amended to incorporate this recommendation.
County & District Waste Officers Action Planning Workshop (11 th July 2007)	<p><u>Volume 1 Headline Strategy : Section 5.3 'Targets'</u></p> <p>Target T3 includes "All households in Gloucestershire will have convenient and easy-to-use collection services, enabling them to recycle and compost at least 70% of their rubbish by April 2010". This statement forms a core part of the LGA vision statement, but whilst strategically important, is impractical to measure and report upon as a target. It is recommended that this statement be removed from the targets box and placed in the main body of the strategy text in order to provide a context for specific actions and resulting targets.</p>	Accepted.	We agree with this logic. We wish to reflect the strategic importance of this statement within the Headline Strategy, and will relocate it to Section 5 "Where do we want to be?".
County & District Waste Officers Action Planning Workshop (11 th July 2007)	<p><u>Volume 1 Headline Strategy : Objective 3 (Segregation at Source).</u></p> <p>Remove reference to 'quality and value' and emphasise the optimisation of collections.</p>	Accepted in part.	Emphasise optimisation of collections, but keep this in balance with 'quality & value' considerations in order to allow us to adapt to best technological and market developments over time.
County & District Waste Officers Action Planning Workshop (11 th July 2007)	<p><u>Volume 1 Headline Strategy : Objective 8 (Closing the resource loop).</u></p> <p>Remove reference to 'high quality' materials in the first sentence of the supporting text box.</p>	Accepted in part.	Following on from previous rationale with respect to collections of recyclable materials, but still aim to produce high quality products from these recyclables.

Source	Recommendation	GWP Response	GWP Rationale
County & District Waste Officers Action Planning Workshop (11 th July 2007)	<u>Volume 2 High Level Action Plan : Section 3 (Collection Systems).</u> Reword the 3 rd bullet point from “...once sufficient recycling and composting infrastructure is provided” to “...provided sufficient recycling and composting infrastructure is in place”.	Accepted.	This is a point of detail, but helps the sentence read as a joint county / district statement.
County & District Waste Officers Action Planning Workshop (11 th July 2007)	<u>Volume 2 High Level Action Plan : Section 5.2.1 (Organisation).</u> Review section to ensure it is consistent with JIB work, and amend date reference of April 2007.	Accepted.	Rewrite this section to reflect JIB actions, to remove reference to ‘reinvigoration’ of GWP and bring into present tense.
County Council Waste Projects Manager (8 th August 2007) & Waste Technical Manager (4 th September 2007).	<u>Volume 1 Headline Strategy : Section 5.1.4 (Public Expectations).</u> This section references public engagement ‘to date’, but final document should bring this up to date and speak in present tense. Additional bullet point should be added to include final consultation phase. Reference to Waste Strategy 2000 review should be replaced with published Waste Strategy 2007. Reference to statistics throughout Volume 1 and Volume 2 should be brought up to date with 2006/07 data.	Accept.	Logical presentation. Extend this approach to updating the whole of the strategy.
Mrs Haigh, Parish Councillor, Bibury (9 th August 2007)	Although I have not completed my reading of the document I would very much like to implore those responsible for this policy to reconsider ' direct mail ' as part of the 'Recycle for Gloucestershire Campaign', see Item 4.1.4. Given that, on the page prior to this, the "Average breakdown of Household Waste arising in Gloucestershire pie chart shows paper as being the highest proportion (23%) it is hard to imagine how a campaign could suggest pursuing a paper campaign in the area.	Accept in part	This reference is made within the ‘what we are doing’ section and reflects the current approach of using direct mail as one of several different communications tools. The public have indicated through roadshow and telephone surveys that direct mailouts and leaflets are a strongly preferred method of receiving information. However, an increasing number of people are indicating that they would be happy to receive information by email. We will therefore

Source	Recommendation	GWP Response	GWP Rationale
			address this through the action plans when developing the communications approach, although it is likely that a direct mail approach will continue to be used in appropriate circumstances for the foreseeable future. All direct mailouts will continue to use recycled paper and will also be recyclable themselves in order to minimise their environmental impact.
Whiteshill & Ruscombe Parish Council (20 th August 2007)	<p>In response to Gloucestershire's Joint Municipal Waste Management Strategy, Whiteshill & Ruscombe Parish Council have two requests:</p> <ol style="list-style-type: none"> 1. Put pressure on manufacturers to reduce packaging waste and use recyclable materials where packaging is necessary. 2. Weekly kerbside recycling collections to include cardboard and compostables. 	Accept in part	<ol style="list-style-type: none"> 1. Volume 2 section 2.2 states that 'we will lobby the private sector such as retailers and supermarkets, central government and public sector policy makers via the LGA and other organisations to try to reduce packaging waste'. 2. Volume 2 section 3.2.1. states that district councils will consider developing collection schemes in line with the options identified. This includes collection of biowaste materials as one part of a drive to reduce reliance on landfill. The timing and actual design of service changes will be subject to assessment before final decisions are made in order to optimise performance and efficiency of any new scheme.

Source	Recommendation	GWP Response	GWP Rationale
<p>Mr Riley (23rd August 2007)</p>	<p>I was recently disappointed that I could not recycle packaging that the supplier had clearly stamped with recycling symbols.</p> <p>I looked in the reports detailed in the subject line and could not find any reference to how this situation would improve.</p> <p>Recycling is inconsistent throughout the county. In Quedgeley I had plastic bottles recycled at the kerbside. In Cheltenham this service is not provided. This does not make recycling easy.</p> <p>I do not understand why I cannot recycle plastic food trays at county council recycling sites, where the trays are marked with a recycle symbol, when I can recycle bottles marked with the same recycle symbol.</p> <p>I bought an AEG Electrolux Tumble Dryer packaged in Cardboard, Polystyrene, Wood and Plastic wrap. The packaging was marked with re-cycle symbols and the instructions (printed by AEG in Germany, which is significant as they have a better re-cycling record) said all the packaging materials could be recycled.</p> <p>I happened to be passing Stoke Orchard tip so took the packaging with me. I could recycle the cardboard and wood. I could not recycle the plastic which was marked with a re-cycle symbol. I could not recycle the Polystyrene.</p> <p>I recently received a sticker on my main bin to encourage me to re-cycle. Presumably this had been applied because I forgot to put out my green bin on the allotted day. Disappointing it was applied even though the main bin contained no recyclables.</p> <p>It is annoying to be encouraged to re-cycle when the facilities are not available for re-cycling.</p> <p>The recent guide received with my council tax bill suggested plastic bottles could be recycled at the kerbside. Unfortunately this only covers Gloucester and not Cheltenham. I realise I can re-cycle at the</p>	<p>Noted, as per our comments on the right.</p>	<p>GWP have stated in the strategy (Vol 2 section 3.2) that we will strive to increase the range of materials collected for recycling and (Vol 2 section 3.3) that we will collectively explore implementing common standards. However, the ability to recycle some materials is currently constrained by the availability and viability of reprocessing routes for these materials. This is a particular problem for some types of plastic.</p> <p>Additionally, we will explore (Volume 2 section 3.6) supporting the development of local reprocessors, waste based businesses, social enterprises and/or community groups throughout Gloucestershire.</p>

Source	Recommendation	GWP Response	GWP Rationale
	<p>supermarkets but it is not as convenient. What does confuse me is that I am only allowed to re-cycle plastic bottles and not food trays that are marked with a recycling symbol (the same symbol on the bottles). I would like to see some consistency in your approach.</p> <p>I am very happy to recycle but need the council to provide facilities and consistency in approach.</p>		
<p>County Council Waste Technical Manager (4th September 2007)</p>	<p>Volume 1 Page 13 reference to LAAs should include agreed targets.</p>	<p>Accept</p>	<p>Targets to be added.</p>
<p>County Council Waste Technical Manager (4th September 2007)</p>	<p>Objective 5 “Residual Waste as a Resource” states that the ‘preferred treatment processes will maximise recovery of recyclables.....’. The theme throughout the strategy is one of maximising recycling <i>prior</i> to treatment, as not all of the technologies on the shortlist of treatment process will recover recyclables to the same degree. The emphasis throughout the strategy is to optimise recovery of recyclables and gain further value from residual waste, but this must be in balance with other considerations. It is recommended that the wording be changed to ‘optimising recovery of recyclables’ to clarify this.</p>	<p>Accept</p>	<p>Amend wording as stated for clarity.</p>
<p>County Council Waste Technical Manager (4th September 2007)</p>	<p>Volume 1 Page 13 “Mixed municipal waste is not an eligible source. However if the waste is purely biogenic with a maximum content of 2% accidental contamination it then becomes eligible. For example biogas generated from food waste using an anaerobic digester would be eligible and could demand a higher premium.” Since 2007, the Renewable Obligation changed and now municipal waste’s biogenic element can gain ROCs if combusted to generate heat and power.</p>	<p>Accept</p>	<p>Paragraph to be updated to reflect this.</p>

Source	Recommendation	GWP Response	GWP Rationale
County Council Waste Technical Manager (4 th September 2007)	Volume 1 page 22 para 4 & Volume 2 section 4.5 para 2, alter residual waste dates to reflect current timeline of 2014/15.	Accept	Dates to be amended in line with current timeline.
County Council Waste Technical Manager (4 th September 2007)	Volume 2 Table 2: How are you linking these performance targets to the 60% set in the Strategy? You need to make the link and I see no link	Accept	Link to be explained in additional supporting text for purpose of clarity.
County Council Waste Technical Manager (4 th September 2007)	Volume 2 section 4.3 quotes a need for 80,000 tonnes capacity. The current estimate is now 60,000 and should be reflected in the text.	Accept	Text to be amended to 60,000 tonnes.
County Council Waste Technical Manager (4 th September 2007)	Volume 2 section 4.5 first para. If 60% recycling is achieved and waste min measures succeed, the residual waste arising may be reduced to 130,000 tonnes/annum.	Accept	Text to be amended to reflect the most accurate figure.
County Council Waste Technical Manager (4 th September 2007)	Volume 2 section 4.5, 4 th para: Can we add that EfW producing heat and power now qualifies for ROCs???	Accept	Text to be amended to reflect this.
County Council Waste Technical Manager (4 th September 2007)	Volume 2 page 11, para 2, reword the text to reflect the current approach to developing a procurement strategy.	Accept	Text to be amended to reflect this.
County Council Waste Technical Manager (4 th September 2007)	P11 Risks “Public expectations – the public demands waste facilities that are safe, economical and environmentally sound. Full consultation is needed to hear the publics view on our plans”. This statement was written before the	Accept	Bring the text up to date by removing a need for further ‘full’ consultation, but maintaining a commitment to consult

Source	Recommendation	GWP Response	GWP Rationale
2007)	JMWMS consultation and GGD therefore it can be argued that full consultation has taken place. I would like this to say that we will engage with the community during procurement and planning process.		as appropriate to need.
County Council Waste Projects Manager (4 th September 2007)	Volume 2 section 5.5 para 3 commits us to consult widely during the ongoing development and revision of the strategy. The strategy has now been widely consulted upon and it is not anticipated that further consultation will take place on an ongoing basis unless specifically defined within particular actions or during fundamental periodic review.	Accept	Amend strategy to bring up to date and reflect position moving forward.
County Council Waste Projects Manager (4 th September 2007)	The strategy reflects the forecast of a growing population in Gloucestershire, but does not reflect that this population is predicted to be increasingly aged. This may have implications for participation in services and therefore service design. The strategy should reflect this as a risk to future performance and should position us to deal with this challenge.	Accept	Amend Volume 1 section 4 to outline the context of this, and amend Volume 2 section 3.7 to identify this risk for mitigation.
Waste Planning Authority (5 th September 2007)	<p>Comments on JMWMS Volume 1</p> <p>On page 5 reference to the planning Waste Core Strategy should just be to the <i>Waste Core Strategy</i>.</p> <p>6th line from bottom of page 5 should be Waste Development <i>Plan</i> Documents to determine where these facilities should be <i>located</i>.</p> <p>The footnote at the bottom of page 5 may be more informative if it reads:</p> <p>The proposed Waste Development Plan Documents include the Waste Core Strategy (due for adoption in December 2009), a Waste Site Allocations DPD (due for adoption in March 2012), a Development Control Policies DPD (also due for adoption in March 2012) and a Proposals Map (ongoing).</p> <p>In Appendix 1: Glossary of Terms: Under</p>	Accept	Amendments to be made as stated.

Source	Recommendation	GWP Response	GWP Rationale
	Waste Local Plan, should read: <i>...Its purpose is <u>to</u> set out detailed land use policies...</i>		
Waste Planning Authority (5 th September 2007)	<p>Comments on JMWMS Volume 2 (Draft High Level Action Plan)</p> <p>Para 2.3 should read: <i>One <u>of</u> the biggest risks...</i></p> <p>Para 3.2 maybe there could be a footnote explaining what 'side waste' is. Unclear.</p> <p>Para 4.6 on Land could read: <i>Securing land for the siting of the waste treatment infrastructure is key. If the site or sites are not acquired by the County Council then clearly a willing landowner is necessary. Additionally a wide range of important environmental and land-use related criteria will have to be met. The facility will need to accord with the statutory 'Development Plan', including:</i></p> <p><i>Policies in the Regional Spatial Strategy;</i></p> <p><i>Saved policies and sites in the adopted Waste Local Plan; and</i></p> <p><i>Waste Development Plan Documents – as they are adopted.</i></p>	Accept in part	Amendments to be made as stated, apart from reference to 'willing landowner' in para 4.6 as this does not reflect the current position.
Waste Planning Authority (5 th September 2007)	<p>Comments on JMWMS Environmental Report</p> <p>The introduction to this Environmental Report states: <i>"Whilst there is no legal requirement for a Sustainability Appraisal to be conducted on this JMWMS, it is Gloucestershire's intention that the strategy take into account and work towards the broader aims of sustainable development. As such the environmental appraisal required by the SEA Directive and transposed regulation has been widened to include appraisal of some economic and social issues deemed to be of relevance."</i></p> <p>This is welcomed by the WPA who are undertaking SAs on their emerging Waste DPDs. It is the WPA's intention to carefully consider and reference the results of this Environmental Report in</p>	Noted	No action.

Source	Recommendation	GWP Response	GWP Rationale
	<p>terms of the scoring of the Waste Core Strategy Options that relate to the management of MSW.</p>		
<p>Natural England (5th September 2007)</p>	<p>Comment on JMWMS Environmental Report</p> <p>Table 4 (SEA objectives and sub-questions) refers to minimising global biodiversity impacts, a theme which recurs throughout the document. Natural England recognizes the value of this approach. However we are concerned that the revised document does not deal with the effects on local biodiversity. We would certainly agree that assessing impacts on local biodiversity is difficult until the location of waste management facilities has been established. However, that does not mean that impacts on local biodiversity should be completely ignored. Table 19 (Amendments made to the original objectives and sub-questions) now drops impacts on local biodiversity as an indicator. We would suggest that since there may be impacts from the strategy on local biodiversity, even if these cannot be quantified, some mitigation measures should be included in Table 17 e.g. 'where harm to local biodiversity may occur, measures will be taken to avoid harm if possible. Where harm cannot be avoided then it will be mitigated as fully as possible',</p>	<p>Accept</p>	<p>We accept this recommendation and will amend the Environment Report as necessary.</p>

Source	Recommendation	GWP Response	GWP Rationale
Environment Agency (6 th September 2007)	We welcome the strategy set out in the Draft Headline Strategy. In particular, we are pleased that climate change and sustainability are central themes. The objectives and targets are all deemed appropriate. We also welcome the route map and would support the bullet points set out in section 6.2 for increased and enhanced recycling and composting.	Noted	No action.
Environment Agency (6 th September 2007)	We note in section 5.1.4 that the Strategy does not currently cover the management of commercial waste. We would encourage this to be incorporated as sustainable management of <i>all</i> sources of waste is crucial for tackling climate change.	Noted	The paragraph quoted goes on to state that we aim to explore how we can assist the sustainable management of commercial wastes and that this is included in our action plans. High Level Action Plan section 3.2.1. states that in the long term we will explore the possibility of providing county wide commercial waste recycling schemes. In the short term, our current draft action plans include the implementation of a BREW funded waste minimisation programme for local businesses. We aim to seek further funding to maintain this programme.
Environment Agency (6 th September 2007)	The Draft High Level Action Plan is also welcomed as it too has a good environmental ethos. We note the section on risks (4.6). The issue of resources is an important one. We consider that financial considerations should not be given greater emphasis than environmental ones. Sustainable waste management should encompass a balance between social, economic and environmental considerations, and it should be acknowledged and understood how these three criteria are interrelated.	Accept	It is accepted that a balance between social, financial and environmental considerations should be made. This approach is taken in options appraisals and is also reflected in the Environmental Report.

Source	Recommendation	GWP Response	GWP Rationale
Environment Agency (6 th September 2007)	The risk associated with planning permission is also noted. We recommend that developers and Planning Authorities make use of early pre-consultation working to attempt to identify and resolve problems before planning applications are submitted. We also recommend the same front-loading/pre-consultation approach at the strategic planning stage.	Noted	No further comment.
Environment Agency (6 th September 2007)	<p>With reference to the Environmental Report.</p> <p>In general, the report seems to be clear and comprehensive. We would point out a few matters:</p> <p>Objective ENV2 in Table 4 should reflect the 'protect and enhance' methodology</p> <p>Appendix 2 could include other planning policy statements, including the draft consultation on PPS 1 supplement on Climate Change.</p> <p>We note the mitigation proposals put forward for where there are negative impacts. There should also be proposals for maximising positive impacts.</p>	Accept in part	<p>In relation to point 1: The ENV2 objective relates to assessing impacts on global biodiversity. It is felt that the wording of the current objective i.e. to "minimise global biodiversity impacts" and the methodology undertaken for the appraisal is sufficiently robust for the purposes of the report and is broadly reflective of a 'protect and enhance' methodology. Given that the JMWMS does not address any issues that are site specific in nature we are confident that the methodology used is the most appropriate for this Environmental Report and no changes are proposed.</p> <p>In relation to point 2: The comment is noted and other relevant Planning Policy Statements will be included within the Environment Report as appropriate.</p> <p>In relation to point 3: Whilst not a legal requirement, we acknowledge that there is merit in this approach. The Environment Report will be amended to reflect a desire to maximise the positive</p>

Source	Recommendation	GWP Response	GWP Rationale
			impacts noted. This will be either in the form of general text, or specific measures as is deemed appropriate.
Quedgeley Parish Council (4 th September 2007)	<p>Members of Quedgeley Parish Council considered the report and would respond as follows:</p> <p>No allocation has been made for Cheltenham</p> <p>Serious concerns were raised regarding the possibility of this eventually becoming a tip such as the one at Hempsted.</p> <p>Javelin Park has obtained planning permission for a distribution centre but this is an inappropriate location and should be allocated for recycling only not final disposal.</p>	No change to JMWMS	As presented, these concerns are outside the scope of the JMWMS as they refer to specific site planning issues.
Dean Community Compost (6 th September 2007)	<p>Draft Headline Strategy: 5.3 Targets</p> <p>Given that work at DEFRA is well advanced to include an allowance for home composting in recycling and composting performance figures, there is no reason not to include the provision of support for home and community composting in the opening bullet point. By this we mean advice, promotion, and provision of a wider range of subsidised equipment than currently available (eg, also subsidised womeries, “green cones” and Bokashi systems, which can deal with ALL home biowastes, and also the availability of a subsidised shredding service for coarser garden wastes.</p> <p>While we understand that home composting sits between “waste minimisation” and “recycling and composting”, the anticipated inclusion of home composting in the LATs figures means that measures to support it should be included where targets are</p>	Accept in part	<p>The statement shown in 5.3 is a reproduction of the existing LGA vision statement. We also believe that this is not an appropriate ‘target’ but rather an aspiration. The statement has been removed from this section and relocated to the supporting text in section 5.1.1.</p> <p>The strategy aims to promote home composting as well as develop additional collection services. Current promotional schemes already provide subsidised equipment (including the Bokashi system) and we seek through this strategy to maintain and develop</p>

Source	Recommendation	GWP Response	GWP Rationale
	<p>discussed.</p> <p>We therefore suggest a new wording “<u>All households in Gloucestershire will have support to make home composting as attractive, easy and effective as possible, backed by</u> convenient and easy to use.....”</p> <p>With home composting due to be included in targets this measure will improve performance against targets as well as “true” performance (which as we know is not quite the same thing), and has the added advantage of being consistent with your own headline strategy (Objective 4, Composting Hierarchy).</p>		<p>support to promoting home composting.</p> <p>We recognise that the government are looking at mechanisms for the inclusion of home composting within existing targets, and await guidance resulting from this. Our strategy does not exclude such a development.</p>
Dean Community Compost (6 th September 2007)	<p>Draft Headline Strategy Route Map 6.2</p> <p>The “route map” (ch 6) states:</p> <p>“If each District introduces good quality three stream collection systems, (backed up by successful & timely development of in-vessel composting infrastructure by Gloucestershire County Council) we estimate that each individual household could theoretically have the potential to recycle 70% of their rubbish. At an 80% public participation rate (supported by a partnership-driven communications campaign), this could result in excess of 50% recycling performance across Gloucestershire.”</p> <p>Once again you ignore your own strategy and fail to highlight the role of home and community composting. You have also failed to update this paragraph to reflect the improvement in the headline strategy objective 3 which now states (our emphasis):</p> <div data-bbox="571 1637 810 1861" style="border: 2px solid green; padding: 5px; margin: 10px auto; width: fit-content;"> <p><u>As a minimum,</u> collection services will be provided for these three basic streams.</p> </div>	No Change to JMWMS	<p>Objective 4 already promotes home composting explicitly. The ‘route-map’ diagram must be read in the context of the previous paragraph which relates to the development of collection and disposal services.</p> <p>Actual targets for recycling and composting stretch us to 60% by 2020, which is beyond the ‘in excess of 50%’ stated in the route map for collection and disposal services. This will drive performance higher, but any decision on whether and how to incorporate home composting in reporting these figures will be taken at a national level.</p>

Source	Recommendation	GWP Response	GWP Rationale
	<p>We suggest rewording as follows:</p> <p><i>“If <u>home and community composting support is intensified and extended</u>, and each District introduces good quality three-stream-<u>plus</u> collection systems, (backed up by successful & timely development of in-vessel composting infrastructure by Gloucestershire County Council) we estimate that each individual household could theoretically have the potential to recycle 70% of their rubbish. At an 80% public participation rate (supported by a partnership-driven communications campaign), this could result in excess of 50% recycling performance across Gloucestershire.”</i></p> <p>You could then increase your target percentages accordingly</p>		
<p>Dean Community Compost (6th September 2007)</p>	<p><u>High Level Action Plan 3.5 (HRCs)</u></p> <p>We welcome the widening of facilities at the HRCs, eg to include WEE and “re-usables” collection. However, we might point out (as householders as much as anything) that five HRCs county-wide is an inadequate number, considering the soaring demand from householders for facilities for responsible waste disposal of all kinds. Futhermore, someone needs to ensure these centres and their services are properly advertised to the public. For example on the Forest of Dean website, only minimal information is provided about the site in Broadwell (and until very recently, it was still described as “the tip” on their site!).</p>	<p>Noted</p>	<p>Continual improvement in our communications is an important facet of objective 1 : Changing Behaviour. In addition, HRC service provision in terms of sites themselves is under review and the range of materials they collect is continually improving. HRC’s remain an important service and contribute to our overall performance targets.</p>

Source	Recommendation	GWP Response	GWP Rationale
Dean Community Compost (6 th September 2007)	<p>Lastly, we hope that any decision on biowaste collection options will reflect the recent pronouncements from DEFRA in the England Waste Strategy 2007 that:</p> <p>“9. There are strong arguments for encouraging more separate collection of food waste, especially since it can help achieve environmental gains more cost-effectively, including through the use of anaerobic digestion to provide energy (see Annex D for more detail on this). Separate collection of food waste has so far been introduced by a small number of authorities, all on a weekly basis and WRAP research suggests this can lead to higher tonnage and participation rates. The Government welcomes the fact that many local authorities are promoting home composting of organic waste.”</p> <p>From Ch 5 of new England Waste Strategy (2007)</p> <p>And in more detail: (From Annexe D)</p> <p>“58. The Eunomia Report¹ investigated ‘the most cost effective and environmentally sustainable ways of diverting household food waste from landfill that leads to the production of a saleable product’. The report concluded that collecting food waste separately allows processing costs to be minimised but can also increase the amount of waste captured.”</p>	Noted	Any service change will continue to consider different options on a range of merits. Volume 2 section 3.2.1 states that such service changes will be subject to further consultation and member approval.

Source: JMWMS – Recommendations for amendment resulting from Second Consultation round.
http://www.recycleforgloucestershire.com/joint_strategy

Following the end of the public consultation period Eunomia Research & Consulting received comments from Mr Alan Watson, a public interest consultant regarding a

¹ Eunomia for WRAP, *Dealing with Food Waste in the UK*, March 2007; available at http://www.wrap.org.uk/local_authorities/biowaste.html

number of specific points of accuracy within the Environmental Report. Although the comments were received after consultation close, it is considered important that they are addressed within the context of this statement in order to provide clarity.

Issue 1 - Waste Growth rates: The report says at “2.4.2.8 Material Assets” that “Analysis of the historic waste growth has been used to project future waste arisings. Detailed analysis shows that waste growth is likely to reduce to an average of 1.6% per annum between now and 2020.” Could you clarify what that “detailed analysis” was? I wonder why this analysis showed waste growth rates so much higher than the rest of England (based on, for example, the 0.5% from WS2007)?

Response: The detailed analysis was based upon projecting forward historical waste growth rates of each stream of Municipal Solid Waste (Civic Amenity waste, dry recyclables, separately collected biowaste, residual waste, bulky household waste, commercial waste collected by the local authorities etc). These growth rates were then modified as appropriate, taking into account planned service changes by each local authority. The level of adjustment made in light of the service changes was based on evidence gathered from other local authorities. Therefore, whilst the projected future growth rate is higher than that provided in the Waste Strategy 2007, the analysis is considered robust, providing as accurate a picture as possible for waste growth rates in Gloucestershire.

Issue 2 - Incinerator Ashes: The report suggests, as proposed mitigation, “Use fly ash for neutralisation in chemical industry”. This has been picked up with some enthusiasm by Gloucestershire CC but I wonder what the basis for the recommendation is given that the ashes are still relatively highly contaminated with dioxin (generally c 1000 ng/kg TEQ upwards) and heavy metals. These dioxins, and the mobile heavy metals are then largely lost to environmental control when mixed with the salts from the neutralisation process (at best they are treated as non-hazardous wastes and landfilled in standards sites). You also suggested “consider use of stabilisation / vitrification of fly-ash prior to landfill disposal”. Isn’t some form of stabilisation essential given that fly ash won’t meet the landfill Directive WAC (or even the 3X exemption) without it? In relation to bottom ash the report says “The remaining bottom ash can be used in tarmac or to make breeze blocks as it is not considered to pose risks to health or the environment”. About 10% of bottom ash fails the H14 ecotoxicity tests for hazardous wastes (see the attached EA www site and the reply from the EA to PIC from last March) and it may be useful to flag up the risks that this can pose in securing after-use. The Agency are ignoring this for as long as they can but I feel very uncomfortable about hazardous wastes “recycled” even in bound applications.

Response: There are two residuals from the combustion of waste regardless of technology used:

- Air pollution control residues (APCR). This is fly ash, mixed with the lime and carbon that are normally used to scrub acid gases and dioxin. APCR is, in contrast to untreated fly ash, very alkali (due to the presence of lime). APCR represents around 3-4% of the weight of the input waste. The levels of dioxin depend on the heat of the burn: for example, gasification results in much lower dioxin levels than straightforward incineration.

- Bottom ash. This is from the bottom of the incinerator vessel. It represents around 25% of the volume of the input waste.

The SEA stated that as a possible mitigation for fly ash (taken to mean APCR), it could be used for neutralization in the chemical industry. Although we have seen that while there are cases of this being used, it should not be relied upon as mitigation for the creation of fly ash, nor for the immobilisation of pollutants within the fly ash. This is an area of developing new techniques (as witnessed by the European Integrated Pollution Prevention and Control Bureau's reference document on the best available techniques in this area), and so should be monitored. Any opportunity to reuse the material safely will be significant in economic terms, but the key mitigation activities are to minimise and immobilise the pollutants. The impact of these pollutants is discussed in the section in the ER on modern thermal treatments.

The ER suggested that the use of stabilisation or vitrification of fly ash prior to landfill disposal be considered. Untreated fly ash is only able to be sent to hazardous waste landfill (e.g. Bishops Cleeve, in Gloucestershire). This is made clear in Appendix 5 of the document. Therefore, stabilisation would definitely be required if it were to be sent to non-hazardous landfill. If utilisation of the fly ash is to take place, this ought to ensure that the ultimate fate of any toxic elements in the ash is not such that these pollutants are mobilised in the environment. Failing this, stabilisation prior to landfilling would seem the most appropriate option if the pollutants cannot be removed at source. If best available techniques support the reuse of this material, then that would mitigate the environmental impact further.

Bottom ash is listed as non-hazardous by the Environment Agency, but recent tests for the agency itself indicate that it does not always meet such standards. Currently, it can be reused in a number of applications, mostly in the building trade. However, attention must be paid to the composition of the bottom ash, as it will contain traces of metals, including zinc, lead and mercury. As is made clear in Section 8.2.3 of the SEA, use of bottom ash is not counted towards recycling targets.

3.4 Why the Final JMWMS was Chosen

The final JMWMS was chosen to reflect what is perceived by the GWP (taking into account all responses received to the consultation exercises) to be the best Strategy for Gloucestershire, bearing in mind constraints and requirements such as the cost of delivering the strategy, the varied nature of the County of Gloucestershire, Government regulations and the need to achieve broad sustainable development across the county.

The objectives and targets adopted are seen to be challenging yet achievable. The GWP did not wish to set more stretching targets so as to prevent setting the County up for failure, whilst more lax targets were also felt to be inappropriate since they would not push the county forwards sufficiently in terms of sustainable waste management.

In terms of specific actions on waste prevention, collection, treatment and disposal, the specific mechanisms by which these will be achieved are for the action plans which will be updated on an annual basis. The local authorities will use the ER to

support this decision making process. It is not appropriate for these actions to be set out in detail, covering the whole strategy period. Final decisions will be based upon issues such as:

- How the actions implemented will contribute to the targets and objectives of the strategy;
- The environmental, social and economic impacts of the actions for Gloucestershire;
- The cost of implementing the initiative;
- Likely public support and uptake.

4.0 Monitoring of the JMWMS

Producing a strategy such as the JMWMS will have little value if progress towards meeting the objectives and targets set out are not monitored and measured. It is important that any environmental (and social and economic) impacts arising from the actions taken by the authorities and other organisation as a result of the strategy are also identified so that any appropriate remedial action can be taken. This section of the statement sets out how both progress towards achieving the aims set out in the JMWMS and any secondary environmental, social and economic negative impacts (as identified in the ER) will be monitored.

4.1 Monitoring, and Review of the Strategy

The Headline Strategy document sets out how progress towards meeting the strategy objectives and targets will be achieved. This section is based heavily upon the Monitoring section of the adopted JMWMS.

The key element in working towards the targets is the production of an annual action plan by each of the Gloucestershire authorities. The GWP will then monitor performance and progress against the action plans on a regular (quarterly) basis.

Financial reporting will, for the foreseeable future, be through each local authority’s own budget management systems, although a pooled fund specifically for joint working is currently held by Gloucestershire County Council on behalf of the GWP. Spending of this fund will be managed by a waste officers group and reported quarterly to GWP.

Table 3 is taken from the JMWMS and shows the rolling timetable for monitoring and reviewing the Strategy that will be used by the Gloucestershire Authorities.

Table 3: JMWMS Objective and Targets: Monitoring and Review Timetable

Month	Action
March	Commence implementation of agreed annual action plan
June	First quarter reporting to GWP
September	Second quarter reporting to GWP

Month	Action
	Commence preparation of following year's action plan and resource plan for consideration in local authorities' budget setting process
December	Third quarter reporting to GWP
February	Finalisation & agreement of following year's action plan and resource allocation.
April	Year-end reporting to GWP. Commence implementation of agreed annual action plan. Complete the Annual Monitoring Report.

In addition to the quarterly reporting to the GWP, an annual Monitoring & Review Report will be produced, and every five years it is anticipated that a fundamental review of the Strategy will be undertaken to ensure that the core objectives within the JMWMS are still moving Gloucestershire towards sustainable waste management.

4.2 Monitoring, and Review of Environmental Impacts

The ER set out a monitoring framework that is designed to facilitate the identification of environmental issues resulting from the implementation of the JMWMS.

Table 4 sets out the monitoring framework that the authorities will implement to identify and then mitigate any significant negative environmental (and social and economic) impacts arising from the implementation of the strategy. It is the responsibility of Gloucestershire County Council and the Districts to gather the required information and implement any remedial action should any negative impacts be identified. Upon implementing the strategy, it may be found that some of the data is not readily available. Where this is the case and the Gloucestershire authorities have taken reasonable measures to obtain the required data, another measure for monitoring the specific objective will be sought.

The monitoring proposals are intended to be flexible over the course of the strategy, as technical and scientific advances may mean that alternative measures become more appropriate, accurate or cost effective.

Table 4: Proposed Monitoring Framework for Impacts Identified in the ER

Objective	Indicator/ Information Required	Frequency	Data Source	Suggested Trigger for Remedial Action
Reduce requirement for mineral and primary material extraction globally.	Tonnage of material recycled (by type). Material Requirement Data	Annual	WCAs/ WDA	Decrease in annual tonnage of HH waste recycled
Minimise global biodiversity impacts.	Tonnage of material recycled (by type). Material Requirement Data	Annual	WCAs/ WDA	Decrease in annual tonnage of HH waste recycled
To manage waste in accordance with the	Waste arisings and tonnage recycled/composted	Annual	WCAs/ WDA	Increase in waste arisings above projected growth rate and decrease in

Objective	Indicator/ Information Required	Frequency	Data Source	Suggested Trigger for Remedial Action
waste hierarchy.				recycling/composting rate
To encourage the wise use of land and protection of soils.	Waste developments in line with WCS	Ongoing	GCC	None proposed
To reduce emissions of greenhouse gases and increase adaptability to climate change.	Tonnage of GHG emitted from waste management operations	Annual	Emission data from facilities	Increase in emissions greater than proportional change in waste treatment/ disposal. Any breaches in WML/PPC permits relating to greenhouse gas emissions
To protect and enhance air quality.	Air pollutant emissions of SOx, NOx, ozone, dioxins and particulates	Annual	Operators / Environment Agency Clean Air for Europe / European Commission study on externalities from landfill and incineration	Proportional change in emissions greater than change in waste arisings Any breaches of WML/PPC permits relating to local air emissions
To minimise net energy balance requirements.	Energy balance information – energy generated, energy offsets and energy used in waste collection, treatment and disposal	Annual	Facility operators, waste contractors.	Increase in energy use per unit of waste
To protect and/or improve water resources and quality.	Water use Water quality measures around waste facilities	Quarterly	Contractor/ Environment Agency	Any increase in water use by processes over and above increase in waste quantities treated. Any breach of any water abstraction permits Any decrease in water quality/ breach of discharge consent
Minimise the impact of waste management on landscape and townscape character, tourist assets and the historic environment.	Waste developments in line with WCS	Ongoing	GCC	None proposed.

Objective	Indicator/ Information Required	Frequency	Data Source	Suggested Trigger for Remedial Action
To minimise nuisance.	Number of fly tipping incidents reported on 'Flycapture'	Annual	WCAs	Year on year increase in fly tipping incidents
To protect and improve the health and well being of people living and working in Gloucestershire as well as visitors to the County	Air pollutant emissions of SO _x , NO _x , ozone, dioxins and particulates	Annual	PCT, Environment Agency	Any confirmed incidence of poor health due to waste management activities
Increased community participation in waste management activities	Participation rates Degree to which the local community feel informed and engaged	Annual participation survey Every two years for public survey	WDA/WCAs	Any decrease in participation. At least a 10% decrease in awareness
To provide opportunities for education and encourage behavioural change to enhance protection of the environment.	Degree to which the local community feel informed and engaged	Every two years	GWP	At least a 10% decrease in awareness
To improve access to waste management facilities throughout Gloucestershire	Service coverage Incidences of repeat missed collections in six weekly period, (including residual waste) Number of assisted collections provided on time	Twice annually	WCAs	10% increase in the number in repeat missed collections 10% increase in missed collections
To reduce road congestion and pollution, and promote more sustainable means of transport	Distance travelled by waste collection vehicles	Annual	Waste Contractor	Year on year increase after long term collection scenario implemented
To increase opportunities for economic development, to people from all social and ethnic	Number of companies known to be involved in supporting waste reduction/ recycling activities	Annual	GWP	None proposed

Objective	Indicator/ Information Required	Frequency	Data Source	Suggested Trigger for Remedial Action
backgrounds				
Minimise cost of waste management	Net system costs Value (current and future) of landfill allowances	Annual	GCC/WCAs	Increases in costs over and above projected contract costs
To provide sufficient capacity for managing the projected volumes of waste arisings during the period of the strategy	Amount of waste leaving the county to be disposed (as opposed to recycled) Waste growth rates	Twice annually	GCC	Waste being diverted for disposal to sites outside of the county Waste growth rates rise above projected
Local biodiversity	Change in condition of areas of ecological importance	Annual	Biodiversity Action Plan, GCC.	Where link shown between JMWMS and a significant negative impact on local biodiversity, flora and fauna