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## **Towards Zero Waste One Wales: One Planet**

Consultation on a Waste Prevention Programme for Wales  
**Sustainability Appraisal**

**March 2013**



# **Towards Zero Waste**

## **Waste Prevention Sector Programme**

### **Sustainability Appraisal Report**

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## **NON TECHNICAL SUMMARY**

### **Background**

In April 2009, the Welsh Government launched its Overarching Waste Strategy Document for Wales, 'Towards Zero Waste' (TZW). This document sets out a long term framework for waste management and resource efficiency until 2050. The Welsh Government is in the process of developing an initial series of seven sector plans to support and implement TZW.

In line with Welsh Government's legal duty with regard to sustainability, the Sector Plans are each subject to separate Sustainability Appraisal (SA)/Strategic Environmental Assessment (SEA), Health Impact Assessment (HIA) and Habitats Regulations Assessment (HRA), which will subsequently emerge, to accompany the overarching Strategy.

Parsons Brinckerhoff (PB) has been commissioned to support Welsh Government by undertaking the SA/SEA, HIA and HRA processes for the Waste Prevention Programme.

### **Purpose of this Report**

This report presents the SA/SEA stages following the scoping report stage undertaken in Autumn 2010. It describes the process whereby the Waste Prevention Plan actions have been screened and assessed and presents the findings of the assessments that make up the SA/SEA, HIA and HRA. The report also presents a consideration of two 'alternatives' to the proposed Waste Prevention Programme.

This report uses information from the SA/SEAs, HIAs and HRAs conducted for the TZW Sector Plans which form the basis of the Waste Prevention Programme. These comprise the Municipal Sector Plan Part 1 (MSP1), Industrial and Commercial Sector Plan (I&C) and the Construction and Demolition Plan (C&D). It also takes into account consultation responses to the Scoping Report (2010) and comments received during the consultations on the previous sector plans.

This report is being issued for public consultation alongside the draft Waste Prevention Programme. We welcome all your comments on the content of this Report, in particular:

- Do you agree with the approach taken in this report and the conclusions reached? If not, please explain your reasons.
- Are there any other links between the draft Waste Prevention Programme actions and other Sector Plans actions?
- Are there any other recommendations that could be included against the actions to improve their sustainability going forward?

### **The Waste Prevention Programme**

The Waste Prevention Programme provides a record of the proposed strategy and actions and actions in relation to waste prevention and reuse for the municipal, commercial /industrial and construction / demolition sectors in Wales. When finalised following consultation, it will form part of the suite of documents that together comprise the statutory waste management plan for Wales as required by UK and EU legislation. It will focus on

- the wastes produced directly by the sectors (with a focus on waste prevention, and reuse),
- the mechanisms by which the above sectors can facilitate a reduction in the waste that they generate by focusing on the products produced by the respective sectors.

#### Consideration of Reasonable Alternatives

Two alternative scenarios have been discussed with Welsh Government and considered as reasonable alternatives, a 'do minimum' and a 'do maximum' scenario.

Option 1 Do Minimum Alternative (TZW / 'Business as Usual' scenario). This alternative considers the 'no plan' alternative which would consider the sustainability effect of producing the Waste Prevention Programme compared to not producing the Waste Prevention. This alternative includes minimum actions required to meet the objectives and targets of TZW and current legislation/policy.

Option 2 (Preferred Option) Best Practice – The draft Waste Prevention Programme. This option is considered a medium level intervention and assumes the adoption of best practice measures currently available and behaviour to ensure that the TZW requirements are met within timeframe.

Option 3 Do Maximum Alternative (Beyond Best Practice) – This option is considered a high level intervention and provides the maximum potential of the plan assuming that resource efficiency strategy with the highest financial and resource investment is potentially available. It will guarantee exceeding the TZW targets within a shorter timeframe.

Option 2 is the preferred option for the development of the draft Waste Prevention Programme and that will be adopted subject to the outcome of the SA.

#### **The Sustainability Appraisal Process**

The SA approach will follow an integrated assessment methodology 'SA/SEA' to comply with the requirements of the SEA Directive as transposed into Welsh law by "*The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004*".

Following on the work previously undertaken for TZW, the scoping report for the Sector Plans and its consultation responses, this report is based on a revised version of the baseline information, relevant plans, policies, programmes and sustainability issues and opportunities. In line with the findings of this review, a revised sustainability framework was adopted to assess the sustainability of the Waste Prevention Programme actions.

A HRA and HIA were carried out in parallel to the SA/SEA process and the main findings have been covered in this report.

#### **The Sector Plan SA Approach**

The SA approach adopted comprises the following steps:

*Compatibility test of the Sector Plan Objectives against the SA Objectives*

A matrix was produced to assess whether the objective(s) of the Waste Prevention Plan are broadly compatible or not compatible with SA objectives, or whether there was uncertainty over compatibility or no relationship between the objectives.

#### *Screening of Actions to identify actions for inclusion in the SA*

A screening of actions is the process to identify which actions proposed in each Sector Plan can be taken forward to the SA.

#### *Assessment of Actions*

This stage considers the social, environmental and economic effects of each action being considered in the Waste Prevention Programme.

#### *Description of Cumulative Effects*

Potential for secondary, cumulative and/or synergistic effects were also considered and described as part of the assessment of the actions.

#### *Consideration of Reasonable Alternatives*

The SEA Directive requires taking into account "reasonable alternatives" outlining the reasons for the selection of alternatives and describing how the assessment was undertaken.

### **Habitats Regulations Assessment**

The HRA was undertaken in parallel with the SA allowing feedback of the outputs from the assessment process at the earliest stage.

This report addresses the requirements for screening assessment undertaken as part of Stage 1 of the HRA process to establish whether or not the likely impacts of the Waste Prevention Programme is likely to have significant effects upon Natura 2000 sites.

Through the HRA screening it has not been possible to categorically demonstrate that Waste Prevention Programme will not have any likely significant effects upon Natura 2000 sites, the Natura 2000 network or Ramsar sites. Given the uncertainty relating to the likelihood of significant effects, further detailed assessment through 'Appropriate Assessment' is considered necessary to satisfy the requirements of the Habitats Regulations. However given the strategic level of the plan and lack of detail on potential projects or proposals for its implementation there is insufficient detail at this time to enable a more in-depth analysis to the degree required for Appropriate Assessment. It will only be possible to undertake this level of assessment once specific projects are proposed and/or once sufficient detail is available at the plan level to enable a thorough and robust analysis to be carried out.

### **Health Impact Assessment**

The HIA was undertaken in parallel with the SA allowing feedback of the outputs from the Appraisal process at the earliest stage.

The purpose of an HIA is to identify and assess both the beneficial and detrimental effects of the draft Waste Prevention Programme on human health. The HIA recommends aims to enhance the benefits whilst minimising its potential detrimental effects of the plan.

A number of potential opportunities and barriers to health and well-being were identified through the HIA of the Waste Prevention Programme have been identified. These are listed below:

- All positive health impacts resulting from assessment of the Waste Prevention Plan were confined to those actions which involved a proactive measure, for example mandatory measures for companies to implement Environmental Management Systems and actions to set targets for resource efficiency.
- Actions within the Waste Prevention Programme which were either passive or non-specific were assessed as being either optional or indistinct and therefore their outcome could not be confirmed. This includes actions suggesting companies be proactive in accessing online guidance or actions proposing Welsh Government to investigate further the feasibility of incentivising resource efficiency. Such passive or non-specific actions were therefore assessed as having no health impact.
- A strong association exists between long-term unemployment and poor health. Therefore where the Waste Prevention Programme generates new employment opportunities, it was assessed as providing a potential positive health impact on economy and employment.
- Actions within the Waste Prevention Programme which result in a reduction in waste arisings (for example, mandatory resource efficiency requirements to be included in Facilities Management contracts in Wales or mandating waste reduction through permits) are likely to decrease emissions from waste processing and disposal. This in turn would provide potentially direct positive health benefits to both social capital and the environment.
- The actions resulting in a reduction in waste arisings were also assessed as providing direct positive health impacts upon the economy and employment, through introducing potential resource and financial savings within the municipal, I&C and C&D Sectors.
- Though assessed as providing positive health impacts to economy and employment as well as environment, failure of small businesses to achieve the required waste reduction standards could result in either a loss of positive health impacts or negative health impacts.

## **Sustainability Appraisal Findings**

### Assessment of Actions

No significant adverse effects have been anticipated in the assessment of the Waste Prevention Programme actions. If proposed mitigation and enhancement measures are incorporated in the draft Waste Prevention Programme, it is expected that the implementation of the Waste Prevention Programme will have an overall positive effect.

### Description of Cumulative Effects

The cumulative effects on the waste management and waste infrastructure SA objectives are likely to be significantly positive when considered together with the other 6 sector plans to support 'Towards Zero Waste' (TZW) and other waste plans in England and Wales, generally due to the commitments from national, regional and

local government to reduce the amount of waste being sent to landfill through initiatives such as those set out in the draft Waste Prevention Programme.

The cumulative effects on the landscape, biodiversity and cultural heritage, soil, water, air quality/noise and odour and climate change SA objectives are likely to be positive at a strategic level due to the combined effects of the draft Waste Prevention Plan and other waste plans and programmes in optimising materials use and in reducing reliance on landfill/residual treatment. There is however some potential for local cumulative adverse effects depending on the physical developments which may lead from the actions set out in the draft Waste Prevention Programme with other developments on the ground, and the potential cumulative effects of such developments should be considered at local level through the planning application process.

The cumulative effects of the draft Waste Prevention Programme with other plans, programmes and projects on the health SA objective are difficult to predict. At a strategic level, it is more likely that cumulative health effects will be positive.

The Waste Prevention Programme contains actions linked to other TZW Sector Plans, such as the municipal, I&C and C&D Sector Plans. The positive effects of those plans can enhance positive effects and offset potential adverse effects generated by the Waste Prevention Programme.

#### Assessment of Alternatives

Overall, Option 2 (best practice) has been assessed as having a more positive effect than Option 1 (do minimum alternative) and a slightly less positive effect than Option 3 (beyond best practice).

The results of the options assessment against the waste infrastructure and waste management objectives indicate that:

- Option 1 has been assessed as having a less positive effect than Option 2 which will guarantee meeting the TZW objectives within the timeframe; and
- Option 3 would be a slightly more beneficial option compared to Option 2. However, Option 3 would be more expensive to implement and it provides an insight into the maximum potential of the plan to achieve even better targets in a shorter timeframe through the availability of highest financial and resource investment, mandatory targets and eco-design to priority and other sectors, mandatory targets for resource efficiency and waste reduction through permits, and employment of business advisors to provide one to one support.

The assessment also indicates that:

- No significant differences between Options 1 and 2 have been identified for meeting the landscape, biodiversity and cultural heritage, soil, water, air quality, noise and odour, climate change, health and civic engagement objectives; Option 3 is likely to have more positive effects on these objectives than the other two options. Actions such as highest financial and resource investment, mandatory targets and environmental standards and support of full programme of business efficiency will enhance the positive effects of the other two Options within a shorter timeframe.

#### **Monitoring**

Welsh Government will be responsible for the implementation of a monitoring strategy for the Waste Prevention Programme. Monitoring involves measuring indicators which establish a link between implementation of the Waste Prevention Programme and the likely effects being monitored. Indicators presented on the environmental baseline should be considered and reviewed to ensure that potential environmental, social and economic effects of the Waste Prevention Programme can be effectively measured and monitored after its adoption.

Most of sustainability monitoring indicators proposed for each objective are described in the 'State of the Environment Report'.

Potential sources of information include data and statistics held by Welsh Government (StatsWales), Environment Agency Wales, Countryside Council for Wales, Department for Environment, Food and Rural Affairs (Defra), the Nuclear Development Agency, the Department of Energy and Climate Change and Public Health Wales.

### **Conclusions**

No significant adverse effects have been anticipated in the assessment of the Waste Prevention Programme. Provided that proposed mitigation and enhancement measures are incorporated in the draft Waste Prevention Programme, it is expected that the implementation of the Plan will have a strong positive effect on waste infrastructure and waste management SA objectives and a positive effect on all other objectives.

### **Next Steps**

#### Consultation

This report will be updated to incorporate the results of consultation of this report and changes during the development of the final Waste Prevention Programme.

We welcome all your comments on the content of this SA Report, in particular:

- Do you agree with the approach taken in this report and the conclusions reached? If not, please explain your reasons.
- Are there any other links between the draft Waste Prevention Programme actions and other Sector Plans actions?
- Are there any other recommendations that could be included against the actions to improve their sustainability going forward
- Are there any other monitoring indicators that could be used to monitor the sustainability of the Waste Prevention Programme?

#### Other steps

The consultation comments will be reviewed and the Waste Prevention Programme will be amended accordingly.

A Post-adoption Statement will be issued to summarise how the SA has influenced in the development of the Waste Prevention Programme.

The consultation period will run until June 20 2013. Should you wish to send any comments on the contents of this Sustainability Appraisal Report, or in response to the questions posed above please reply by letter, fax or e-mail to:

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Department for Environment and  
Sustainable Development  
Welsh Government  
Cathays Park  
CF10 3NQ

Email: [wastestrategy@wales.gsi.gov.uk](mailto:wastestrategy@wales.gsi.gov.uk)  
Telephone: 0300 0603300 or 0845 010 3300

## **1 INTRODUCTION**

### **1.1 Overview**

1.1.1 In April 2009, the Welsh Government launched its Overarching Waste Strategy Document for Wales, 'Towards Zero Waste' (TZW). This document sets out a long term framework for waste management and resource efficiency until 2050. It describes the ways in which sustainable waste management can be delivered in Wales and builds on the previous waste strategy 'Wise about Waste', which was launched in 2002.

1.1.2 TZW sets out an ambitious target to achieve 70% recycling in the medium term and to achieve zero waste (100% recycling) by 2050. The Welsh Government is in the process of developing sector plans to support TZW. The sector plans developed for each of the identified sectors shall explain how specific sectors should manage resources to achieve the stated outcomes.

1.1.3 Welsh Government has a legal duty with regard to sustainability. The preparation of TZW was informed by the Sustainability Appraisal (SA) incorporating Strategic Environmental Assessment (SEA) (referred to hereafter as SA/SEA), a Health Impact Assessment (HIA) and Habitats Regulations Assessment (HRA) to assist in identifying and assessment options for recycling and composting targets for various waste streams. TZW included a commitment to ensure that the subsequent Sector Plans are subject to the same process.

1.1.4 In line with this commitment, the Sector Plans are each subject to separate SA, HIA and HRA, which will subsequently emerge, to accompany the overarching Strategy. The SA approach will follow an integrated assessment methodology 'SA/SEA' to comply with the requirements of the SEA Directive as transposed into Welsh law by "The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004".

1.1.5 Parsons Brinckerhoff has several of the TZW Sector Plans, including the Waste Prevention Programme. This document presents the results of the SA/SEA, HIA and HRA process undertaken for the Waste Prevention Programme, which collectively considers the waste prevention measures covered in MSP1, Industrial & Commercial and Construction & Demolition Sector Plans.

### **1.2 The SA Process**

1.2.1 Welsh Government has committed to the consideration of the sustainability effects of the TZW Sector Plans and to consider ways in which they can be made more sustainable. Sustainability Appraisal is an appraisal of the economic, social and environmental sustainability of a plan. In this case, the Waste Prevention Programme is being considered. In line with the commitments set out by Welsh Government, the SA is being conducted in such a way as to be compliant with the requirements of the European Directive on the assessment of the effects of certain plans and programmes on the environment and the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 (hereafter referred to as the SEA (Wales) Regulations).



- 1.2.2 Under the SEA (Wales) Regulations 2004, SEA is mandatory for plans and programmes that are prepared for waste management and which set the framework for future development consent for projects which are listed in Annexes I and II of the Environmental Impact Assessment (EIA) Directive (85/337/EEC). The Waste Prevention Programme forms part of Welsh Government's statutory waste plan under Article 28 of the revised Waste Framework Directive (Article 28 part 3(c) of Directive 2008/98/EC). As such, the Waste Prevention Programme sets the framework for future waste management development consent. Consequently it is considered that there is a legal requirement to carry out SEA. In addition to this, Welsh Government has committed to consideration of the sustainability effects of the Waste Prevention Programme to consider ways in which it can be made more sustainable.
- 1.2.3 SA/SEA is an iterative process of gathering data and evidence, assessment of environmental effects, developing mitigation measures and making recommendations to refine plans or programmes in view of the predicted environmental effects. The effects predicted at this stage will remain at a strategic level and will not provide as much detail or certainty as for project level Environmental Impact Assessments (EIA).
- 1.2.4 The approach taken for the SA is based on that set out in the Practical Guide<sup>1</sup>. This breaks the SEA process down into five key stages (A-E), summarised in Table 1.1 below for the Waste Prevention Programme.

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<sup>1</sup> Office of the Deputy Prime Minister (ODPM) (September 2005), *A Practical Guide to Strategic Environmental Assessment Directive*. London: HMSO.

**Table 1.1: The Waste Prevention Programme SA Process**

<b>SA/SEA Stage</b>	<b>The Waste Prevention Programme SA</b>
<p><b>Stage A:</b> Setting the context and objectives, establishing the baseline and deciding the scope</p>	<p>A Scoping Report for all TZW Sector Plans was produced in September 2010. Although the WPP was not specifically included in the Scoping Report, the issues covered are still applicable.</p> <p>This Scoping report included the outcome of Policies, Plans and Programmes (PPPs) review undertaken for TZW SA and the MSP1 SA, and a review of other PPPs emerged after their preparation. It also included a summary of the baseline conditions described in the MSP1 SA. It set out the scope and intended approach for the remaining sectors plans and invited comment on this from the consultation bodies as set out in the SEA Regulations 2004.</p> <p>The report was issued for consultation to statutory consultees from 20 September 2010 to 25 October 2010.</p> <p>The sustainability issues and SA framework emerged from the TZW SA and the MSP1 were reviewed and updated accordingly in this report in accordance with the outcomes of the additional PPPs and baseline conditions review and consultation responses.</p> <p>A review of the HIA and HRA conducted for TZW and the MSP1 was also undertaken.</p>
<p><b>Stage B:</b> Developing and refining alternatives and assessing effects</p>	<p>As TZW already set up the strategic alternatives for managing waste in Wales, and for consistency with the approach undertaken in preceding Sector Plan SAs, the SA of the Waste Prevention Programme intends to consider and assess alternatives based on the Sector Plan actions.</p> <p>The SA process followed was established by previous SA for TZW.</p> <p>Prior to undertaking an assessment of the actions, a screening exercise was undertaken to assess the need of taking each action forward for a SA. This SA report presents the findings of the screening and what actions are taken forward for a SA under this or other linked Sector Plans. This SA report also includes a sustainability assessment of actions and the assessment of the alternatives presented for each action.</p> <p>An HRA screening assessment and an HIA of the Waste Prevention Plan were undertaken in parallel with the elaboration of this report and their findings have been incorporated in this report.</p>
<p><b>Stage C:</b> Preparing the Environmental Report</p>	<p>This report presents a full SA of the draft Waste Prevention Programme.</p> <p>The approach followed was established in MSP1 and has been adopted for subsequent Plans, including the Waste Prevention Programme to ensure consistency in throughout the SA process.</p>
<p><b>Stage D:</b> Consulting on the draft plan or programme and the Environmental Report</p>	<p>This SA report will be made available for public consultation along with the draft Waste Prevention Programme, to seek the views of stakeholders (including the public) on the approach undertaken and the conclusions in this report. Views will also be sought on how to improve the sustainability of actions presented in the draft Waste Prevention Programme.</p>
<p><b>Stage E:</b> Monitoring the significant effects of implementing the plan or programme on the environment</p>	<p>Monitoring will be undertaken following the adoption of the Waste Prevention Programme.</p>

### 1.3 Purpose of this report

1.3.1 This SA Report presents the results of the SA/SEA process of gathering data and evidence, assessment of environmental effects, developing mitigation measures and making recommendations to refine the draft Waste Prevention Programme in view of the predicted environmental and socio-economic effects. The effects predicted at this stage remain at a strategic level and will not provide as much detail or certainty as for project level EIA. Further environmental assessment will be required for projects developed as a result of the actions identified. This SA Report should be read in conjunction with the draft Waste Prevention Programme.

1.3.2 This report is based on the information provided by the following sources;

- Scoping Report for the TZW Sector Plans and its consultation responses;
- the SA/SEA, HIA and HRA conducted for TZW;
- the SA/SEA/HIA/HRA prepared for MSP1, C&D Sector Plan & I&C Sector Plan;
- Waste Prevention in Wales: *Evaluation of Current Activity & Outline Options for a Waste Prevention Programme* (Phase 2 Report: July 2012);
- 2<sup>nd</sup> Interim Report: Evaluation of a Range of Waste Prevention Initiatives for Industrial & Commercial Wastes Produced in Wales to Support the Waste Prevention Programme (Amec, October 2012); and
- Evaluation of a Range of Waste Prevention Initiatives for Construction & Demolition Waste Produced in Wales to Support the Waste Prevention Programme (Amec, October 2012).

### 1.4 Structure of this report

1.4.1 This report is structured as follows:

**Table 1.2: Structure of this SA Report**

Section	Title	Description
Non Technical Summary		Presents a Non-Technical Summary of the Report contents and findings.
Section 1	Introduction	Sets out the background, purpose, and structure of the SA Report.
Section 2	The Waste Prevention Programme	Sets out the background and contents to the Waste Prevention Programme.
Section 3	SA / SEA Methodology	Provides a summary of the SA/SEA process. Sets out the screening methodology, steps undertaken under the SA/SEA process for the Waste Prevention Programme SA.
Section 4	Context, Baseline & Limitations	Presents a summary of baseline data collected with

		sources and limitations.
Section 5	Key Sustainability Issues and the SA framework	Sets out a list of the sustainability objectives and key sustainability issues.
Section 6	Sustainability Appraisal Results	Presents the findings of the SA of the Programme actions. Provides the identification of strategic alternatives, by highlighting the sustainability implications of each, and by putting forward recommendations for improvement.
Section 7	Health Impact Assessment	Presents a summary of findings of the Waste Prevention Programme HIA and how they have been incorporated into this report.
Section 8	Habitats Regulations Assessment	Presents a summary of findings of the Waste Prevention Programme HRA and how they have been incorporated into this report.
Section 9	Implementation & Monitoring	Sets out monitoring measures of potential predicted effects of the Waste Prevention Programme implementation.
Section 10	Next Steps	Presents the methodology and work to be undertaken during the next phase of the SA/SEA.
Section 11	References	
Glossary		
Appendices		

## 1.5 Legislative Background

- 1.5.1 In line with the commitments made by Welsh Government in TZW, the remaining seven Sector Plans will be subject to SA incorporating the requirements of SEA as set out through the Directive 2001/42/EC and its transposing legislation.
- 1.5.2 Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (known as the SEA Directive) is implemented in Wales through the Environmental Assessment of Plans and Programmes Regulations (Welsh Statutory Instrument 2004 No. 1656, referred to hereafter as the 'SEA Regulations'). The SEA Regulations apply to any plan or programme which relates either solely to the whole or any part of Wales. The SEA described in this Scoping Report will therefore be undertaken under these Regulations.
- 1.5.3 The Directive's overall objective is to 'provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment'.

- 1.5.4 In accordance with the Directive, the SA/SEA is being undertaken to assess the effects of the emerging proposals for Sector Plans.

#### SA/SEA Guidance

- 1.5.5 The Government's 'Practical Guide to the SEA Directive' (Office of the Deputy Prime Minister (ODPM) et. al. 2005) provides advice on how to meet the requirements of the SEA Directive and implementing regulations in practice. The preparation of this Scoping Report has followed this guidance which is referred to as the 'Practical Guide (ODPM et. al. 2005)' throughout.

#### Health Impact Assessment

- 1.5.6 HIA is a process designed to identify and evaluate the potential health effects of a proposed programme and to facilitate opportunities to improve health and well-being.

- 1.5.7 HIA involves strict quantitative data collection and assessment processes, where the viability of a scheme or its compliance is assessed against a strict set of performance standards. HIAs are directed and governed by community led Steering Groups to provide opportunity for wider public engagement.

- 1.5.8 The HIA evidence base, including the policy analysis, has largely been derived from both Sustainability Appraisals for the Draft Wales Waste Strategy and the Municipal Sector Plan.

- 1.5.9 This allowed sufficient time and resource to maximise the benefits which result from the distinctive elements of an HIA over other Statutory assessments, notably;

- the examination of the effects upon wider aspects of health and wellbeing,
- interviews with consultees and key informants,
- opportunity for a broader base for evidence gathering, and
- recommendations arising from the HIA.

- 1.5.10 The HIA process followed and its key findings are described in Section 7 of this report.

#### Habitats Regulations Assessment

- 1.5.11 Under Article 6 (3) of the EU Habitats Directive (Directive 92/43/EEC) as transposed in the UK by The Conservation of Habitats and Species Regulations 2010 (Part 6), an 'Appropriate Assessment' needs to be undertaken in respect of any plan or project which:

- either alone or in combination with other plans or projects would be likely to have a significant effect on a site designated within the Natura 2000 Network; or
- is not directly connected with the management of the site for nature conservation e.g. a site conservation plan.

- 1.5.12 This includes Special Areas of Conservation (SAC) designated under the Habitats Directive for their habitats and/or species of European importance and Special Protection Areas (SPA) designated under the Birds Directive (Directive 79/409/EEC) for rare, vulnerable and regularly occurring migratory bird species and internationally important wetlands. It is a matter of law that candidate SACs (cSACs) are considered

in this process. In addition, it is Government policy that sites designated under the 1971 Ramsar Convention (Ramsar Sites) are considered.

- 1.5.13 A HRA Screening exercise has been undertaken to determine whether the Sector Plans could have a significant effect on sites within the Natura 2000 Network and Ramsar sites. Further information on this is presented in Section 8 below.

## **1.6 Compliance with the SEA Directive**

- 1.6.1 The SEA Directive, as transposed by the SEA (Wales) Regulations requires the preparation of an Environmental Report which covers the criteria set out under Regulation 12 and Schedule 2 of the Regulations. Section 9.3 of this SA report (Quality Assurance) and Table 9.2 summarises how these requirements have been incorporated within this SA.

- 1.6.2 Consultation is a key element of both plan development and the supporting assessments. Extensive public and stakeholder consultation has been undertaken at key stages throughout the development of the TZW document and its Sector Plans to date. This is outlined below.

## **1.7 Previous Consultation**

### Towards Zero Waste

- 1.7.2 TZW – the Overarching Waste Strategy Document was published in June 2010 following Public Consultation. It was accompanied by a Sustainability Appraisal Post-Adoption Statement and a consultation summary which set out the responses received during the consultation and Welsh Government's identified actions in response to the comments<sup>2</sup>.

- 1.7.3 The Post-Adoption Statement of the TZW SA (June 2010) recommended the following for consideration in the SAs of the Sector Plans:

- The incorporation of more specific indicators that can be developed at the Sector Plan level but also perhaps more usefully, at the regional and local level.
- Welsh Government will consider on a 'sustainability' basis and not solely taking into account environmental issues CCW request for 'consideration for funding for programmes and developments derived from the Waste Strategy (to) be made conditional on relevant satisfactorily addressed environmental assessments being undertaken'.

### Waste Sector Plan Consultation

- 1.7.4 The Waste Prevention Plan forms part of a suite of documents that have been published with the aim of achieving the objectives of TZW across a range of different sectors. The table below outlines the programme of consultation for the different sector plans including the Waste Prevention Programme.

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<sup>2</sup> [www.wales.gov.uk/waste](http://www.wales.gov.uk/waste) [www.cymru.gov.uk/gwastraff](http://www.cymru.gov.uk/gwastraff)

**Table 1.3: Waste Sector Plan Consultations**

Sector Plan	Consultation Start	Consultation End	Publication of Final Plan
Waste Prevention Plan	Spring 2013	Spring 2013	December 2013
Construction & Demolition (C&D)	November 2011	January 2012	November 2012
Collections, Infrastructure & Markets (CIM)	March 2011	May 2011	May 2012
Industrial & Commercial (I&C)	Spring / Summer 2012	TBC	TBC
Food, Manufacture, Service & Retail (FMSR)	March 2011	June 2011	Spring 2014
Municipal	June 2010	September 2010	March 2011
Public Sector	Summer 2013	TBC	TBC

#### Sustainability Appraisal Scoping Consultation (September 2010)

- 1.7.5 The SA Scoping report for all the other TZW Sector Plans was produced in September 2010 and was sent to statutory organisations for consultation. The consultation period ran from 20th September 2010 to 25th October 2010.
- 1.7.6 The scoping consultation sought views from statutory organisations including Countryside Council for Wales (CCW), Environment Agency Wales, Cadw, National Public Health Service, and the Welsh Health Impact Assessment Support Unit. Natural England, neighbouring Environment Agency Regions and English Heritage have also been consulted to ensure that any potential boundary issues are identified.
- 1.7.7 A summary of the scoping consultation responses and how they have been taken into account is provided in Appendix A.
- 1.7.8 The Waste Prevention Programme was not included in the scoping consultation exercise as the Waste Prevention Programme has been developed post consultation. However, it is considered that a separate consultation exercise for the Waste Prevention Programme is not required.
- 1.7.9 The key objectives and issues addressed in the Waste Prevention Programme are largely consistent with that of the other TZW Sector Plans, most notably, the I&C, C&D and MSP1 sector plans. In addition, the methodology used to complete the SA will be consistent with that used in the other TZW Sector Plans. Any changes to plans, policies and programmes that have occurred since 2010 will be incorporated into the baseline information used in the assessment. On this basis, it is considered that the scoping consultation exercise completed for the other TZW Sector Plans will be applicable to the Waste Prevention Programme.

## **1.8 Consultation on this Report**

- 1.8.1 This Report is being issued for public consultation alongside with the draft Waste Prevention Programme. We welcome all your comments on the content of this SA Report, in particular:

- Do you agree with the approach taken in this report and the conclusions reached? If not, please explain your reasons.
- Are there any other links between the draft Waste Prevention Programme actions and other Sector Plans actions?
- Are there any other recommendations that could be included against the actions to improve their sustainability going forward?

1.8.2 The consultation period for this Sustainability Appraisal Report, is open until June 20 2013

1.8.3 Please send any comments on the contents of this Report, or in response to the questions posed above by letter, fax or e-mail to:

<p>Waste Strategy Branch Department for Environment and Sustainable Development Welsh Government Cathays Park CF10 3NQ</p> <p>Email: <a href="mailto:wastestrategy@wales.gsi.gov.uk">wastestrategy@wales.gsi.gov.uk</a> Telephone: 0300 0603300 or 0845 010 3300</p>
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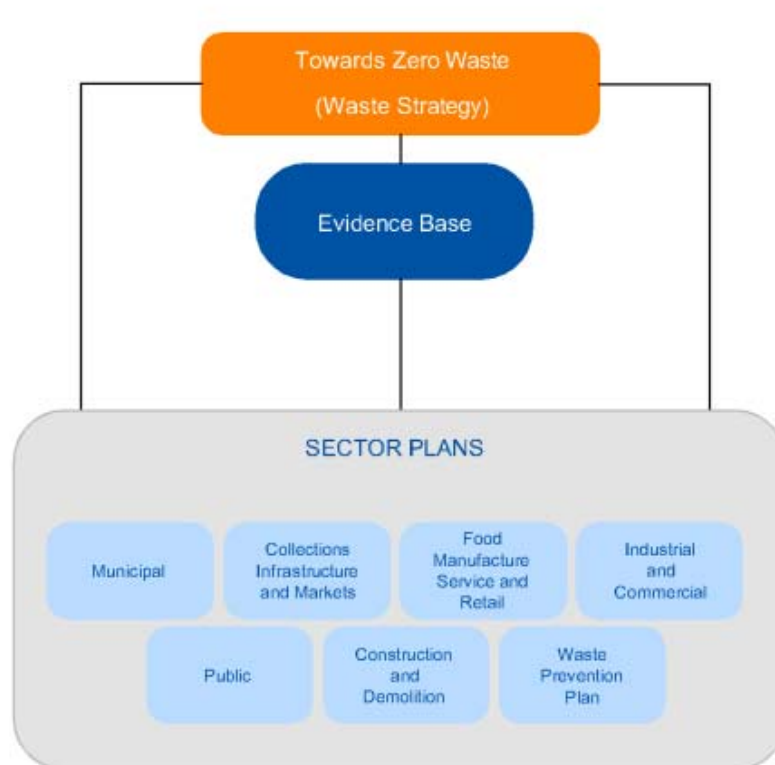
## 2 The Waste Prevention Programme

### 2.1 Context

2.1.1 Towards Zero Waste (TZW) (2010) augments the agenda set out in the former document 'Wise about Waste' (2002), integrating ambitious targets for waste reduction, recycling and ultimately elimination of landfill.

2.1.2 Mechanisms for delivery of TZW will be contained in the Sector Plans. The relationship between the TZW overarching strategy, evidence base and the Sector Plans is demonstrated graphically in Figure 2.1 below.

**Figure 2.1 – Welsh Government's Waste Management Strategy Hierarchy**



### 2.2 Aim & Scope of the Waste Prevention Programme

2.2.1 The Waste Prevention Programme needs to provide policy interventions which will result in Wales meeting the aims and objectives of the Revised Waste Framework Directive and Towards Zero Waste. This Programme covers waste prevention measures for households, industrial and commercial wastes along with construction and demolitions wastes. The key scope and principles of the Waste Prevention Programme are listed below;

- The programme covers the following waste streams: Household, Commercial, Industrial<sup>3</sup>, Construction and Demolition. Waste prevention targets are set for each of these streams.
- The programme of work will be targeted, concentrating on the materials that have the highest environmental impact (priority materials) and the sectors within which the opportunity for waste prevention are greatest.
- A strategy and delivery projects covering reuse, repair and preparation for reuse will be developed as an implementation project to this programme. Preparation for reuse is not a waste prevention activity, but there is considerable overlap in the delivery of direct reuse and preparation for reuse activities, and the environmental benefits are similar. They have therefore been considered together for the purpose of the implementation project.
- National level indicators to demonstrate 'decoupling' will be proposed in the consultation draft, with final indicators incorporated into the final Waste Prevention Programme, together with the high level waste prevention targets in Towards Zero Waste.
- The Waste Prevention Programme covers high level measures, but will be supported by implementation plans for each waste stream. Each project or work stream contained in the plans will be accompanied by suitable targets and indicators of progress. These will reflect the nature of the action, including its focus on specific waste materials or economic sectors.
- Sustainable Development outcomes have been considered during the evidence gathering and development stages of the programme. Sustainable Development outcomes will also be a key requirement in the development of separate implementation projects.
- Extended Producer Responsibility; Voluntary extended producer responsibility will be explored where appropriate in the first instance, particularly in discussion with retailers in Wales. It is not proposed to consider mandatory extended producer responsibility in the short term until the impact of voluntary measures has been explored.

## **2.3 Content**

- 2.3.1 The draft Waste Prevention Programme provides a record of the overarching proposed objectives for household waste (municipal), industrial & commercial waste along with construction & demolition waste. When finalised following consultation, it will form part of the suite of documents that together comprise the statutory waste management plan for Wales as required by UK and EU legislation.

## **2.4 Targets**

- 2.4.1 By 2025 (Towards Zero Waste), there will be a significant reduction in waste (27%), and Welsh Government will manage any waste that is produced in a way that makes the most of valuable resources. This means maximising recycling and minimising the amount of residual waste produced, and achieving as close to zero landfill as possible.

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<sup>3</sup> The Agriculture, Forestry and Fishery sectors are not included within the scope of this programme.

- 2.4.2 This is an intermediate step on the way to the 2050 target of achieving zero waste and ‘living within our environmental limits’<sup>4</sup>. This is needed because reducing the impact of waste in Wales to ‘One Planet’ levels will require big changes in the way that products and services are designed, and the actions that consumers and businesses take.
- 2.4.3 Waste arisings need to be reduced significantly across all sectors in order to achieve the One Planet goal for 2050. Welsh Government will move from a product orientated society, to a service orientated society where products are leased / rented with repair centres being the norm. Citizens will be empowered to ‘buy smarter’ and they will take responsibility for the consequences of their purchases, avoid producing waste, and reuse products as far as possible. Reuse of unwanted items will be encouraged. As far as possible, items that are discarded as waste are ‘prepared for reuse’ and are able to continue to be a resource and reused by others. Retailers will sell products that generate significantly less waste and the lifespan of products will be increased.
- 2.4.4 The waste targets for each of the sectors considered in the waste prevention Programme (as outlined in Towards Zero Waste) are outlined below;
- *Households*; reduction of 1.2% every year to 2050 based on 2006/7 baseline. This equates to 18,869 tonnes per annum of household waste;
  - *Industrial*: reduction of 1.4% every year to 2050 based on 2006/7 baseline. This equates to 26,546 tonnes per annum of industrial waste.
  - *Commercial*: reduction of 1.2% every year to 2050 based on 2006/7 baseline. This equates to 20,129 tonnes per annum of commercial waste.
  - *Construction & Demolition*: reduction of 1.4% every year to 2050 of waste treated off-site based on 2006/7 baseline. This equates to 58,600 tonnes per annum of construction and demolition waste.

## 2.5 Approach

- 2.5.1 The approach being followed is to take forward actions in respect of the following elements of the waste hierarchy:
- Waste prevention – to reinforce the important role of businesses in the commercial and industrial sectors to prevent and reduce their own waste arisings. Companies also need to reduce waste generated through the supply chain and ultimately put out for collection, thus helping to meet environmental outcomes, increasing opportunities for enhancing social wellbeing through waste reuse and reducing the costs of waste collection and management.
  - “Preparing for reuse” is a key element of the waste hierarchy. For wastes produced by businesses, “preparing for reuse” would encompass redundant, but working (or repairable), items of equipment that businesses put out for collection as waste, and which are prepared for reuse rather than being recycled or

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<sup>4</sup> Environmental Limits – ‘Our Vision of a Sustainable Wales is one where Wales: lives within its environmental limits, using only its fair share of the earth’s resources so that our ecological footprint is reduced to the global average availability of resources, and we are resilient to the impacts of climate change’ (Source: One Wales: One Planet: A new sustainable development scheme for Wales).

landfilled. This could include items such as carpets, office furniture, IT equipment, other electrical equipment, redundant stock, and protective clothing.

#### 2.5.2

The draft Waste Prevention Programme outlines the actions that will be further developed through further sector engagement to provide clear guidance and support to each on their roles and responsibilities required to ensure that Towards Zero Waste targets are met. It also includes overarching actions which cover one or more of the above. These have been classed as those which cover all aspects of business efficiency.

### **3 APPRAISAL METHODOLOGY**

3.1.1 In line with the commitments made by Welsh Government in TZW, the Waste Prevention Programme is subject to SA to assess the effects of the emerging plan and incorporate the requirements of the SEA Directive.

3.1.2 This report covers the SA/SEA steps following the consultation on the TZW Sector Plans Scoping Report.

#### **3.2 Development of the SA Framework**

3.2.1 SA framework objectives were developed to help structure the assessment of the potential environmental and sustainability effects of the TZW Sector Plans. The development process of the SA objectives is described below.

##### Baseline information

3.2.2 The identification of current baseline environmental, social and economic conditions is part of the SA/SEA process, which enables the identification of key sustainability issues of the draft Sector Plans to be appraised.

3.2.3 Chapter 5 and Annex B of TZW SA/SEA contained the baseline conditions considered for the MSP1 SA/SEA. The MSP1 SA/SEA amended those baseline conditions with further information that became available since publication of the TZW SA/SEA (Appendix B of MSP1 SA/SEA).

3.2.4 For consistency, baseline conditions described on the MSP1 SA/SEA were used and any information that became available since the publication of the MSP1 SA/SEA has been incorporated together with the responses received as a result of the consultation on the TZW Sector Plans Scoping report and subsequent Sector Plan SAs.

3.2.5 The headline findings of the baseline review are presented in Section 4 of this report.

##### Identification of sustainability issues and opportunities

3.2.6 The identification of key sustainability issues and opportunities was undertaken for the elaboration of the TZW SA and the MSP1 SA through a review of existing baseline information and other relevant policies, plans and programmes.

3.2.7 The key sustainability issues and opportunities that emerged from the TZW are identified in Chapter 6 of TZW SA. The MSP1 SEA (Chapter 2) reviewed these key sustainability issues and identified a number of additional issues that should be considered following the review of the baseline conditions and the PPP. Following that approach, the TZW Sector Plans Scoping report used those key sustainability issues identified in the SA/SEA of MSP1. This report also takes into account the scoping report consultation comments which lead to an updated review of the baseline conditions after the publication of MSP1, the C&D Sector Plan and the draft I&C Sector Plan.

3.2.8 The key sustainability issues identified from the TZW and MSP1 baseline review were set out under the following headings:

- Economy;

- Population, health and well being;
- Climatic factors;
- Material assets;
- Air quality;
- Biodiversity and geodiversity;
- Water and flood risk;
- Cultural Heritage;
- Landscape; and
- Soil.

3.2.9 There have been no changes to the key sustainability issues following the revision of updated baseline conditions and review of additional PPP undertaken to date. Further detail is presented in Section 4 below.

#### Sustainability objectives

3.2.10 The Waste Prevention Plan is being developed to implement the objectives of TZW. In order to ensure consistency the same basic framework will be used to appraise future emerging draft Sector Plans. This framework comprises nine headline sustainability appraisal objectives derived from the key sustainability issues, and supported by a number of sub-objectives.

3.2.11 The SA framework sub-objectives presented on the TZW Sector Plans Scoping report have been amended to reflect the consultation responses to the Sector Plan Scoping Report received in October 2010 and subsequent review of PPP. Further detail is presented in Section 4 below.

### **3.3 Sustainability Appraisal Approach**

3.3.1 The overall approach follows that established in the SA of TZW and MSP1. It comprises a process following several steps, each looking at different elements of the plan being developed. The steps are listed below and are outlined in more detail in the following sections of the report:

- Compatibility test of the Sector Plan Objectives against the SA Objectives;
- Screening of Actions to identify actions for inclusion in the SA;
- Assessment of Actions;
- Description of Cumulative Effects;
- Consideration of Reasonable Alternatives.

### **3.4 Compatibility test of the Sector Plan Objectives against the SA Objectives**

3.4.1 The aim of the compatibility assessment between the Sector Plan objectives and the SA objectives is to identify both potential synergies and inconsistencies between them.

3.4.2 A matrix was produced to assess whether each Sector Plan objective is broadly compatible or not compatible with SA objectives, or whether there was uncertainty

over compatibility or no relationship between the objectives (Section 5). In some cases, the compatibility will depend on the detail provided on the Sector Plan.

3.4.3 Where objectives are not compatible, recommendations are provided to improve the fit with the SA. This can include recommendations for changes to the objectives. As SA is an iterative process, Objectives could be revised throughout the development of the Sector Plan if new information comes to light.

### **3.5 Screening of Actions to identify actions for inclusion in the SA**

3.5.1 A screening of actions is the process to identify which actions proposed in each Sector Plan can be taken forward to the SA.

3.5.2 For consistency, this screening assessment use the reasons for omission of action SA used in the MSP1 SA actions screening. The actions considered omitted for assessment are those which fall into one of the following four categories:

- Administrative/Procedural: the action is related to administrative / procedural measures, such as joint working between Welsh Government and the UK Government.
- Existing Measures: the action provides a signpost to other legislation, strategy, targets and guidance rather than seeking to implement specific measures;
- Research: the action sets out measures that may be considered in the future once further research/investigation has been undertaken;

3.5.3 The screening criteria and methodology is described in detail in Section 6.

### **3.6 Assessment of the Actions**

3.6.1 This stage considers the social, environmental and economic effects of each action being considered in the process of elaboration of the Waste Prevention Programme if taken forward to SA. For each action, potential changes to the sustainability baseline are identified. The assessment will be undertaken largely qualitative in nature. Where this was the case, the prediction of effects was based on professional judgement and with reference to relevant legislation and guidance. These changes are described in terms of magnitude, geographical and temporal scope, duration, likelihood, frequency, reversibility, whether they are positive or negative. Any uncertainties or limitations are documented.

### **3.7 Description of cumulative effects**

3.7.1 Potential for secondary, cumulative and/or synergistic effects are also considered and described as part of the assessment of the actions.

3.7.2 Cumulative effects could potentially be generated by accumulation of effects on one single environmental, social or economic aspect generated by the implementation of different actions, and/or generated by each Sector Plan in conjunction with the implementation of other Sector Plans.

### **3.8 Consideration of Reasonable Alternatives**

3.8.1 The SEA Directive requires taking into account “reasonable alternatives”, outlining the reasons for selecting the alternatives dealt with, and describing how the assessment was undertaken.

3.8.2 Given the specific nature of the Sector Plans, the reasonable alternatives are developed in line with the approach set out by the Waste Framework Directive; i.e. Do Minimum/Business As Usual, Best Practice and Beyond Best Practice.

3.8.3 Each alternative is considered in terms of their ability to support the achievement of the SA Objectives, thereby enabling comparison of the alternative's performance.

### **3.9 Limitations and Assumptions**

3.9.1 This report is the result of an iterative process carried out in parallel to the preparation of the draft Waste Prevention Programme and in consultation with the Welsh Government.

3.9.2 In some cases, there were limitations during the SA process due to the level of detail available at a strategic level. Where appropriate, assumptions have been made clear within the report.

3.9.3 Baseline information, the review of PPP and the approach used for screening actions in the TZW Strategy and the subsequent Sector Plan SAs was used as a starting point for this assessment to ensure alignment of the Waste Prevention Programme sustainability objectives. Where applicable, and following the consultation responses, this information has been updated. Information contained in the Municipal, Industrial & Commercial and Construction & Demolition sector plans has been used to collectively assess the waste prevention measures in this document.



## **4 CONTEXT, BASELINE AND LIMITATIONS**

### **4.1 Review of Other Relevant Plans, Programmes**

4.1.1 A review of the other relevant policies, plans and programmes (PPP) was undertaken to inform the preparation of TZW and its SA/SEA (2009), the Scoping Report and subsequent Sector Plan SAs. These have been updated for the WPP.

4.1.2 Appendix B contains a full list of PPP reviewed and considered to identify sustainability objectives.

### **4.2 Baseline Information**

4.2.1 The identification of current baseline environmental, social and economic conditions is part of the SA/SEA process which enables the identification of key sustainability issues of the draft Sector Plans to be appraised.

4.2.2 Chapter 5 and Annex B of TZW SA/SEA contained the baseline conditions considered for the subsequent Sector Plans. These baseline conditions have been amended and updated in response to consultation on subsequent Sector Plans.

4.2.3 The TZW SA baseline review indicates that Wales faces deterioration in terms of issues including air quality, biodiversity and geodiversity, birds and sustainable water resource management. The headline findings of the baseline review are summarised by topic in Table 4.1 below.

4.2.4 The SEA Directive requires consideration of the current state of the following aspects of the environment: biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and interrelationship between all of them. Following those requirements, Table 4.1 presents relevant baseline conditions for each topic and the relationships between them.

**Table 4.1 - Baseline Information**

Topic	Baseline Conditions	Related topics
<p><b>Air Quality</b></p>	<p><u>Baseline Characteristics</u> Levels of air quality vary across the country, with South East Wales enduring the highest levels of air pollution. A primary factor in this deteriorating situation are emissions from transport, in particular, road transport, the continuing increase in use of this leading to worsening air quality levels across the Country.</p> <p>The UK Air Quality Strategy objectives have not been met, which has led to the declaration of 28 Air Quality management Areas (AQMA) in Wales (as listed in the 2010 statistic for 'Number of People Living in AQMA' (StatsWales, 2010))</p> <p>The main causes of pollution at urban sites are fine particles (PM10) and ozone.</p> <p>The main causes of air pollution at urban sites are fine particles (PM10) and ozone. There are 25,251 people living in AQMAs in Wales in 2011 (0.8 per cent of the total population of Wales)<sup>5</sup>.</p> <p><u>Future trends:</u> The increase of road traffic is of concern it counteracts the effect of tighter emission control measures The number of serious air pollution incidents has been declining in England and Wales since 2001. Local air pollutants are likely to increase due to expanding air travel from Cardiff International Airport.</p>	<p>Climate Factors</p> <p>Health</p> <p>Ecological Impacts of Air Pollution</p> <p>Resource Efficiency</p> <p>Electricity from Renewable Sources</p>
<p><b>Biodiversity &amp; Geodiversity</b></p>	<p><u>Baseline Characteristics</u> Approximately 10% of Wales' land cover is designated for nature conservation with this level increasing. The country enjoys a wealth of Special Areas of Conservation (SACs -92), Special Protection Areas (SPAs - 20), Ramsar sites (10) and over 1,000 Sites of Special Scientific Interest (SSSIs) either partially or entirely within Wales. Wales also contains one European Geopark, 351 Geological Conservation Review Sites and one UNESCO biosphere reserve.</p> <p>The status of priority habitats and species indicates, however, that just under half of all such habitats and just under one fifth of all species are declining. SSSIs are also anticipated to witness an increase in those designated as declining. The primary factor behind the status of this decline and that of biodiversity generally, are new developments and the land take which this can involve. In 2005, 29% of the area covered by SSSIs was in favourable condition, 18% was in unfavourable but recovering condition, with a further 52% being in 'unfavourable and declining' condition. In 2006, 12% of Wales is designated as SSSI. (Welsh Government, 2010)<sup>6</sup></p> <p>During the period 2000-2009: 54% of Natura 2000 species features were in favourable condition and 45% in unfavourable condition; 60% of Natura 2000 habitats features were in favourable condition, 23% in unfavourable condition and 16% recovering. (Welsh Government, 2010)</p> <p>In the period 2002 to 2005, the number of BAP priority species increased from 178 to 181 and the number of habitats increased from 37 to 39. Of the priority habitats with information available, the percentage of habitats classed as declining increased from 57 per cent in 2002 to 62 per cent in 2005. However, this has since fallen to 53 per cent in 2008 (Welsh Government 2010).</p> <p><u>Future trends:</u></p>	<p>Landscape</p> <p>Climate Factors</p> <p>Cultural Heritage and Historic Environment</p> <p>Ecological Impacts of Air Pollution</p> <p>Birds</p> <p>Soil</p> <p>River Quality</p> <p>Water and Flood Risk</p>

<sup>5</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=6003>

<sup>6</sup> Welsh Government, 2010. State of the Environment Report (Last updated, December 2010)

Topic	Baseline Conditions	Related topics
	<p>No clear data was available for Natura 2000 sites, although the 2007 JNCC report suggests that the results of the assessments for 'future prospects' are encouraging<sup>7</sup>.  The aggregate indexes for Broad Habitats published by JNCC<sup>8</sup> suggest that 9 of the 14 Broad habitats in the UK are on average showing a tendency to decline.  Based on data published by JNCC in 2010, of 174 BAP Priority Species records held (including birds), 92 showed an average decline whilst 13 reflected an increase<sup>9</sup>.</p>	
<b>Birds</b>	<p><u>Baseline Characteristics</u>  Wild bird populations are considered to be a good indicator of the broad state of wildlife and the countryside.</p> <p>The national picture indicates that there has been little substantive recovery in terms of those species suffering from long-term decline. Nationally, farmed habitats continue to see a decline in bird species. A more upbeat picture exists, however, for breeding birds where levels have remained stable. (Welsh Government, 2010)</p> <p><u>Future trends</u>  Farmed habitats continue to see a decline in bird species and this is expected to continue.  The overall population of breeding birds has been relatively stable over the short-term, this trend is expected to continue. (Welsh Government, 2010)</p>	<p>Landscape</p> <p>Climate Factors</p> <p>Biodiversity and Geodiversity</p> <p>Ecological Impacts of Air Pollution</p>
<b>Climate Factors</b>	<p><u>Baseline Characteristics</u>  The current primary sources of GHGs are energy industries, manufacturing industries and construction, and the transport sector. Estimated emissions of GHG in Wales increased from 47.3 million tonnes of CO2 equivalent in 2007 to 49.5 million tonnes CO2 equivalent in 2008. CO2 emission rates have also increased during the same period<sup>10</sup> and non-CO2 GHG (Methane, Nitrous oxide and Hydrofluorocarbons) have decreased.  The size of the net sink of greenhouse gases in Wales, has in overall decreased 44.1 kilotonnes of CO2 equivalent since 1990 (Welsh Government, 2010).</p> <p>The overall trend has been an estimated decrease of 15 per cent in emissions of the basket of greenhouse gases from Wales in 2007 compared to base year (1990 / 1995) emissions. (Since the publication of the sustainable development Indicators, figures for 2008 have been published and show that greenhouse gas emissions had decreased by 9.9 per cent in 2008 compared to the base year)<sup>11</sup>.</p> <p><u>Future trends:</u>  A decrease of 10 per cent in emissions of the basket of greenhouse gases from Wales in 2008 has been an estimated compared to base year emissions<sup>12</sup>. A net sink of greenhouse gases in Wales predictions suggest that this sink will continue to decline, and estimates of methane and nitrous oxide emissions due to</p>	<p>Ecological Footprint</p> <p>Air Quality</p> <p>Biodiversity and Geodiversity</p> <p>Resource Efficiency</p> <p>Water and Flood Risk</p> <p>Health</p> <p>Electricity from Renewable Sources</p>

<sup>7</sup> Joint Nature Conservation Committee, 2007. Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006.

<sup>8</sup> <http://www.jncc.gov.uk/page-3753>

<sup>9</sup> <http://www.jncc.gov.uk/default.aspx?page=3320>

<sup>10</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5758>

<sup>11</sup> The Sustainable Development Annual Report 2009-2010

<sup>12</sup> Welsh Assembly Government, 2010. State of the Environment Report (Last updated, December 2010)

Topic	Baseline Conditions	Related topics
	<p>Land Use, Land-Use Change and Forestry (LULUCF) activities remain small</p> <p>Climate change prediction effects in Wales indicate that there will be an increase in the amount of winter rainfall by around +33% and an increase of average summer temperatures of 2.7-4.1C. Sea levels are forecast to rise. Wales has improved resilience to the impacts of climate change and this trend is expected to continue.</p>	
<p><b>Cultural Heritage and Historic Environment</b></p>	<p><u>Baseline Characteristics</u> Wales has a rich and diverse cultural and historic heritage. Two world heritage sites, including the industrial landscape of Blaenafon, are internationally recognised for their outstanding universal value and another is currently under consideration by UNESCO. Nationally statutorily protected historic assets include just under 30,000 listed buildings and over 4,100 scheduled ancient monuments, representing the 1-2% of the overall building stock, and many representing the rich industrial and mining heritage of the country. Another key asset is that of historic parks and gardens, 386 of which are listed on the Cadw/CCW/ICOMOS UK register. 129 of these monuments are in state care<sup>13</sup>, and six designated historic wrecks. There are also 526 Conservation Areas designated for their local importance and 58 landscapes of historic interest<sup>14</sup>. Overall there has been an increase in the number of SM which are 'stable' or 'improved' from 85% in 1996 to 90% in 2003. In 2010, the local authority with the highest number of historic assets statutorily classed in Wales was Powys, and the lowest in each category was Blaenau Gwent. The percentage of the sample of listed buildings in Wales that were classed as 'at risk' or 'vulnerable' has fallen slightly in 2008.</p> <p><u>Future trends:</u> Overall there has been a rise in the number of SM which are 'stable' or 'improved', this trend is expected to continue. The percentage of SMs which have deteriorated has reduced and this trend is also expected to continue.</p>	<p>Landscape</p> <p>Biodiversity and Geodiversity</p> <p>Resource Efficiency</p> <p>Electricity from Renewable Sources</p>
<p><b>Landscape</b></p>	<p><u>Baseline Characteristics</u> During the period 2007-2010, there was an easy, equitable access to ample high quality green space (Welsh Government, 2010). Torfaen and Monmouthshire (76 per cent) have the highest percentage of its population living within a 300m walk of any accessible natural greenspace, whilst Carmarthenshire (24 per cent) has the lowest. In 2008, 26 per cent of adults living in Wales frequently used the outdoors for informal recreation. In comparison, 59 per cent of adults living in Wales used the outdoors infrequently and 14 per cent rarely or never used the outdoors for informal recreation<sup>15</sup>. Wales has a wealth of designated and non-designated landscapes, including three national parks covering 20% of Wales (Brecon Beacons, Snowdonia and Pembrokeshire Coast National Park) and five Areas of Outstanding Natural Beauty (AONB) (Wye Valley (spanning England and Wales), Anglesey, Clywdian Range, Gower and Llŷn). In addition, there is just under 500km of heritage coast, 3 National Trails, over 33,000km of public right of way paths and about 22%<sup>16</sup> of the Welsh countryside is accessible for public access on foot. There are also 58 landscapes<sup>17</sup> of outstanding/special historic interest in Wales on the Cadw/CCW/ICOMOS UK register.</p> <p><u>Future trends:</u> The distinctive character of the Welsh landscape has been and remains under threat and is declining. The quality and</p>	<p>Biodiversity and Geodiversity</p> <p>Cultural Heritage and Historic Environment</p> <p>River Quality</p> <p>Soil</p> <p>Waste</p> <p>Water and Flood Risk</p> <p>Population</p>

<sup>13</sup> [http://www.castlewales.com/cadw\\_rsk.html](http://www.castlewales.com/cadw_rsk.html)

<sup>14</sup> <http://www.cadw.wales.gov.uk/default.asp?id=108> and <http://www.cadw.wales.gov.uk/upload/resourcepool/Caring%20for%20Historic%20Landscapes4584.pdf>

<sup>15</sup> This is the first survey of participation in outdoor recreation among adults living in Wales (Welsh Government, 2010).

<sup>16</sup> <http://www.cw.gov.uk/about-cw/newsroom/latest-news/discovering-wales-natural-he.aspx>

<sup>17</sup> <http://www.cadw.wales.gov.uk/default.asp?id=108> and <http://www.cadw.wales.gov.uk/upload/resourcepool/Caring%20for%20Historic%20Landscapes4584.pdf>

Topic	Baseline Conditions	Related topics
	diversity of the natural and historic character of our landscape and seascape is maintained and enhanced (Welsh Government, 2010). Future changes to the farming subsidy regime have the potential to result in significant changes to the landscape.	Mobility Social Accessibility
<b>Ecological Footprint</b>	<u>Baseline Characteristics</u> Although there is a stable / no clear trend <sup>18</sup> , the ecological footprint of Wales increased from 4.2 global hectares per person in 1999 to 4.8(r) in 2004. However, it has since fallen to 4.4 in 2006 <sup>19</sup> . The ecological footprint of Wales was slightly lower than for the UK in 2006, but was more than double the average earthshare. The average 'earthshare' <sup>20</sup> was 1.8 global hectares per person and the ecological footprint of the world was 2.6 global hectares per person. Welsh local authorities in rural areas generally had a higher ecological footprint than authorities in urban or valley areas in 2006. Housing accounts for approximately 20% of Wales' ecological footprint <sup>21</sup> .  <u>Future trends:</u> Welsh Government's commitment to reduce the Ecological Footprint of Wales in One Wales One Planet should continue to decrease Wales' Ecological Footprint.	Air Quality Climate Factors Ecological Impacts of Air Pollution Resource Efficiency Water and Flood Risk Soil Housing
<b>Ecological Impacts of Air Pollution</b>	<u>Baseline Characteristics</u> A reduction in air pollution leads to increased life expectancy and ecological protection.  The national picture indicates that Wales has very high levels of sensitive habitats exceeding critical loads for acid deposition, currently standing at 80.4% in 2006-2008. This is exceeded by the percentage of such habitats where eutrophying pollutants exceeded critical loads, at 86.5% in the same time period. These levels are significantly higher than the UK as a whole (53% for acidification and 58% for eutrophication) and underlines the challenge faced in ensuring that these levels are reduced. There was a clear improvement <sup>22</sup> in the percentage of sensitive habitats in Wales exceeding critical loads for acid deposition in 2006-08 there has been a decrease of 2 percentage points. The percentage of sensitive habitats in Wales where eutrophying pollutants exceeded critical loads for nutrient nitrogen has been fairly stable since 2001-03.  <u>Future trends:</u> The percentages of sensitive habitats exceeding critical loads for acid deposition and sensitive habitats where eutrophying pollutants exceeded critical loads are expected to decrease.	Air Quality Biodiversity and Geodiversity Birds Climate Factors Soil Water and Flood Risk Health

<sup>18</sup> Stats Wales SoE (2010) <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5786>

<sup>19</sup> Stats Wales SoE (2010): <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5786>

<sup>20</sup> The 'earthshare' is the average amount of global resources available per person. To calculate 'earthshare', the total available bioproductive land and sea area of the planet is divided equally among the current global population. If everyone lived within their 'earthshare', we would be ecologically sustainable at a global level (Source: SoE Stats Wales, 2010).

<sup>21</sup> The Sustainable Development Annual Report 2009-2010

<sup>22</sup> SoE (2010) Stats Wales: <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=10410>

Topic	Baseline Conditions	Related topics
<b>Electricity from Renewable Sources</b>	<p><u>Baseline Characteristics</u> Electricity in Wales generated from renewable sources increased<sup>23</sup> from 3.5% in 2005 to 4.3% in 2008. In 2009, renewable energy resources provided 6% of the electricity generated in the UK<sup>24</sup>. The percentage of electricity generated in Wales from renewable sources has nearly doubled since 2002, reaching 4.3 per cent in 2008<sup>25</sup>.</p> <p><u>Future trends:</u> The promotion of renewable energy has been growing in Wales over recent years, and this trend is expected to continue.</p>	<p>Resource Efficiency</p> <p>Ecological Footprint</p> <p>Air Quality</p> <p>Climate factors</p> <p>Housing</p>
<b>Resource Efficiency</b>	<p><u>Baseline Characteristics</u> The ratio of carbon dioxide emissions to GVA in Wales has decreased by 12 per cent between 2005 and 2007<sup>26</sup>. The SoE<sup>27</sup> (2010) indicates that no data was available in 2008 regarding the total amount of aggregates used in Wales. It is estimated that 12.2 million tonnes of construction and demolition waste was produced in Wales in 2005-06. Just under half of this was aggregate waste, i.e. secondary aggregates.</p> <p>As at December 2010, there are 32 "live" cases of agricultural after use throughout Wales. Within the Green Dragon Standard there are five levels, with each step contributing towards achievement of the International and European environmental standards ISO 14001 and EMAS. In 2010, there were 119 Green Dragon<sup>28</sup> certified companies in Wales, with 12 of these companies achieving the highest rating (Level 5).</p> <p><u>Future trends:</u> Although there is a stable / no clear trend in the proportion of construction and demolition waste reused and recycled, it is expected to increase.</p>	<p>Economy / Employment</p> <p>Soil</p> <p>Health</p> <p>Waste</p>
<b>River Quality</b>	<p><u>Baseline Characteristics</u> Wales enjoys a high percentage of rivers with good chemical quality, with an increase in the percentage of such river length relative to previous years. The quality of Welsh groundwater, rivers, lakes and coastal waters is maintained and enhanced<sup>29</sup>. The percentage of river lengths in Wales of good or fair chemical quality, as the General Quality Assessment</p>	<p>Sustainable Water Management</p> <p>Waste</p>

<sup>23</sup> SoE (2010) Stats Wales: <http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=10390>

<sup>24</sup> Defra SD National Indicator 4 (2010): <http://www.defra.gov.uk/sustainable/government/progress/national/4.htm>

<sup>25</sup> The Sustainable Development Annual Report 2009-2010

<sup>26</sup> The Sustainable Development Annual Report 2009-2010

<sup>27</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5858>

<sup>28</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5853>

<sup>29</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5830#sustainable>

<sup>30</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5824>

<sup>31</sup> WFD Method statement for the classification of surface water bodies. Monitoring Strategy (April 2011) Environment Agency

Topic	Baseline Conditions	Related topics
	<p>(GQA), has been consistently higher than 98 per cent since 1994. The percentage of river lengths of good chemical quality has remained fairly stable over the same period, peaking at 95.4 per cent in 2007<sup>30</sup>. The Environment Agency has developed a method statement for the classification of surface water bodies. This is based on the Water Framework Directive (WFD) Environmental Flow Indicator for each surface water body<sup>31</sup>. The GQA shows that water quality has improved over the last 20 years, but, in Wales only 33% of water bodies currently achieve Good Status under the WFD. The GQA has been superseded by the WFD parameters.</p> <p>The percentage of river lengths in Wales of good biological quality has steadily increased since 2000, peaking at 88 per cent in 2008<sup>32</sup>.</p> <p>75 per cent of coastal waterbodies assessed were given a good or better ecological status in 2008. 35 per cent of transitional waterbodies, 29 per cent of rivers and canals and 20 per cent of lakes assessed were given a good or better ecological status in 2008.</p> <p><u>Future trends:</u> Due to the requirements of the WFD to all member states to aim to achieve Good Ecological Status by 2015, it is expected that river water quality (chemical and ecological) will improve.</p>	Water and Flood Risk
<b>Soil</b>	<p><u>Baseline Characteristics</u> Soil is managed to safeguard its ability to support plants and animals, store carbon and provide other important ecosystem services. It is estimated that Welsh soils contain 409 million tonnes of carbon<sup>33</sup>. Wales has a diverse range of soil groups, notably peat which comprises approximately 3-4% of national land coverage, predominantly acid blanket peat and including small areas of raised bog and fen peat scattered in lowland areas. Wales' greenhouse gas emissions are minimised, consistent with Wales contributing fully to meeting UK wide targets and in line with more specific Wales targets that are in development<sup>34</sup>.</p> <p>The total amount of contaminated land in Wales is unknown; up to 2011, a total of 490 hectares of contaminated land in Wales has been converted into beneficial use<sup>35</sup>.</p> <p><u>Future trends:</u> There are areas of peat bog (including raised bog and fen peat) throughout Wales. Although there is no clear trend on estimated net emissions of greenhouse gases from LULUCF in Wales, data from 2006-2008 indicate that they are likely to continue decreasing slightly<sup>36</sup>.</p>	Waste Resource Efficiency Air Quality Biodiversity and Geodiversity Cultural Heritage and Historic Environment Landscape
<b>Sustainable Water Management</b>	<p><u>Baseline Characteristics</u> The percentage of resource zones in Wales with target headroom deficits has varied since 2001-02, but improved to its lowest level of 12 per cent in 2008-09<sup>37</sup>. Current assessment of the water resource management across the country indicates that the percentage of water resource</p>	Water and Flood Risk River Quality

<sup>32</sup> Sustainable Development Annual Report (2009-2010)

<sup>33</sup> Sustainable Development Annual Report (2009-2010)

<sup>34</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=23027>

<sup>35</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5875>

<sup>36</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=23027>

<sup>37</sup> The Sustainable Development Annual Report 2009-2010

<sup>38</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5810>

<sup>39</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5787>

Topic	Baseline Conditions	Related topics
	<p>zones in England and Wales meeting target headroom requirements increased to 92.2% in 2008-2009, following a stable period since 2004-2005. The percentage of water resource zones in Wales meeting target headroom requirements in 2009-2010 was 92.3% compared to 72% in 2001-2002.</p> <p>The picture across England Wales indicates that there has been a significant improvement, with the objective being to continue reducing the number of such zones suffering a deficit in future years.</p> <p>Average per capita consumption in Wales has remained fairly stable In Wales, people in measured households used an average of 117 litres per person per day in 2009-10<sup>38</sup>.</p> <p>Overall, there has been a downward trend in water leakage in Wales, from 249 megalitres per day in 2001-02, to 196 megalitres per day in 2009-10<sup>39</sup>.</p> <p><u>Future trends:</u> The percentage of water resource zones that are recording a deficit, and level of leakage will continue to drop into the future.</p>	Climate Factors
Waste	<p><u>Baseline Characteristics</u> The picture across Wales as a whole indicates that the levels of waste generation from different sources have declined from across municipal, commercial and industrial sources. Levels of recycling have increased from across different sources reflecting the increasing priority being accorded to this.</p> <p>The volume of waste sent to landfill in 2009-2010 fell by 4% compared with 2008-09<sup>40</sup> and there has been a corresponding improvement in recycling performance with an estimated all-Wales average of 12.5%.</p> <p>In 2009-10, the percentage of municipal waste (excluding abandoned vehicles) reused, recycled or composted in Wales increased to slightly above 40 per cent for the first time<sup>41</sup>.</p> <p>Between 1998-99 and 2004-05, the total amount of municipal waste produced in Wales per year increased by almost 400 thousand tonnes. Since 2004-05, the total amount of municipal waste produced in Wales annually has been decreasing year on year<sup>42</sup>.</p> <p>5.6 per cent of the UK's packaging waste recovery and recycling took place in Wales in 2010. The total amount of packaging waste recovered in Wales increased from 332 kilotonnes in 2009 to 407 kilotonnes in 2010.</p> <p>.</p> <p>Stocks of Intermediate Level Waste (ILW) and Low Level Radioactive Waste (LLW) are expected to rise significantly in Wales. No High Level Waste (HLW) is managed in Wales<sup>43</sup>.</p> <p>The number of fly-tipping incidents in 2009-2010 in highways, council land, back alleyway and agricultural land have decreased compared to the incidents recorded in 2008-2009. However, fly-tipping incidents have increased in 2009-2010 at the following types of land: footpaths, private/residential areas, commercial/industrial, watercourse/bank and railways<sup>44</sup>.</p>	Soil Ecological Footprint Resource Efficiency Education

<sup>40</sup> The Sustainable Development Annual Report 2009-2010

<sup>41</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5807>

<sup>42</sup> The Sustainable Development Annual Report 2009-2010

<sup>43</sup> <http://www.nda.gov.uk/ukinventory/summaries/wales.cfm>

<sup>44</sup> <http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=6808>



Topic	Baseline Conditions	Related topics
	<p>Most common types of fly-tipped waste include household waste and construction and demolition waste, followed by other commercial waste and green waste<sup>45</sup>.</p> <p><u>Future trends:</u>  Recovery and Recycling rates achieved in the UK from 2006 to 2010 show an increasing trend<sup>46</sup> and this is expected to increase in Wales through the implementation of TZW and Recycling targets for Producer Responsibility Obligations (Packaging Waste) Regulations 2010.  Waste generation across Wales have decreased and levels of recycling have increased.  Recycling rates for C&amp;I waste will continue to increase.  Trends on commercial waste arisings are increasing and decreasing for industrial waste.</p>	
<b>Water and Flood Risk</b>	<p><u>Baseline Characteristics</u>  The issue of sustainable water resource management has been addressed previously. The issue of flood risk management is one which also requires careful consideration to ensure that the nature of facilities and siting of such infrastructure does not adversely impact upon areas prone to flooding or in flood catchment zones.<sup>47</sup></p> <p>In 2010, 67 per cent of coastal water-bodies assessed were given a 'good' or 'high' ecological status, and 39 per cent of transitional water-bodies, 31 per cent of rivers, 44 per cent of canals and 21 per cent of lakes assessed were given a 'good' or 'high' ecological status<sup>48</sup>. Overall, 66 per cent of ground-waters assessed were classed as 'good' status and 34 per cent were classed as 'poor'. Overall, approximately 65% of the water bodies assed in 2010 were given good chemical status in 2010.</p> <p>The percentage of bathing waters complying with the mandatory EC standards in Wales has consistently been over 97 per cent since 2002, reaching 100 per cent in 2002, 2004, 2005, 2009 and 2010.</p> <p>There has been significant progress on building in sustainability into flood and coastal erosion risk management in 2009-10<sup>49</sup> through the update of the Flood and Water Management Act (2010).</p> <p>There has been a clear improvement in the number of properties in Wales that have benefited from construction of flood alleviation schemes to reduce flood risk<sup>50</sup>.</p> <p>In Wales, the number of properties located in the floodplain has increased from 169 thousand in 2006 to 220 thousand in 2008, of which 62 per cent of properties located in the floodplain had a significant or moderate risk of flooding, compared with 59 per cent in 2006<sup>51</sup>.</p> <p>Trends in radioactive discharges to the marine environment from major sources in Wales show a clear improvement form 1996 to 2008<sup>52</sup>.</p> <p>The percentage of bathing waters complying with the mandatory EC standards in Wales has reached 100 per cent in 2002, 2004, 2005, 2009 and 2010<sup>53</sup>.</p>	Climate Factors River Quality Sustainable Water Management

<sup>45</sup> <http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=6809>

<sup>46</sup> Draft FMSR Sector Plan

<sup>47</sup> [http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5881&IF\\_Language=eng](http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5881&IF_Language=eng)

<sup>48</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5879>

<sup>49</sup> The Sustainable Development Annual Report 2009-2010

<sup>50</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=6002>

<sup>51</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5984>

<sup>52</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5826>

Topic	Baseline Conditions	Related topics
	<p><u>Future trends:</u> The number of serious water pollution incidents has been declining in Wales since 2001; this trend is expected to continue. The number of designated bathing waters in Wales is expected to increase.</p> <p>An increase of flooding (in both severity and frequency) is expected.</p>	
<b>Economy/ Economic Employment</b>	<p><u>Baseline Characteristics</u> The national picture on employment levels indicates that Wales suffers from one of the lowest levels of employment in the UK with significant disparities existing between areas within the country. North East Wales enjoys the highest rate of employment at 76%, specially in Flintshire and Wrexham; however, Blaenau Gwent registered the lowest employment rate (61.7%) in 2010. 98.2% of business in Wales have 0-50 employees. Employment rates for men of working age are higher than those for women; however women employment has increased 12% from 1984 to 2010.</p> <p><u>Future trends:</u> Employment rates in Wales have declined as a result of the economic downturn. However the economy appears to be diversified and the percentage of working age in Wales has generally increased since 1984.</p>	Benefit dependency and Workless Households  Child poverty  Pensioner poverty  Economic Output  Housing  Health  Population
<b>Benefit dependency and Workless Households</b>	<p><u>Baseline Characteristics</u> The percentage of working age people on key benefits decreased each year from 1995 to 2008. However, there has been an increase of 2 percentage points in 2009 to 17 per cent<sup>54</sup>. The total percentage of working age people claiming benefits declined from 2000 to 2008 and has raised 1.5% from 2008 to 2009 due to the economic downturn. The jobseekers allowance rate follows a similar trend. The lone parents and incapacity benefit rates have decreased from 2008 to 2009.</p> <p><u>Future trends:</u> The percentage of working age people on key benefits is expected to stabilise in line with the UK economic trends.</p>	Economy/ Economic Employment  Child poverty  Pensioner poverty  Population  Health
<b>Economic Output</b>	<p><u>Baseline Characteristics</u> The GVA for Wales in 2009 increased £4 billion since 2005. GVA per head in Wales increased from £13,723 in 2005 to £14,842 in 2009. GVA in Wales was indexed as 74.3 when compared to the UK as a whole in 2009. However the GVA has decreased compared to 2008 due to the economic turndown.</p> <p><u>Future trends:</u> The GVA and GVA per head in Wales are expected to be stable / increase slightly.</p>	Economy/ Economic Employment  Population

<sup>53</sup> <http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5878>

<sup>54</sup> The Sustainable Development Annual Report 2009-2010

Topic	Baseline Conditions	Related topics
<b>Social Accessibility</b>	<p><u>Baseline Characteristics</u> The percentage of households where the time taken to reach a GP surgery or grocer by foot or by public transport in 15 minutes or less has increased since 2005/06<sup>55</sup>.</p> <p><u>Future trends:</u> Social accessibility throughout Wales has increased for all five key services and this trend is expected to continue.</p>	<p>Mobility</p> <p>Active community participation</p> <p>Health</p> <p>Education</p>
<b>Active community participation</b>	<p><u>Baseline Characteristics</u> The changes between 2003 and 2009-10 in the percentage of people volunteering on a formal or informal basis at least once a month in the 12 months prior to being surveyed are not statistically significant<sup>56</sup>. The percentage of people involved in voluntary activities in Wales had increased from 2001 to 2009, and decreased slightly in 2010.</p> <p><u>Future trends:</u> There is a high level of active community participation (formal and informal volunteering) in Wales and it is expected to increase. In particular, children and young people from all backgrounds and abilities<sup>57</sup>.</p>	<p>Social Accessibility</p> <p>Mobility</p> <p>Economy/ Economic Employment</p> <p>Education</p>
<b>Child poverty</b>	<p><u>Baseline Characteristics</u> In Wales in the period 2005-06 to 2008-09, the percentage of children living in relatively low-income households (excluding housing costs) was 32% in Wales, compared to 29% in 2004-05 to 2006-07. Figures for the whole of the UK are not significantly different.</p> <p><u>Future trends:</u> Child poverty figures are expected to continue to be relatively stable.</p>	<p>Benefit dependency and Workless Households</p> <p>Economy/ Economic Employment</p> <p>Health</p>
<b>Crime</b>	<p><u>Baseline Characteristics</u> The total number of police recorded serious acquisitive crimes in Wales has fallen by over a third to 41,000 in 2008-09. The number of all household crimes in Wales per 10,000 households increased between 2004-05 and 2006-07, before falling to its lowest level in 2008-09<sup>58</sup>.</p> <p><u>Future trends:</u> Thefts to and from vehicles and British Crime Survey (BCS) vehicles related thefts are expected to decrease. Burglaries in dwellings are expected to continue increasing. BCS burglaries and robbery rates are expected to continue at the present rates</p>	<p>Economy/ Economic Employment</p> <p>Health</p> <p>Benefit dependency and Workless Households</p>
<b>Education</b>	<p><u>Baseline Characteristics</u> The percentage of all pupils at Key Stage 2 achieving the core subject indicator has increased from 61 per cent in 1999 to</p>	<p>Economy/ Economic Employment</p>

<sup>55</sup> The Sustainable Development Annual Report 2009-2010

<sup>56</sup> The Sustainable Development Annual Report 2009-2010

<sup>57</sup> The Sustainable Development Annual Report 2009-2010

<sup>58</sup> The Sustainable Development Annual Report 2009-2010

Topic	Baseline Conditions	Related topics
	<p>77 per cent in 2009. The percentage of young people in Wales aged 19-21 with at least a NQF level 2 qualification has been relatively stable since 2001. However, there has been an increase of 4 percentage points to nearly 78 per cent in 2008<sup>59</sup>. The percentage of pupils assessed in Welsh at the end of Key Stages 1, 2 and 3 have all increased since 2000<sup>60</sup>.</p> <p><u>Future trends:</u> The proportion of people aged 19-21 with an NQF level 2 of education is expected to be stable. The proportion of working age adults with an NQF level 4 of education is expected to rise.</p>	<p>Social Accessibility</p> <p>Active community participation</p>
<b>Health</b>	<p><u>Baseline Characteristics</u> The infant mortality rate per 1,000 has decreased from 5.3 in 2007 to 4.1 in 2008. There has been a sustained increase in life expectancy for both males and females since 1993-95<sup>61</sup>. Life expectancy, a key health indicator, does not vary significantly between Wales and England, and reflects the national and international trend of men having a lower life expectancy than females. Life expectancy has also not varied significantly over time, but has increased from 79.3 years for females and 74.2 years for males in 1996-98, to 81.4 for females and 77 years for males in 2006-08. The number of adults who reported key illnesses or health status has shown a stable trend from 2005 to 2009<sup>62</sup>.</p> <p><u>Future trends:</u> Infant mortality is expected to continue to decrease. Life expectancy is expected to continue increase.</p>	<p>Air Quality</p> <p>Economy/ Economic Employment</p> <p>Crime</p> <p>Education</p> <p>Child poverty</p> <p>Pensioner poverty</p>
<b>Housing</b>	<p><u>Baseline Characteristics</u> The Standard Assessment Procedure (SAP) for energy rating of dwellings is a calculation of a building's energy efficiency. SAP ratings are scored on a scale from 1 to 100 where 1 is the worst and 100 will indicate no heating/hot water cost<sup>63</sup>. The average SAP rating for dwellings in Wales was 50 in 2004. This was slightly below the average for England in 2003 (51.4). In 2004, only 16 per cent of dwellings in Wales were deemed to have good energy efficiency, with a SAP rating of 65 or higher. The number of unfit dwellings in Wales has decreased from 199,000 in 1986 to 52,100 in 2008. <u>Future trends:</u> The number of unfit dwellings is expected to decline.</p>	<p>Economy/ Economic Employment</p> <p>Social Accessibility</p> <p>Electricity from Renewable Sources</p>
<b>Mobility</b>	<p><u>Baseline Characteristics</u> The average number of walking or cycling trips made per person per year decreased between 1995 and 2008 while trips in private motor vehicles increased over the same time period. Trips made using public transport trips have seen a slight increase. The number of trips made per person per year by walking and cycling decreased from 1995/97 to 2002/03, and has since remained relatively unchanged. In terms of travelling to work, in 2010, 79 per cent of people travelled to work by car, van, minibus or works van, 13 per cent travelled to work by walking or cycling and 8 per cent travelled to work using other modes of transport<sup>64</sup>. <u>Future trends:</u> There has been a slight increase in the use of public transport and this is expected to increase.</p>	<p>Social Accessibility</p> <p>Economy/ Economic Employment</p>

<sup>59</sup> The Sustainable Development Annual Report 2009-2010

<sup>60</sup> The Sustainable Development Annual Report 2009-2010

<sup>61</sup> The Sustainable Development Annual Report 2009-2010

<sup>62</sup> <http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=6312>

<sup>63</sup> The Sustainable Development Annual Report 2009-2010

Topic	Baseline Conditions	Related topics
	The number of trips taken by foot or bicycle has dropped and the number of trips taken by car has increased; this trends are expected to continue.	
<b>Pensioner poverty</b>	<p><u>Baseline Characteristics</u>            There has been little change in the percentage of pensioners in relative low-income households before housing costs<sup>65</sup>. In the period 2002-03 to 2004-05, the percentage of pensioners living in relatively low-income households (including housing costs) was 20% in Wales and decreased to 18% in 2006-09. The number of individuals living in low income households has decreased 1% from 2005-06 to 2008-09.</p> <p><u>Future trends:</u>            The number of pensioners living in low income households has decreased and this is expected to continue decreasing.</p>	Benefit dependency and Workless Households  Economy/ Economic Employment  Health
<b>Population</b>	<p><u>Baseline Characteristics</u>            The population in Wales (just under 3 million in 2009) has increased over the last 25 years by approximately 220,000 people as a result of people moving into Wales mainly from other areas of the UK. 75% of the total population have been born in Wales and 20% in England. In addition, a considerable number of people visit Wales for holidays and business each year (fluctuating trends during 2000 to 2009). The south-east region has the highest population density in Wales, with Cardiff being the most densely populated Unitary Authority. Conversely the central region is the least densely populated. Migration patterns within Wales show that there is a net inflow of people to the Valleys region from south-east Wales, and a large outflow of people from the Valleys region to south-west Wales. Migration patterns between Wales and other UK regions reflect that most migrants leave Wales to go to the south-west of England, while most people migrating into Wales from England come from the north-west of England.</p> <p><u>Future trends:</u>            The population of Wales is gradually increasing, mostly due to net in-migration from other parts of the UK. Life expectancy is increasing and the population is ageing.</p>	Economy/ Economic Employment  Economic Output  Benefit dependency and Workless Households  Mobility  Housing  Health  Crime  Social Accessibility

<sup>64</sup> The Sustainable Development Annual Report 2009-2010

<sup>65</sup> The Sustainable Development Annual Report 2009-2010

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### **4.3 Limitations and Assumptions**

4.3.1 The baseline information collected has focused on setting general baseline conditions and, where possible, more specific existing and future baseline trends. The baseline information has been reviewed using two main sources of information, the Wales State of the Environment Report (2010), and the Wales Sustainable Development Indicators (2010). In some instances, the Sustainable Development indicators for Wales and associated statistics, do not provide enough data to establish current/future trends, this is due to newly adopted indicators, or lack of historical data.

4.3.2 It is recognised that the draft Waste Prevention Programme does not provide details on the potential location of facilities and resources proposed within the plan. Therefore, the PPP review, the identification of baseline and key sustainability issues is generic, and the identification of location-specific issues, including cross border and transboundary issues, has not been undertaken.

## 5 KEY SUSTAINABILITY ISSUES AND THE SA FRAMEWORK

### 5.1 Key Sustainability Issues

5.1.1 The identification of key sustainability issues and opportunities is based on the review of existing baseline information and other relevant policies, plans and programmes. It informs the development of the SA/SEA framework against which the emerging plan options will be assessed.

5.1.2 Annex I of the SEA Directive requires the incorporation of information on the *“likely significant effects on the environment, including on issues such as: biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage, including architectural and archaeological heritage; landscape and the inter-relationship between the issues referred to”*.

5.1.3 To ensure consistency of approach, the SA/SEA of the Sector Plans will continue to reference the sustainability issues and opportunities identified for TZW . In line with that approach, the SA/SEA of the Sector Plans will look at key sustainability issues within the topics based on the Annex 1 of the SEA Directive and will consider issues in relation to economy, flood risk and geodiversity.

5.1.4 The issues and opportunities are presented in Table 5.1 under the following headings:

- Economy;
- Population, health and well being;
- Climatic factors;
- Material assets;
- Air quality;
- Biodiversity and geodiversity;
- Water and flood risk;
- Cultural Heritage;
- Landscape; and
- Soil

**Table 5.1 – Key Sustainability Issues**

SA Topics	Key Sustainability Issues
<b>Economy</b>	<ul style="list-style-type: none"> <li>• Regarding specialist technologies, are there contractors or operators within Wales or the UK to supply this need? Will these be financially or economically viable/feasible?</li> <li>• Is there an appropriate labour force or will training and upskilling be required?</li> <li>• Can the strategy provide an impetus to the Environmental Technology Sector and can R&amp;D departments and can stakeholders such Universities be usefully engaged in this context?</li> <li>• To encourage the development of the Environmental Technology Sector and can R&amp;D departments and can stakeholders such as Universities be usefully engaged in this context?</li> <li>• To encourage the investment in R&amp;D and preferred alternative technologies by both public and private sector, and minimising the potential for investment in technologies which are not considered as offering a sustainable future for Wales' waste management.</li> <li>• To offer longer term security of contract to commercial operators and a return on their investment, thereby increasing the attractiveness of investment in Wales.</li> <li>• To bolster the social enterprise sector in line with wider strategic objectives, to maximise the contribution which this sector can make to sustainable waste management and associated socio-economic benefits of employment, training and engagement.</li> <li>• To offer new sources of employment and training, of particular benefit to areas with high socio-economic deprivation such as the Heads of the Valleys.</li> <li>• To use investment in new waste management infrastructure to act as a catalyst for regeneration in areas.</li> </ul>
<b>Population Health and Well Being</b>	<ul style="list-style-type: none"> <li>• How to engage with private, public and third sectors to maximise the benefits of partnership approach, assign clear responsibility and motivate engagement in this context from the public in particular, and generally enhance management in an integrated manner</li> <li>• How to create and sustain engagement in what will be a substantive cultural shift towards wide-scale domestic, commercial and industrial recycling; recognising the drivers which already exist in terms of commercial and industrial engagement in this context but also the substantive increase in recycling rates which is being envisaged, alongside that for Municipal Solid Waste.</li> <li>• How to balance drivers to encourage voluntary engagement and the potential scope for mandatory participation from households and potentially escalating regulatory requirements on commercial and industrial sources.</li> <li>• How to rise awareness and understanding of the importance of engaging in more sustainable waste management practice, this being pivotal to the efficacy of household recycling initiatives, particularly in the absence of regulation/mandatory participation.</li> <li>• How to rely the need for, and promotion of individual and</li> </ul>



SA Topics	Key Sustainability Issues
	<p>corporate sustainability for waste production and disposal</p> <ul style="list-style-type: none"> <li>• How to locate and develop waste management facilities to design-out crime.</li> <li>• How to prevent instances of fly-typing</li> <li>• How to promote a substantive increase in terms of participating households and levels of waste recycling.</li> <li>• How to increase the scope of waste materials to be recycled and the means/mechanisms through which this will be facilitated</li> <li>• To engender interest and engagement with the public in terms of personal responsibility and household/collective engagement in more sustainable activities such as recycling.</li> <li>• To contribute towards enhance accessibility of services and facilities particularly amongst those with reduces mobility and lack of car ownership.</li> <li>• To promote sustainable transportation of waste in terms of modes and services</li> <li>• How to raise awareness and understanding of actual impacts, as opposed to perceived impacts surrounding management options and wider emerging technologies.</li> <li>• To address upfront issues surrounding public perception of alternative waste technologies and engage in an informed debate as to future direction, at the level in which stakeholders can meaningful influence strategic policy and objectives.</li> <li>• To address and allay public perceptions surrounding the deployment of certain waste technologies.</li> <li>• Addressing key elements of health and well-being – how to maximise employment and access to services and facilities (amongst others) and the beneficial impact of this has upon health and well-being.</li> <li>• From a commercial and industrial perspective – how to facilitate increased engagement in alternative waste disposal without exposing employees to hazardous activities or potential adverse impacts to health and well-being.</li> <li>• To facilitate the deployment of safe, responsible, sustainable waste management from all sources: domestic, commercial industrial, etc.</li> <li>• To tackle issues surrounding the perception of waste management practices and technologies and establish greater understanding of what this entails.</li> </ul>
<p><b>Climatic Factors</b></p>	<ul style="list-style-type: none"> <li>• How to maximise the contribution which sustainable waste management can make to Wales' targets for all Greenhouse Gas (GHG) emission reduction and the creation of a carbon constrained economy.</li> <li>• How to facilitate the level of engagement required in the absence of a full/adequate understanding and sometimes sceptical public over climate change.</li> <li>• Whether regulation is required to enforce domestic/household participation and to escalate commercial/industrial sector participation and the acceptance of this.</li> <li>• To promote an integrated approach to preventing, abating and adapting to climatic change on new, existing and decommissioned waste sites, not just within Wales but beyond.</li> </ul>

SA Topics	Key Sustainability Issues
	<ul style="list-style-type: none"> <li>• To collectively reduce Wales' Carbon Footprint through strategic intervention across public and private sector operations.</li> <li>• To channel procurement and spend in the pursuit of carbon constrained policies, plans and projects.</li> <li>• To significantly contribute to Wales' ambition to become a carbon constrained, sustainable, economy by changing the behaviour of individuals and companies in terms of their attitudes to waste management.</li> <li>• To substantively reduce the Ecological Footprint (and constituent Carbon Footprint) at local, regional and national levels through addressing the issue of resource use and consumption.</li> </ul>
<b>Material Assets</b>	<ul style="list-style-type: none"> <li>• How to devise a realistic, workable strategy of sustainable waste management which will enable cost-effective, reliable, service delivery whilst also meeting Wales' broader sustainability, carbon and Ecological Footprint objectives.</li> <li>• How to reduce and prevent waste generation in line with the broader policy of sustainable development and reduce Ecological Footprint, and with the ultimate goal of 'zero waste'; how to promote public procurement policies in line with this.</li> <li>• How to facilitate the development of appropriate alternative/new waste management infrastructure within the prescribed timeframe and within resource constraints, developing facilities that address the varies priority waste materials and their sources.</li> <li>• How to address the varied and multiple sources of waste (including construction, demolition &amp; excavation, agricultural and quarry waste) and the handling or processing of such waste alongside that of municipal waste.</li> <li>• How to address the needs of local authorities in meeting challenging targets given their different geographical and socio-economic contexts.</li> <li>• How to select the location and scale of facilities that are accessible to communities in terms of proximity but also in terms of being socially acceptable and economically feasible.</li> <li>• To create greater understanding of the challenge of progressing sustainability within the context of resource and waste management.</li> <li>• To create a cultural shift with respect to attitudes towards generating and disposing of waste, recognising that commercial and industrial sources are already heavily regulated.</li> <li>• To enable the public sector and others to adapt to and develop the infrastructure necessary to facilitate a shift in waste generation and management at both the macro and the micro level.</li> <li>• To engender a sense of empowerment amongst members of the public in the collective response to addressing and abating potential climatic change and reducing Wales' Ecological Footprint more generally.</li> <li>• To prioritise the use of brownfield sites for the siting of new facilities.</li> <li>• To promote and contribute to national, regional and local targets with respect to brownfield land use and more sustainable use or</li> </ul>

SA Topics	Key Sustainability Issues
	<p>land resources generally.</p> <ul style="list-style-type: none"> <li>• To encourage commercial operations in line with this policy and ensure investment occurs in line with broader sustainability criteria generally, for example, advocacy of green procurement and supply chain management.</li> <li>• How to create a strategic framework which can progress on the basis of existing and proven technologies but also facilitate the incorporation of new technologies, as and when these appear (noting the challenge of investment by private sector operators and security of contract).</li> <li>• How to balance the immediate costs of investment in new technologies and infrastructure in the short term against longer-term sustainability gains such as low carbon energy provision.</li> </ul>
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• How to minimise impact to air arising from alternative forms of waste processing and management, recognising that relatively new technologies are emerging.</li> <li>• How to ensure that emissions to air are monitored and mitigated against with respect to transportation of materials to and from waste processing recycling plants and facilities.</li> </ul>
<b>Biodiversity and Geodiversity</b>	<ul style="list-style-type: none"> <li>• How to protect and enhance the biodiversity, flora and fauna of sites, designates and non-designated in stature.</li> <li>• Ensuring areas of biodiversity are adequately protected when considering the location and deployment of new waste facilities and services (including transportation of materials to and from such locations).</li> <li>• To protect the integrity of designated (including Natura 2000) and non-designated sites of ecological and biodiversity value.</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Seek to ensure that areas prone to flood risk in the siting of new facilities are avoided if at all possible, flood consequences assessment, where appropriate should be used, to inform the selection of sites.</li> <li>• How to ensure that new and emerging technologies being considered employ sustainable water consumption but also pose no threat to groundwater or surface water quality.</li> <li>• The potential exists, through recycling and eventually eliminating waste sent to landfill, to reduce the need for landfill sites and potential for water contamination arising from such activity. To reduce runoff and potential flood risk through sustainable strategic planning.</li> <li>• The potential exists to consider climate ‘proofing’ of existing sites in terms of flood hazard (marine and fluvial).</li> <li>• Seek to ensure that when siting new facilities the sustainability of both water supply and water quality are assessed.</li> </ul>
<b>Cultural Heritage</b>	<ul style="list-style-type: none"> <li>• How to protect and enhance the historic environment of Wales including designated historic assets while developing waste infrastructure.</li> <li>• To protect and enhance landscapes of cultural and historic importance in line with local, regional and national policy</li> </ul>
<b>Landscape</b>	<ul style="list-style-type: none"> <li>• How to protect and enhance the distinctive character and visual identity of communities, landscapes and townscapes across Wales whilst developing waste infrastructure.</li> <li>• Ensuring designated landscape areas are adequately protected</li> </ul>

SA Topics	Key Sustainability Issues
	<p>when considering the location and deployment of new waste facilities and services (including transportation of materials to and from such locations).</p> <ul style="list-style-type: none"> <li>To reduce the visual impact of landfill sites through the diversion of waste, escalating targets for waste reduction and eventual elimination of waste (zero waste) and to enhance the quality of recycling infrastructure generally.</li> </ul>
<b>Soil</b>	<ul style="list-style-type: none"> <li>How to ensure that soil resources and vulnerable soils are adequately protected in the deployment of new technologies and facilities and the refurbishment or redeployment of existing facilities; how to exploit the opportunities for soil resource protection which such technologies can bring.</li> <li>How to protect against the potential for soil pollution arising from the varied technologies which will be deployed</li> <li>How to address particular sources of waste such as agricultural or construction waste and the potential for soil pollution.</li> <li>To promote and contribute to national, regional and local targets with respect to brownfield land use and more sustainable use of land and soil resources generally.</li> <li>To address the range of environmental factors and maximise the sustainability of waste management choices to deliver sustainable soil policy.</li> <li>The potential exists, through reducing and eventually eliminating waste sent to landfill, to reduce the need for landfill sites and potential for soil contamination and/or emissions arising from such activity.</li> </ul>

## 5.2 The SA Framework and Sustainability Objectives

5.2.1 Whilst it is not a requirement of the SEA Directive and Regulations, it is accepted practice to establish a framework for undertaking SEA based on a set of objectives and assessment criteria. This framework is informed by the understanding of environmental issues and opportunities developed through the review of existing baseline information and the review of other relevant PPP.

5.2.2 The Waste Prevention Programme is being developed to implement the objectives of TZW. In order to ensure consistency, the same basic framework will be used to appraise the emerging draft Sector Plans. This framework comprises nine headline sustainability appraisal objectives supported by a number of sub-objectives. These objectives have been subject to consultation and amended accordingly.

5.2.3 The SA framework objectives and sub-objectives are listed in Table 5.2.

**Table 5.2: SA Framework Objectives and Sub-objectives for TZW Sector Plans**

Objective	Sub-objectives
<p><b>Waste Management</b> To increase sustainable waste management and reduce Wales' ecological footprint</p>	<ul style="list-style-type: none"> <li>• To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;</li> <li>• To increase infrastructural capacity and facilities for sustainable waste management;</li> <li>• To encourage behavioural change and participation amongst household, commercial and industrial operators; and</li> <li>• To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management.</li> </ul>
<p><b>Waste Infrastructure</b> To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this</p>	<ul style="list-style-type: none"> <li>• To promote markets for recyclates and recycled goods;</li> <li>• To encourage the development and deployment of alternative waste technologies and R&amp;D;</li> <li>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;</li> <li>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;</li> <li>• To support existing and develop new social enterprises focusing on waste as a community resource;</li> <li>• To promote equality and opportunity to access waste management facilities to prevent instances of fly-tipping;</li> <li>• To provide cost-effective and reliable sustainable waste management.</li> </ul>
<p><b>Landscape, biodiversity and cultural heritage</b> To protect and enhance urban and rural landscapes and resources, including ecological services and functions</p>	<ul style="list-style-type: none"> <li>• To protect designated landscapes: environmental, cultural and historic;</li> <li>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;</li> <li>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;</li> <li>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;</li> <li>• To promote the use of brownfield land use;</li> <li>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;</li> <li>• To remediate contaminated land.</li> </ul>
<p><b>Soil</b> To protect and enhance soil resources</p>	<ul style="list-style-type: none"> <li>• To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation;</li> <li>• To protect against contamination to soil;</li> <li>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils.</li> </ul>
<p><b>Water</b> To protect and promote the sustainable use of</p>	<ul style="list-style-type: none"> <li>• To promote sustainable flood risk management; and</li> <li>• To protect and enhance water quality and quantity in inland,</li> </ul>

Objective	Sub-objectives
water resources	coastal and maritime environments.
<p><b>Air quality, noise and odour</b></p> <p>To protect and enhance air quality in local, regional and national context</p>	<ul style="list-style-type: none"> <li>• To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;</li> <li>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;</li> <li>• To minimise adverse impacts to noise levels within communities;</li> <li>• To minimise odours arising from waste processing and its impact upon local communities.</li> </ul>
<p><b>Climate change</b></p> <p>To assist with Wales' capacity to adapt to and mitigate against climatic change</p>	<ul style="list-style-type: none"> <li>• To reduce GHG emissions;</li> <li>• To contribute to national, regional and local level carbon abatement strategy/objectives;</li> <li>• To promote the efficient use of onsite renewable energy and energy from waste where appropriate;</li> <li>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects.</li> </ul>
<p><b>Health</b></p> <p>To protect and enhance the health and well-being of communities</p>	<ul style="list-style-type: none"> <li>• To provide safe, secure, mechanisms for civic engagement;</li> <li>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;</li> <li>• To provide opportunities for those with health issues to gain suitable and meaningful employment;</li> <li>• To provide safe and healthy working environments for employees within the waste and recycling industries.</li> </ul>
<p><b>Civic engagement</b></p> <p>To increase civic engagement in sustainable waste practice</p>	<ul style="list-style-type: none"> <li>• To raise awareness and understanding of sustainable waste strategy, objectives and management;</li> <li>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor;</li> <li>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement;</li> <li>• To support and provide opportunities for volunteering in the waste and recycling industries;</li> <li>• To ensure all promotional literature is published in Welsh as well as English where appropriate;</li> <li>• To provide community facilities including visitor and educational centres.</li> </ul>

## 6 SUSTAINABILITY APPRAISAL RESULTS

### 6.1 Compatibility of SA Objectives and Draft Waste Prevention Programme Objectives

6.1.1 A compatibility test to examine the relationship between the draft Waste Prevention Plan objectives and the SA/SEA Objectives was carried out. The aim of this exercise is to highlight any conflicts or compatibilities between the Sector plan and the SA/SEA objectives to ensure that the aims of the two are not fundamentally different.

6.1.2 No conflicts were identified, but should they have been these could be identified through amendments to the Waste Prevention Programme Objectives. Where positive or uncertain relationships were identified, these have been used to inform the development of recommendations for the actions going forward. See Table 6.1 for more detail.

**Table 6.1: Waste Prevention Programme Compatibility Objectives**

Waste Prevention Programme Objectives	SA/SEA Objectives								
	Waste Management	Waste Infrastructure	Landscape, biodiversity & cultural heritage	Soil	Water Resources	Air Quality	Climate Change	Health	Civic engagement
Fulfils the requirement of the 2008 Revised Waste Framework Directive with regard to the production of Waste Prevention Programmes.	✓	✓	?	?	?	?	?	✓	?
Meets the waste prevention targets (including the priority materials for waste prevention) described in Towards Zero Waste	✓	✓	?	?	?	?	?	✓	✓
Takes full account for the principle that Sustainable Development is the central organising principle of the Welsh Government	✓	✓	✓	✓	✓	✓	✓	✓	✓

**KEY:**

✓	Compatible
✘	Not compatible
?	Compatibility depends on detail
0	No relationship/neutral compatibility

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## 6.2 Screening of Waste Prevention Programme Actions

6.2.1 The actions screening process aims to evaluate the need to appraise the sustainability of the Waste Prevention Programme actions. The methodology applied followed the steps listed below.

### 6.2.2 Identification of the Waste Prevention Programme actions

6.2.3 The Waste Prevention Programme actions have also been grouped into the following categories of actions:

- Waste Prevention (including reuse). These are measures taken before a substance, material or product has become waste, that reduce the quantities of waste, including through the re-use of products or the extension of lifespan of products the adverse impacts of generated waste on the environment and human health or the content of harmful substances in materials and products.
- Preparation for Reuse. "Preparing for reuse" means checking, cleaning or repairing recovery operations, by which products or components of products that have been collected as waste are prepared so that they can be reused without any other pre-processing. It is distinguished from reuse, which means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived. Reuse is therefore counted as waste prevention under the waste hierarchy. For example, a donation of an item to a charity is "reuse"; if the same item had been put out for collection as waste, and was then subsequently reused – this is known as "preparing for reuse".

### Setting up the screening reasons for SA action omission

6.2.4 For consistency, this screening assessment uses the reasons for omission of action used in previous Sector Plan screening. The actions considered omitted for assessment are those which can be described as one of the following:

- Administrative/Procedural: the action is related to administrative / procedural measures, such as joint working between Welsh Government and the UK Government.
- Existing Measures: the action provides a signpost to other legislation, strategy, targets and guidance rather than seeking to implement specific measures;
- Research: the action sets out measures that may be considered in the future once further research/investigation has been undertaken;

6.2.5 Where an action has been assessed as part of another sector or waste plan, it has been included to present a complete picture of relevant waste prevention measures.

6.2.6 This Section presents the results of the actions screening; the screening exercise classifies the Waste Prevention Programme actions into 2 different categories:

- Actions omitted for SA; and
- Actions taken forward for SA.



### Screening exercise and recommendations

6.2.7 The screening results were presented in a table format (Table 6.2) including the results of screening steps described above, how each action has been taken forward.

### Screening Results

6.2.8 Table 6.2 below presents the results of the Waste Prevention Programme Actions screening.

**Table 6.2: Results of the Waste Prevention Programme Actions Screening**

Action	Action Type	Screening Summary	Included in Waste Prevention Plan SA? Yes/No
Promotion and Implementation of eco design	Education & Guidance /	The Welsh Government Proposes to continue with current levels of funding for the Eco Design Centre. This principals contained within this measure are considered within measures contained in the Municipal, I&C Sector and C&D sectors plans.	Yes
Information, awareness & communications: Information campaigns	Education & Guidance /	This measure will be implemented by local authorities and supported by Waste Awareness Wales and is intended to encourage people and businesses to use materials and goods for their intended life. This measure was considered as part of MSP1.	Yes
Information, awareness & communications: toolkits	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. A number of toolkits already exist to address some wastes and the Welsh government will maximise their use before developing news tools.	No
Information, awareness & communications: Guidance Documents	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. The Waste and Resources Action Programme (WRAP) has reviewed existing documents. Welsh government will works with WRAP to regularly and update information to ensure that is current and fit for purpose.	No
Information, awareness & communications: Awards	Existing Measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. A number of award schemes currently promote best practice in waste prevention. Welsh government will review its support of award schemes and divert resources to measures with the greatest environmental benefit.	No
Information, awareness & communications: Knowledge Transfer	Administrative/ Procedural; Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. Welsh Government, through its economic renewal programme, has created sector panels for key industries to share knowledge and gain industry input and feedback.	No
Standards, Environmental Certification & Assessment	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. Welsh Government will not develop any new standards for waste prevention, but will encourage the uptake of product standards and environmental management systems.	No
Legislation & regulation (excluding SWMP)	Administrative/ Procedural; Existing measure	Voluntary measures for waste prevention will be monitored and evaluated, and if necessary the Welsh Government will scope options for introducing options in the medium term. Welsh Government will continue to implement European and UK legislation.	No
Legislation to mandate SWMP	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. Welsh Government has developed a waste measure, which will permit a levy to be charged on SWMP's. This measure was scoped out of the C&D SA.	No
Green procurement & supply chain initiatives	Research; Existing	This is an action which sets outs measures which may be considered in the future following more detailed	No

Action	Action Type	Screening Summary	Included in Waste Prevention Plan SA? Yes/No
	measure	investigation. The Welsh Government will encourage retailers, businesses and public sector organisations to engage their supply chain to achieve sustainable outcomes for Wales.	
Reuse & repair networks (including resource exchanges)	Education & Guidance	Welsh Government will assess three options for a reuse and repair network; current level of activity; meet the current demand and meet the maximum feasible / technical potential. This measure was considered in MSP1.	Yes
Products registers	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. Welsh Government, through its communications and support programmes will signpost to appropriate registers and directories to encourage the purchase of environmentally sustainable products.	No
Eco labelling	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. Welsh Government does not feel it appropriate to develop a new eco label scheme for Wales specifically dealing with waste and resources. However, it will monitor international schemes and advise on the most suitable for use by Welsh sectors.	No
Voluntary agreements	Research; Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. The Welsh Government will review the UK voluntary agreements to determine their impact in Wales and evaluate what further opportunities there may be to do more. This	No
Funding & financial measures: funded business support programmes	Education & Guidance	Funded business support programmes that stimulate direct contact with industry can have huge benefits, and can be a popular delivery mechanism. Welsh Government will investigate options for the provision of targeted support to businesses that have a high resource intensity or waste production impact. This measure has not been previously considered.	Yes
Funding & financial measures: grants, loans & challenge funds	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. A number of initiatives already exist at a European, UK and Wales level for which Welsh businesses are eligible. The Welsh Government will investigate the opportunities that exist for Welsh businesses to access these funds for waste prevention and resource efficiency initiatives, and will put steps in place to promote their uptake in Wales.	No
Funding & financial measures: innovation vouchers	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. As with the grants and loans, there are existing schemes which offer opportunities to fund resource efficiency and waste prevention action by organisations. Following the mapping of existing initiatives, if there are gaps the Welsh Government will investigate ways of supplementing them with targeted schemes.	No
Funding & financial measures: taxes, charges & levies	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure. There is no intention by Welsh Government to introduce any new charges in the short term, but if they were deemed necessary after assessing the impact of voluntary measures, they may be considered in the medium to longer term.	No
The promotion of research & development	Research	This is an action which sets out measures which may be considered in future following more detailed investigation. The Welsh Government will investigate the opportunities for addressing Wales' waste and resource efficiency issues through research and development, and to forge greater links between academics with expertise in this area with the businesses that have the greatest potential to reduce their waste and resource use impact.	No

Action	Action Type	Screening Summary	Included in Waste Prevention Plan SA? Yes/No
Training & education programmes	Existing measure	This action provides a signpost to an existing measure rather than seeking to implement specific a specific measure.	No
Support for the development of resource efficient business models	Education & Guidance	Welsh Government will review the evidence on consumer and business attitudes and expectation around the purchase and use of products, and will include the promotion of new business models in future behaviour change campaigns, and in its work on public and private sector procurement. Welsh Government will identify suitable innovations and will support manufacturers, suppliers and retailers based in Wales to develop business cases, implement changes, trial different approaches and monitor their impact. This measure has not been previously considered.	Yes

### 6.3 Summary of findings

6.3.1 The actions screening shows that 16 of the 21 Waste Prevention Programme actions are omitted for SA, The actions that were not screened out were taken forwarded for assessment. As presented in Table 6.2 above, the following five actions were assessed in this SA:

**Table 6.3 Actions Assessed in this SA**

Action	Description of the Actions
<b>Waste Prevention (including reuse)</b>	
Promotion and Implementation of eco design	<p>Eco-design is a strategic way of thinking about the design process, incorporating considerations around the sustainability impacts of product, processes and packaging across the entire life cycle of the product, from extraction of raw materials to disposal at end of life. Its broad ethos ensures that waste prevention and resource use is considered among a wide range of criteria and across the life cycle, thereby ensuring the best sustainability outcomes and avoiding negative unintended consequences.</p> <p>Eco-design can be used to achieve waste prevention by changing the way that products are designed to reduce the amount and type of material in products (including hazardousness); improve longevity; design for reuse, remanufacture, separation and recycling.</p> <p>The Welsh Government will promote and encourage the implementation of eco-design among Welsh manufacturing companies serving domestic and international markets. Effort will be targeted to address resource intensive products where there is evidence that it is possible to reduce the products' impact through changes to their design. These companies will benefit commercially from producing market-leading products and in future-proofing against increases in the cost, and reduction in the availability, of input materials.</p> <p>The offering of environmentally sustainable products to Welsh consumers and businesses is also a priority of the Welsh Government. Work with retailers will identify resource intensive products, investigate improvement opportunities, trial the implementation of actions and roll out information. Welsh retailers will be able to work with their suppliers to improve the environmental sustainability of their product ranges, and provide information to customers to enable them to make good purchasing choices.</p> <p>As eco-design is a broad concept, its implementation typically requires a range of supporting initiatives to encourage its uptake. The Welsh Government will explore a range of initiatives to embed the principles of eco-design, including:</p> <ul style="list-style-type: none"> <li>• Research and development</li> <li>• Information and awareness raising</li> <li>• Guidance documents</li> <li>• Toolkits</li> </ul>

Action	Description of the Actions
	<ul style="list-style-type: none"> <li>• Design standards</li> <li>• Product specifications</li> <li>• Green procurement</li> <li>• Financial support (such as grants, loans and prizes)</li> <li>• Funded business support</li> </ul>
<p>Information, awareness &amp; communications: Information campaigns</p>	<p>Communication and engagement plays a key role in the promotion of waste prevention, and is inherently linked to other measures such as eco-design or green procurement, where the awareness campaign plays a role in highlighting opportunities and increasing interest among the target audience.</p> <p>Communications and engagement can be undertaken in very different ways, and for different purposes; the Welsh Government has considered information campaigns, toolkits and interactive resources, guidance documents, awards and networks/knowledge transfer as options for providing information about waste prevention.</p> <p>The behaviour of individuals in the consumption, use and disposal of goods and services have significant impact on the environmental sustainability of our economy. A behaviour change campaign will be implemented which will focus on food and consumer products with a high environmental impact. Clear and precise messages will be developed which will provide consumers with the necessary information to understand the positive impact that simple changes in behaviour can have on the environment, and which also frequently save consumers money. The Welsh Government will work with local authorities, retailers and suppliers of consumer goods, and other stakeholders to deliver mutually reinforcing messages. Local delivery will support the strategic, national programme to achieve maximum impact.</p> <p>Basic information or awareness raising campaigns are one of the most widespread of measures for the prevention of waste from businesses. These campaigns often have low implementation costs, but it can be difficult to assess their relative impact by a formal evaluation. There is a heavy reliance on the audience to read, understand and act on the information provided; the recipient of information may need to access further information, guidance or support in order to make the necessary changes. The Welsh Government will work with local authorities, retailers and other organisations to develop and deliver this information.</p> <p>The value of information campaigns can be in supporting other measures. The campaign can raise general awareness of an issue, and signpost to sources of further support, tools and techniques to address the problem.</p> <p>The Welsh Government will not rely on basic information campaigns for businesses and construction companies as there is little evidence that waste prevention can be effected by information alone, but they will be used to raise awareness of specific issues, waste streams or behaviours. Messages will be developed carefully so that they have the greatest impact, and they will be delivered at the appropriate level. The Welsh Government will work with trade bodies and other organisations to develop and deliver this information; the messages will be tested on a sample of the target audience to make sure that they are fit for purpose.</p>
<p>Funding &amp; financial measures: funded business support programmes</p>	<p>Funded business support programmes that stimulate direct contact with industry can have huge benefits, and can be a popular delivery mechanism. However one to one business support needs considerable financial and staffing resources. It can also be difficult to convince a business to engage in a programme of support around a narrow subject area such as resource efficiency or waste prevention, as businesses don't immediately see the fit with their core activities.</p> <p>The Welsh Government will investigate options for the provision of targeted support to businesses that have a high resource intensity or waste production impact. It will also look at opportunity to highlight waste prevention and resource efficiency issues through the general business support that it provides.</p>
<p>Support for the development of resource efficient business models</p>	<p>Resource efficient business models can result significant environmental and economic benefits, and take a number of forms including service systems, hire and leasing, and incentivised return systems. New business models often require strong innovative leadership from within the business, as they are a departure from the traditional model of product manufacture and sale. The rise in the financial value of resources linked to an increase in awareness of sustainability issues has led to innovation among a limited number of businesses, but there is a need to stimulate greater innovation if the full sustainable development benefits are to be realised.</p>

Action	Description of the Actions
	<p>Products with high environmental impact, including clothing and other textiles, home and workplace furniture, chemicals, and electrical and electronic equipment, have potential in the context of resource efficient business models.</p> <p>The Welsh Government will identify suitable innovations and will support manufacturers, suppliers and retailers based in Wales to develop business cases, implement changes, trial different approaches and monitor their impact. There will also be a need for changes in consumer and business purchasing behaviour away from traditional to new resource efficient models. The Welsh Government will review the evidence on consumer and business attitudes and expectation around the purchase and use of products, and will include the promotion of new business models in future behaviour change campaigns, and in its work on public and private sector procurement.</p> <p>A similar suite of supporting initiatives are required to that for eco-design including research and development, guidance and tools, funded business support, financial support, and communication and behaviour change campaigns.</p>
<b>Preparing for Reuse</b>	
Reuse & repair networks (including resource exchanges)	<p>Reuse and repair networks are a highly effective mechanism for extending the total life of a material or product once its first owner decides not to retain it. There is potential for third sector involvement in a network, and the measure is generally viewed favourably by businesses and individuals as there are financial and social benefits to be gained. Repair activities have been in decline in recent years, due in part to the reduction in the cost of new consumer good, but many items that are discarded could be functional with some simple repairs; repair activities should therefore be considered as an integrated part of the network.</p> <p>Resource or materials exchanges are online or physical forums for the buying and selling of materials and products. There are some general exchanges such as ebay, and also sector specific exchanges such as Recipro for the construction industry. Free exchanges such as Freecycle also offer opportunities to extend the life of products through reuse.</p> <p>The Welsh Government is assessing three options for a reuse and repair network. A high level assessment of the environmental, social and financial costs and benefits will inform the final chosen option and supporting initiatives which the Welsh Government will take forward.</p> <p>The three options are:</p> <ol style="list-style-type: none"> <li>1. Continue current level of activity</li> <li>2. Meet the current market demand</li> <li>3. Meet the maximum feasible/technical potential (which requires work to develop the market beyond current maximum)</li> </ol>

## 6.4 Assessment of Actions

6.4.1 The following table presents a summary of the SA of each of the category groups considered. Further detail of the likely effects identified is given below. Measures have been identified to avoid or minimise possible negative effects to the objectives and enhance positive effects. Section 6.7 contains proposed mitigation and enhancement measures proposed for incorporation into the Waste Prevention Programme for each category of actions. Full details of the assessment are presented in Appendix C.



**Table 6.4 Waste Prevention Programme Summary of the Actions Category Assessment**

Action Name	Waste Management	Waste Infrastructure	Landscape, biodiversity & cultural heritage	Soil	Water Resources	Air Quality	Climate Change	Health	Civic engagement
<b>Waste Prevention (Including Reuse)</b>									
Education and Guidance	✓✓	✓✓/x	✓	✓	✓	✓	✓	✓	✓
<b>Preparation for Reuse</b>									
Education and Guidance	✓✓	✓✓/x	✓	✓	✓	✓	✓	✓	✓

**SCORING KEY:**

✓✓	Strong positive effect
✓	Positive effect
x	Negative effect
xx	Strong negative effect
✓/x, ✓✓/xx	Mixed positive and negative effect
?	Unknown effect
0	No relationship/neutral effect

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*1. Waste Prevention (including reuse)*

- 6.4.2 Assessed actions for Waste Prevention (Including Reuse): Education and Guidance:
- a) Promotion & Implementation of Eco Design
  - b) Funding & financial measures: funded business support programmes
  - c) Support for the development of resource efficient business models
  - d) Information, awareness & communications: Information campaigns
- 6.4.3 The actions are considered to have a strong positive effect in relation to waste management objective as they seek to reinforce the important role of businesses and households in preventing their own waste arisings by encouraging an increase in awareness about waste prevention through the provision of supporting guidance, advice and campaign and encouraging eco design. This is a fundamental step in assisting to meet the waste prevention targets and to give priority on more sustainable ways of consuming and producing.
- 6.4.4 These actions will ensure that households, manufacturers, construction and other businesses/industries influence the behaviours of their staff, visitors and customers to help ensure that they are fully engaged in less wasteful behaviour with customers assisted to help them making the right purchasing decisions to avoid waste.
- 6.4.5 This is expected to discourage the use of raw materials and materials with legacy waste where appropriate, generating behavioural change toward prevention and reuse within I&C sector and therefore reducing disposal rate and the level of waste requiring management.
- 6.4.6 Reduced demand for raw materials and increased reuse as a result of this action consequently will generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint (EF); for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas emissions associated with transportation and reprocessing of waste. The results of the EF analysis<sup>66</sup> demonstrate that food and putrescible waste has the largest impact of all materials (32% of the total EF). This is followed by paper and card (15% of the impact) and chemicals (12% of the impact). The EF of waste can be reduced more quickly then if the focus is on preventing arisings of these materials. For food waste, this is because it has a high EF. For paper and card, it is because large quantities arise in the waste stream.
- 6.4.7 The actions are also likely to have a strong positive effect on the waste infrastructure objective as they should contribute to the use of most appropriate waste minimisation and management techniques encouraging an improvement of companies' waste management strategy and green technology.
- 6.4.8 The actions may also encourage take back or exchange opportunities for unwanted and unused materials by manufactures, construction companies and other businesses.
- 6.4.9 As the I&C, C&D and municipal sectors are encouraged to reuse materials and prevent waste, there may be less recycling and residual waste which in turn may result in a reduction in the number of jobs within the sector, should staff affected not be redeployed. This could be a negative effect in relation to local employment opportunities. Potential mitigation measures could include training and upskilling in

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66 Ecological Footprint impact of the Welsh Waste Strategy Study Report Arup January 2009



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the use of new tools and staff to be redeployed. Some employment opportunities could potentially be supported by the actions in the longer term, particularly through the management of waste of construction companies and manufacturers.

- 6.4.10 Waste materials represent a cost to business, typically up to 4% of business turnover (Envirowise programme). Companies can be more profitable by adopting waste prevention and reduction. In addition to waste disposal and transport costs, there are further hidden costs such as the value of lost raw materials and the value-added cost from labour and energy. Minimising waste through these actions can therefore contribute to reduce the cost for businesses and promote a more cost-effective sustainable waste management.
- 6.4.11 The actions are also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, land take, soil, water, air quality/noise/odour, climate change and health due to the potential for the actions to prevent waste, optimise materials use and reduce reliance on landfill/residual treatment by improving the ways companies and households manage waste.
- 6.4.12 The actions could also contribute to an increased civic engagement in sustainable waste. Through these actions, companies in the I&C and C&D sectors could influence the behaviours of their staff, visitors, customers and general public to help ensure that they are fully engaged in less wasteful behaviour and help them making the right purchasing decisions to avoid waste.
- 6.4.13 It is anticipated the effects of the actions will be both short and longer term, offering, as an overall, benefits in the long term.

## 2. Preparation for Reuse

- 6.4.14 Assessed actions for Preparation for Reuse: Education and Guidance
- a) Repair and Reuse Networks (including resource exchanges)
- 6.4.15 The action is considered to have a strong positive effect in relation to waste management objective as it seeks to encourage 'preparation for reuse' of products (and/or components of products) that are to become waste by an increase in awareness and expanding reuse and repair networks to meet demand and encourage this behaviour. Specifically, this would encompass redundant but working (or repairable) items of equipment that businesses and households put out for collection as waste, and which are prepared for reuse rather than being recycled or landfilled. This could include office furniture, IT equipment, other electrical equipment, and redundant stock. The action also encourages the storage of these products in a manner that can facilitate this process (i.e. stored where no further damage can occur through weather or knocks). In the long term, this could contribute an increase of sustainable waste management.
- 6.4.16 Implementing this action should also promote an increase of awareness and understanding of sustainable management and resource efficiency activities. And in turn, it should generate behavioural change toward preparation for reuse and therefore reducing disposal waste and the level of waste requiring management.
- 6.4.17 Reduced demand for resource and increased reuse items as a result of this action will generate also a number of benefits with respect to the minimisation of Wales' Ecological Footprint (EF); for example reducing the loss' rate of finite resource (i.e. mineral extraction), greenhouse gas (GHG) emissions associated with transportation

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and reprocessing of waste and reduced demand for land required to accommodate waste management facilities.

- 6.4.18 In terms of waste infrastructure objective, the action could help increase the number of infrastructure and facilities for sustainable waste management by encouraging the development of waste collection systems which protect waste products or materials in a way that maximises their potential for preparation for reuse by businesses and households. This in turn may encourage the deployment of alternatives waste technologies and R&D.
- 6.4.19 As businesses are encouraged to reuse waste materials, there may be a requirement to manage less recycling products and residual waste which in turn may result in a reduction in the number of jobs within the sector, should staff affected not be redeployed. This would be a negative effect in relation to employment opportunities. Potential mitigation measures could include training and upskilling in the use of new tools and staff to be redeployed. Some employment opportunities could potentially be supported by the action in the longer term, particularly for the third sector to be involved in the waste management infrastructure,
- 6.4.20 By preparing waste to be reused, less waste is disposed to landfill and this can be cost benefits for companies. Despite the high cost of 'preparing for reuse' equipments and facilities, the costs of sending waste to landfill are increasing, in particular the rising Landfill Tax. In addition to waste disposal and transport costs, there are further hidden costs such as the value of lost raw materials and the value-added cost from labour and energy. Minimising waste and reducing the volume of disposal waste may therefore generate cost savings related to the management of such waste.
- 6.4.21 The action is also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, land take, soil, water, air quality/noise/odour, climate change and health due to the potential for the action to optimise materials use (i.e. by conserving limited resources and avoiding the extraction of resources for production of new materials such as paper, card, food, chemicals and plastics), and reduce reliance on landfill/residual treatment.
- 6.4.22 The action could also contribute to an increased civic engagement in reuse activities. Through this action, manufacturers, wholesalers and retailers could influence the behaviours of their staff, visitors, customers and general public to help ensure that they are fully engaged in less wasteful behaviour by encouraging their involvement in reuse activities.
- 6.4.23 It is anticipated the effects of the actions will be in the medium term, offering, as an overall, benefits in the long term.

#### Assumptions and Limitations

- 6.4.24 TZW sets out a strategic vision for the future management of waste until 2050. Therefore, the temporal scope or timeframe for the Waste Prevention Programme actions is the same and focuses on the period up to 2050.
- 6.4.25 The Waste Prevention Programme does not provide a detailed plan for the provision of new waste infrastructure and management facilities and therefore transboundary and spatial/local effects from specific proposals cannot be considered. Those effects will have to be assessed at a local level through the planning application process and mechanisms such as Environmental Impact Assessment (EIA), Buildings Research

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Establishment Environmental Assessment Method (BREEAM), etc, and assess their compliance with local and regional development plans.

### Conclusions

6.4.26 It is anticipated that the implementation of the Waste Prevention Programme will have an overall positive effect. No significant adverse effects have been identified in the assessment of the Waste Prevention Programme actions and as a result no mitigation measures are proposed for significant effects. However, a number of mitigation measures for lower magnitude effects have been identified. This aims to improve the performance of the Plan, and reduce uncertainties identified at this stage. Opportunities for enhancement of the sustainability of the plan have also been identified in a number of instances. These are discussed in more detail in Section 6.7 below.

## **6.5 Description of Cumulative Effects**

6.5.1 Cumulative effects are effects that result from incremental changes caused by the actions proposed in the Waste Prevention Programme together with other past, present or reasonably foreseeable actions. This includes:

- consideration of how the draft Waste Prevention Programme may act cumulatively with other plans, programmes or projects; and
- the combined effect of individual effects of the plan itself (e.g. noise, dust and visual) on a particular receptor.

### Cumulative effect of the draft Waste Prevention Programme with other plans, programmes and projects

6.5.2 The cumulative effects of the draft Waste Prevention Programme with other plans, programmes and projects are difficult to predict in detail at a strategic level, although it is possible to set out a number of likely general effects that may occur. The cumulative effects on the waste management and waste infrastructure SA objectives are likely to be significantly positive when considered together with the other six sector plans to support TZW and other waste plans in England and Wales, generally due to the commitments from national and local government to reduce the amount of waste being sent to landfill through initiatives such as those set out in the draft Waste Prevention Programme.

6.5.3 The cumulative effects of the draft Waste Prevention Programme with other plans, programmes and projects on the landscape, biodiversity and cultural heritage, soil, water, air quality/noise and odour and climate change SA objectives are likely to be positive at a strategic level due to the combined effects of the draft Waste Prevention Plan and other plans and programmes in optimising materials use (i.e. by conserving limited resources, such as aggregates, and avoiding the production of virgin materials, such as plastics), and in reducing reliance on landfill/residual treatment.

6.5.4 There is however some potential for local adverse cumulative effects depending on the physical developments which may lead from the actions set out in the draft Waste Prevention Programme with other developments on the ground, e.g. the cumulative effect of a waste infrastructure development with a housing or employment development may detract from the setting of a Listed Building or the landscape value of an Area of Outstanding Natural Beauty. The potential cumulative effects of such developments would be considered in more detail at local level through the planning application process.

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6.5.5 The cumulative effects of the draft Waste Prevention Programme with other plans, programmes and projects on the health SA objective is also difficult to predict. Although, at a strategic level, it is more likely that cumulative health effects will be positive.

Combined effect of individual effects of the draft Waste Prevention Programme

6.5.6 Significant positive cumulative effects are predicted for the waste management SA objective as the primary focus of the actions and initiatives within the draft Waste Prevention Programme is resource efficiency and waste minimisation. Implementing these actions in combination will increase awareness and encourage good practice in terms of sustainable waste management. In addition, it will generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint, for example by reducing GHG gas emissions associated with transportation and reprocessing of waste.

6.5.7 In overall terms, there are also likely to be positive cumulative effects on the landscape, biodiversity and cultural heritage, soil, water, air quality/noise and odour SA objectives as a result of the combined effects of the actions in optimising materials use (i.e. by conserving limited resources and avoiding the production of virgin materials) and by reducing reliance on landfill/residual treatment. This will generate indirect positive effects on all these objectives by leading to a reduction in the environmental effects associated with raw material extraction (i.e. loss of habitats, loss of primary resources, effects on water tables etc.), transport and reprocessing activities (i.e. emissions, road traffic accidents, energy use etc.) and land filling waste (i.e. leaching, soil contamination, emission, odours etc.). In addition, by encouraging waste prevention, the Waste Prevention Programme is likely to have a positive cumulative effects on the climate change SA objective due to the potential for the actions to reduce GHG emissions associated for example with transportation to landfill and reprocessing activities for raw materials and waste.

6.5.8 The cumulative effects of the Waste Prevention Programme on the health SA objective is likely to be positive since the promotion of waste prevention through the combination of actions will help to achieve higher levels of waste minimisation and a better management of waste within households and businesses. In turn it will provide a safer and healthier working environment (for example by reducing air and noise pollution, odours and hazardous materials) and will have a positive health effect on social capital and community cohesion and environment through the anticipated increase in minimisation/reuse rates, reduction in movement of HGV transporting waste and by avoiding the production of problematic or hazardous waste on site and at end of life as it will prevent exposure of members of the public to hazards as a result of the nature of the material (i.e. chemicals containing substances that are carcinogenic, mutagenic or toxic to reproduction).

6.5.9 Finally, the Waste Prevention Programme could also have a cumulative positive effect on the civic engagement SA objective as through these actions, I&C and C&D businesses could influence the behaviours of their staff, visitors, customers and general public to help ensure that they are fully engaged in waste prevention / reuse and help them make the right purchasing decisions to avoid waste.

Assumptions and Limitations

6.5.10 The Waste Prevention Plan does not provide a detailed plan for the provision or location of new waste infrastructure and management facilities and therefore project level transboundary and spatial/local cumulative effects from specific proposals

cannot be considered in this SA. These effects will have to be considered and assessed through the planning process and mechanisms such as EIA, and in line with local development plans. Reference should also be made to the Areas of Search and other studies commissioned through the Regional Waste Plans 1<sup>st</sup> Review in 2007<sup>67</sup>.

6.5.11 The Waste Prevention Plan contains actions linked to other TZW Sector Plans, namely the Industrial & Commercial Sector Plan, the Construction & Demolition Sector Plan and the Municipal Sector Plan. This will have a combined positive effect on the SA objectives. Potential effects of those actions have been or will be assessed in the SA reports for these Plans.

## 6.6 Consideration of Reasonable Alternatives

### Description of Alternatives

6.6.2 The SA process needs to take into account 'reasonable alternatives' to the development of the plan that have been considered.

6.6.3 Two alternative scenarios have been discussed with Welsh Government and considered as reasonable alternatives, a 'do minimum' and a 'do maximum' scenario. The alternatives considered in this assessment are described below.

6.6.4 Do Minimum Alternative (Option 1) 'Business as Usual'. This alternative is considered the 'no plan' alternative. It involves the consideration of existing measures already put in place (i.e. existing guidance, strategies, etc) without new actions being proposed. Therefore, minimum intervention or no new actions are put forward under this option. This alternative has been assessed as Option 1 (Do minimum) and is defined as being relatively easy to implement as it does not require additional costs or major technology and or cultural shifts.

6.6.5 Preferred Option (Option 2) Best Practice – The proposed Waste Prevention Programme. This option is considered a medium level intervention and assumes the adoption of best practice measures currently available and behaviour to ensure that the TZW requirements are met within timeframe.

6.6.6 Do Maximum Alternative (Option 3) Beyond Best Practice – This option is considered a high level intervention and provides the maximum potential of the plan assuming that resource efficiency strategy with the highest financial and resource investment is potentially available. It will guarantee exceeding the TZW targets within a shorter timeframe.

6.6.7 A list of alternatives for each category of actions is provided in Table 6.5 below.

**Table 6.5 Description of the alternatives to the Waste Prevention Programme**

Category of actions	Actions	Option 1: Minimum intervention. No guarantee of meeting TZW targets within timeframe.	Option 2: Medium level intervention. Forecast to meet TZW targets.	Option 3: high level intervention. Forecast to exceed TZW targets within a shorter timeframe.
<b>Waste Prevention (including reuse)</b>	Promotion & implementation of eco-design	Eco-Design Centre funded until the end of March 2013.	The Welsh Government proposes to continue with current levels of	Provide additional level of funding to Eco-Design Centre for more resources for

<sup>67</sup> WAG (2007) Regional Waste Plans (Strategic Framework)– First Review.

Category of actions	Actions	Option 1: Minimum intervention. No guarantee of meeting TZW targets within timeframe.	Option 2: Medium level intervention. Forecast to meet TZW targets.	Option 3: high level intervention. Forecast to exceed TZW targets within a shorter timeframe.
			funding for the Eco-Design Centre.	one to one working with Welsh businesses
	Information, Awareness & Communications : Information campaigns	Guidance available on the website. No updates or publicity provided to guide households / businesses.	Guidance on waste prevention will be provided by the Resource Efficiency Officers/REMAs and on the business Wales website.	Full programme of business efficiency supports for all businesses. Proactive information campaign for households. Awareness of specific issues, waste streams and behaviours to be provided.
	Funding & financial measures: funded business support programmes	No provision of staff / support programmes specific to waste prevention to be provided to businesses.	Provision of targeted support to businesses that have a high resource intensity of waste production impact.	Provision of support / resources to all businesses across the industrial, commercial and construction / demolition sectors.
	Support for the development of resource efficient business models	No action taken	Provision of support for manufacturers, suppliers, and retailers to develop business and implement changes. Promotion of new business models in future behaviour change campaigns.	Full support programme for the development of resource efficient business models focused on waste prevention across different sectors. Mandatory targets for resource efficiency.
<b>Preparation for Reuse</b>	Reuse & Repair networks (including resource exchanges)	No action taken	Meet current demand for reuse and repair networks through encouraging businesses to utilise existing forums / mechanisms for the buying / selling of materials and products	Meet the maximum potential by pro actively developing and promoting the exchange / repair market to further encourage waste prevention.

### Assessment of Alternatives

6.6.8 The sustainability assessment of the alternatives of the actions screened in was undertaken for each category of actions following the approach followed for the previous Sector Plans. Each alternative/option was assessed against each objective according to the scoring criteria set out below.

↑	Option likely to have a more positive effect on the objective than that assessed for the draft Waste Prevention Programme
↓	Option likely to have a less positive effect on the objective than that assessed for the draft Waste Prevention Programme
↑↓	Option likely to have a mixed positive and negative effect on the objective than that assessed for the draft Waste Prevention Programme

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?	Difference in effect on the objective likely to be dependent on detailed application of individual actions and projects
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- 6.6.9 The assessment of the alternatives/options is provided in Table 6.6 below.
- 6.6.10 Overall, Option 2 (best practice) has been assessed as having a more positive effect than Option 1 (do minimum alternative) and a slightly less positive effect than Option 3 (beyond best practice).
- 6.6.11 The results of the options assessment against the waste infrastructure and waste management objectives indicate that:
- Option 1 has been assessed as having a less positive effect than Option 2 which will guarantee meeting the TZW objectives within the timeframe; and
  - Option 3 would be a slightly more beneficial option compared to Option 2. However, Option 3 would be more expensive to implement and it provides an insight into the maximum potential of the plan to achieve even better targets in a shorter timeframe through the availability of highest financial and resource investment, mandatory targets and eco-design to priority and other sectors, mandatory targets for resource efficiency and waste reduction through permits, and employment of business advisors to provide one to one support.
- 6.6.12 The assessment also indicates that:
- No significant differences between Options 1 and 2 have been identified for meeting the landscape, biodiversity and cultural heritage , soil, water, air quality, noise and odour, climate change, health and civic engagement objectives; Option 3 is likely to have more positive effects on these objectives than the other two options. Actions such as highest financial and resource investment, mandatory targets and environmental standards and support of full programme of business efficiency will enhance the positive effects of the other two Options within a shorter timeframe.

**Table 6.6 – Assessment of the Draft Waste Prevention Programme**

Objective	Do Minimum Alternative	Preferred Option	Do Maximum Alternative	Commentary
	Option 1: Business as Usual (TWZ)	Option 2: Best Practice (draft Waste Prevention Plan)	Option 3: Beyond Best Practice	
<b>Waste Management</b>	↓	✓✓	↑	<p>Option 1 has been assessed as having a less positive effect than Option 2 in meeting the waste management objective for all categories of actions.</p> <p>Option 1 will maintain current levels of enforcement of the requirements of the Waste Framework Directive and the TWZ. Existing waste management arrangements will continue with no additional interventions or instruments such as guidance, market based incentives, partial funding, etc in order to raise awareness of sustainable waste reduction and encourage behavioural change among households and businesses within the I&amp;C and C&amp;D sectors.</p> <p>Option 3 will be a more beneficial option compared to Option 2 for all categories of actions as beyond best practice behavioural changes is considered. This Option will include fully fund voucher schemes and ecolabelling, additional funding to Eco-Design Centre, mandate eco-design to priority and other sectors, mandatory targets for resource efficiency and waste reduction through permits, employment of business advisors to provide one to one support, etc. These actions will support further waste minimisation and behavioural change, and thus increasing the capacity of Wales to manage waste and contributing further to reduce/minimise Wales' Ecological Footprint.</p>



Objective	Do Minimum Alternative	Preferred Option	Do Maximum Alternative	Commentary
	Option 1: Business as Usual (TWZ)	Option 2: Best Practice (draft Waste Prevention Plan)	Option 3: Beyond Best Practice	
				However, Option 3 will be more costly than Option 2.
<b>Waste Infrastructure</b>	↓	✓✓/x	↑	<p>Option 1 has been assessed as having a less positive effect than Option 2 in meeting the waste infrastructure objective for all categories of actions.</p> <p>Option 1 will maintain current levels of enforcement of the requirements of the Waste Framework Directive and the TWZ. Existing waste management arrangements will continue with no additional interventions or instruments for the provision of new infrastructure, best currently available technologies and consumption behaviours. The option mainly focus on encouraging companies to be proactive in accessing on line guidance that's already available.</p> <p>Option 3 will be a more beneficial option compared to Option 2 for all categories of actions since this scenario provides an insight into the maximum potential of the plan to achieve even better targets in a shorter timeframe through the availability of highest financial and resource investment, mandatory targets and environmental standards, full programme of business efficiency, etc. These stronger actions in turn encourage an increase in infrastructure and facilities for sustainable waste management and promote better training/retaining workforce. However, Option 3 will be more costly than Option 2.</p>

Objective	Do Minimum Alternative	Preferred Option	Do Maximum Alternative	Commentary
	Option 1: Business as Usual (TWZ)	Option 2: Best Practice (draft Waste Prevention Plan)	Option 3: Beyond Best Practice	
<b>Landscape, biodiversity and cultural heritage</b>	?	✓	↑	<p>The difference in effect on these Objectives for Option 1 and Option 2 is likely to be dependent on detailed application of individual actions and projects. The two options are likely to have, as an overall, positive effects on these objectives due to the potential for specific interventions and TZW targets requirements to optimise materials use (i.e. by conserving limited resources and avoiding the production of virgin materials, such as minerals), and reduce reliance on landfill/residual treatment. Some negative effects may be generated as other waste infrastructure developments will be needed, although it is anticipated that both options will have long term benefits to the environment. The difference is that Option 1 may require more time than Option 2 to achieve these benefits and meet TZW targets.</p> <p>Option 3 has been assessed as having a more positive outcome in terms of these objectives as the proposed actions would give to the plan the maximum potential to optimise materials use and reduce reliance on landfill/residual treatment, producing therefore a greater beneficial effect for the environment.</p>
<b>Soil</b>	?	✓	↑	
<b>Water</b>	?	✓	↑	
<b>Air quality, noise and odour</b>	?	✓	↑	

Objective	Do Minimum Alternative	Preferred Option	Do Maximum Alternative	Commentary
	Option 1: Business as Usual (TWZ)	Option 2: Best Practice (draft Waste Prevention Plan)	Option 3: Beyond Best Practice	
<b>Climate change</b>	?	✓	↑	<p>The difference in effect on these Objectives for Option 1 and Option 2 is likely to be dependent on detailed application of individual actions and projects. By encouraging waste prevention, reuse/recycling and landfill diversion, both options are likely to have, as a overall, positive effects due to the potential for the actions to reduce GHG emissions associated for example with transportation to landfill and reprocessing activities for raw materials and waste. This in turn will contribute to mitigate the effects of Climate Change. Although recycling waste may be less energy efficient than their primary materials, causing therefore an increase in GHG emissions, on balance, it is expected that as a whole the actions will have a positive effect in relation to GHG emissions. The difference is that Option 1 may require more time than Option 2 to achieve these benefits and meet TZW targets.</p> <p>Option 3 will be a more beneficial option compared to the other two for all categories of actions since actions such as provision of support for resource efficient business models, encouragement of eco design and mandatory targets for resource efficiency will enhance the positive effects of the other two Options within a shorter timeframe.</p>
<b>Health</b>	?	✓	↑	<p>The difference in effect on these Objectives for Option 1 and Option 2 is likely to be dependent on detailed application of individual actions and projects. By promoting waste prevention and reuse, the options will help to achieve higher levels of waste minimisation and a better</p>

Objective	Do Minimum Alternative	Preferred Option	Do Maximum Alternative	Commentary
	Option 1: Business as Usual (TWZ)	Option 2: Best Practice (draft Waste Prevention Plan)	Option 3: Beyond Best Practice	
				<p>management of waste across households and businesses. This in turn will provide a safer and healthier working environment (for example by reducing air and noise pollution, odours and hazardous materials). In addition, both options are expected to have a positive health effect on social capital and community cohesion and environment through the anticipated increase in reuse networks, the reduction in movement of HGV waste vehicles. The difference is that Option 1 may require more time than Option 2 to achieve these benefits and meet TZW targets.</p> <p>The same applies for Option 3, being the effect more positive than the other two options. Actions such as implementation of mandatory targets and environmental standards and market / business support initiatives will enhance the positive effects of the other two Options within a shorter timeframe.</p>
<b>Civic engagement</b>	?	✓	↑	<p>The difference in effect on these Objectives for Option 1 and Option 2 is likely to be dependent on detailed application of individual actions and projects. I&amp;C and C&amp;D businesses could influence the behaviours of their staff, visitors, customers and general public to help ensure that they are fully engaged in waste prevention and reuse thereby helping them make the right purchasing decisions to avoid waste. The difference is that Option 1 may require more time than Option 2 to achieve these benefits and meet TZW targets.</p>

Objective	Do Minimum Alternative	Preferred Option	Do Maximum Alternative	Commentary
	Option 1: Business as Usual (TWZ)	Option 2: Best Practice (draft Waste Prevention Plan)	Option 3: Beyond Best Practice	
				The same applies for Option 3, being the effect more positive than the other two options. Actions such as implementation of mandatory targets and environmental standards and market / business initiatives will enhance the positive effects of the other two Options within a shorter timeframe.

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### Assumptions and Limitations

- 6.6.13 TZW has already considered the overall strategic alternatives for managing waste in Wales and therefore this assessment has not re-assessed these alternatives. The approach to the consideration of alternatives is based on developing Waste Prevention Programme alternatives to meet the requirements of waste prevention and reuse set out in TZW.
- 6.6.14 TZW sets out a strategic vision for the future management of waste until 2050. The temporal scope or timeframe for the Waste Prevention Programme alternatives therefore is the same and focuses on the period up to 2050.
- 6.6.15 The technical scope for the assessment of the alternatives covers the environmental topics and objectives used in the assessment for the draft Waste Prevention Programme.

## **6.7 Mitigation and Enhancement Measures**

- 6.7.1 The purpose of the SEA process is to ensure a high degree of environmental protection. An important part of the process is to establish mitigation measures where a significant effect has been identified. The purpose of mitigation is to prevent, reduce or offset any identified negative effects of the Waste Prevention Programme. Some of the localised effects could be avoided or reduced at the design and construction stages of individual proposals/projects.
- 6.7.2 Mitigation measures may take the form of:
- Adding, deleting or refining measures;
  - The presentation of new alternatives;
  - Technical measures;
  - Requirements for further environmental studies of certain measures; and
  - Proposals for changing other plans or programmes.
- 6.7.3 Although no significant negative effects were identified during the assessment, mitigation measures for lower magnitude effects are presented here. This aims to improve the performance of the Plan, and reduce uncertainties identified at this stage. Enhancement measures have also been identified in a number of instances in order to maximise the benefits of positive effects.
- 6.7.4 The main negative effects identified and mitigation and enhancement measures proposed are as follows:

### Effect on local employment

As households and businesses are encouraged to improve resource efficiency, reuse materials and prevent waste, there may be less recycling and residual waste which in turn may result in a reduction in the number of jobs within the sector, should staff affected not be redeployed. This could be a negative effect in relation to local employment opportunities. Potential mitigation measure could include training and upskilling in the use of new tools and staff to be redeployed. Some employment opportunities could potentially be supported by the actions in the longer term,

particularly within the waste and resource management industry across a range of skill levels in Wales. This may include an increased number of high skilled, high value green jobs.

#### Storage of products to be reused

Promotion of storage of products to be prepared for reuse such as office furniture, IT equipment, other electrical equipment, redundant stock, and aggregates should be carried out in a manner that doesn't affect the natural and historic environment, water, soil, local air quality as well as the health and well-being of workers and local community (i.e. stored where no further accidental damage can occur).

#### Effects on air quality

There are likely to be long-term positive indirect effects in relation to air quality by encouraging a minimisation of emissions to air mainly due to a reduction in waste going to landfill, in use of transport (for example to re-processors of raw materials and to place of use) and in reprocessing processes. Potential mitigation to ensure a net improvement would include the consideration of air quality (including GHG) issues through EIA of qualifying interventions and/or measures for reducing the need to transport reuse items and waste to prepare to be reused.

#### Collection, preparation for reuse and recycling facilities

The collection and treatment infrastructure for preparation for reuse and recycling could generate negative effects on historic and natural environment, soil and water resources and increased flood risk. Potential mitigation measures could include the promotion of sustainable and safe/healthy location of new collection, preparation for reuse and recycling facilities.

6.7.5 Table 6.7 below summarises the mitigation and enhancement measures proposed.

**Table 6.7 Recommended Mitigation and Enhancement Measures**

<b>SA Topic</b>	<b>Recommended Mitigation and Enhancement Measures</b>	<b>Category of Actions to which this could be applied</b>
<b>Waste Management and Waste Infrastructure</b>	Including a commitment to retrain and upskill staff affected by reduction in residual waste e.g. in the use of new tools and alternative waste treatment technologies/processes such as the operation of recycling and reuse stations.	Waste Prevention (including Reuse) Preparation for Reuse
	Promoting the sustainable and safe/healthy location of new facilities. This includes avoiding areas at flood risk.	Preparation for Reuse
	Consideration of waste issues through EIA and other studies of qualifying I&C/C&D interventions/schemes.	Waste Prevention (including Reuse) Preparation for Reuse
<b>Landscape, Biodiversity and Cultural Heritage</b>	Consideration of landscape, biodiversity and cultural heritage issues through planning and design of qualifying interventions/schemes to protect and enhance urban and rural landscapes and resources.	Preparation for Reuse

	The storage of products to be prepared for reuse such as electrical equipment, construction materials and redundant stock should be carried out in a manner that doesn't affect the natural and historic environment (i.e. stored where no further accidental damage can occur).	Preparation for Reuse
<b>Soil</b>	Encourage the use of WRAP and EA best practices in handling stockpiles of aggregates to reduce the risk of soil pollution.	Waste Prevention (including Reuse) Preparation for Reuse
	The storage of products to be prepared for reuse such as electrical equipment, construction materials and redundant stock should be carried out in a manner that doesn't affect the soil resource (i.e. stored where no further accidental damage can occur).	Preparation for Reuse
<b>Water</b>	Encourage the use of WRAP and EA best practices in handling stockpiles of aggregates to reduce the risk of soil pollution.	Waste Prevention (including Reuse) Preparation for Reuse
	Consideration of flood risk in through planning and design of qualifying interventions/schemes	Preparation for Reuse
	The storage of products to be prepared for reuse such as electrical equipment, construction materials and redundant stock should be carried out in a manner that doesn't affect the water resource (i.e. stored where no further accidental damage can occur).	Preparation for Reuse
<b>Air Quality, Noise and Odour</b>	Ensuring that qualifying interventions/schemes minimise transport distance of reused products and waste to be reused from/to premises.	Waste Prevention (including Reuse) Preparation for Reuse
	The storage of products to be prepared for reuse such as electrical equipment, construction materials and redundant stock should be carried out in a manner that doesn't affect the local air quality (i.e. stored where no further accidental damage can occur).	Preparation for Reuse
<b>Climate Change</b>	Ensuring that qualifying interventions/schemes minimise transport distance of reused items from/to premises for preparation for reuse of products.	Waste Prevention (including Reuse) Preparation for Reuse
	Promoting energy efficiency and the use of renewable energy technologies in qualifying interventions/schemes.	Waste Prevention (including Reuse) Preparation for Reuse
<b>Health</b>	Establishment of health and safety standards for qualifying preparation for reuse and recycling interventions/schemes where appropriate. E.g. reduce the requirement for manual handling operations.	Preparation for Reuse



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	The storage of products to be prepared for reuse such as electrical equipment, construction materials and redundant stock should be carried out in a manner that doesn't affect the health and well-being of workers and local community (i.e. stored where no further accidental damage can occur).	Preparation for Reuse
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## **7 HEALTH IMPACT ASSESSMENT**

### **7.1 Purpose of a Health Impact Assessment**

7.1.1 The purpose of an HIA is to identify and assess both the beneficial and detrimental effects of a proposed Scheme, enhance the benefits whilst minimising its potential detrimental effects from its recommendations.

7.1.2 According to 'Health Impact Assessment: A Practical Guide'<sup>68</sup>, an HIA is defined as;

*"both a health protection and health promotion tool. In HIA, health is broadly defined to include assessment of both health hazards and health benefits of a proposal and the potential ways in which health and well-being can be both protected and promoted."*

7.1.3 A Health Impact Assessment:

- allows an opportunity for the application of different methods and approaches to gather health evidence.
- identifies how proposals could affect health and inequalities, where there could be a disproportionate effect on certain populations or areas.
- provides recommendations to inform the decision-making process by highlighting practical ways to enhance the positive impacts of a proposal, and to remove or minimise any health inequalities and negative impacts that might arise or exist.
- Needs to be overseen and held in scrutiny by a Steering Group comprised of either community representatives and/ or health professionals.

7.1.4 HIAs provide organisations with a framework to deliver their statutory obligations; they are a means of introducing health considerations into the planning process.

### **7.2 Procedure for Health Impact Assessment**

7.2.1 The procedure for undertaking Health Impact Assessment includes, but is not limited to:

- Screening selected policies or project tasks for assessment.
- Establishing a Steering Group and agreeing its Terms of Reference.
- Carrying out the Health Impact Assessment.
- Negotiating the favoured option(s) for achieving optimal health impact.
- Monitoring and evaluating processes and outcomes of the HIA and providing feedback to influence continuing review of the project.

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<sup>68</sup>Harris, P. Harris-Roxas, B., Harris, E., & Kemp, L. 'Health Impact Assessment: A Practical Guide.' Sydney: Centre Health Equity Training, Research and Evaluation (CHETRE) 2007

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### **7.3 Aims and Objectives of the Waste Prevention Programme HIA**

7.3.1 Core objectives of the HIA were derived from recommendations arising from the TZW HIA:

- To supplement and support a wider body of work including SA;
- define existing burdens of poor health, inequality and relative community sensitivity;
- define potential exposure scenarios and subsequent risk to community health (drawing from the Assembly and Environment Agency position papers); and
- identify and address perceived community risks.

7.3.2 The above were supplemented by more specific objectives including:

- Assess the potential health impacts, both positive and negative, of the draft Waste Prevention Programme;
- Generate recommendations which encourage positive health impacts and minimise negative ones;
- Assess the marginal, indirect, unverified and cumulative health inequalities associated with the draft Waste Prevention Programme;
- Maximise the health opportunities of the draft Waste Prevention Programme;
- Provide evidence-based recommendations geared to reduce and remove potential adverse impacts and enhance opportunities to improve health; and
- Scrutinise the consultation responses of the Municipal Sector plan and consolidate these together with the recommendations from the TZW strategy HIA.

### **7.4 Methodology**

7.4.1 The HIA for the Waste Prevention Plan was undertaken following the methodology and process set out in the TZW strategy designed to identify and evaluate the potential health effects of a proposed programme and to facilitate opportunities to improve health and well-being.

7.4.2 The Waste Prevention Plan HIA was undertaken as a participatory rapid HIA in four stages:

- Scoping
- Assessment
- Recommendations
- Management planning

7.4.3 The HIA baseline data was extracted from an evidence base which included the policy analysis from both SAs for TZW and MSP1.

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7.4.4 An HIA Steering Group identified from previous HIA consisted of the Welsh Health Impact Assessment Support Unit; the Environment Agency; the Welsh Assembly Government; and the University of Wales.

7.4.5 The HIA methodology had been previously endorsed by the HIA Steering Group during the TZW HIA, therefore no adaptation to the HIA approach was made. The approach taken within the Waste Sector HIA and its outputs were reviewed by the HIA steering group.

## **7.5 HIA Scope and Health Pathways**

7.5.1 The scope of the HIA had been previously defined during the preparation of both the TZW HIA and the Strategic HIA upon the 3 Regional Waste Plans. During both the TZW HIA and 3 Regional Waste Plans HIA scoping exercises were conducted as a high level desk top study of existing health information, gap analysis and literature review.

### Determinants of Health

7.5.2 The following specific 'Determinants of Health' were identified within the Wales 3 Regional Waste Plans Final Strategic HIA:

- Employment and Economy;
- Housing and accommodation;
- Transport and Connectivity;
- Crime and Safety;
- Access to Health and Social Care;
- Social Capital and Community Cohesion; and
- Environment.

7.5.3 The HIA undertaken upon the TZW Strategy identified that the following potential socio-economic health pathways were associated with Waste processes:

- initial cost and risk to employment and income during the transition to more responsible and sustainable waste-resource management practice;
- the waste and waste-resource sector employment; and
- potential community health outcomes.

7.5.4 Key health pathways selected by the TZW draft strategy included:

- the potential environmental effect from the proposed waste resource management options and associated activities upon health; and
- the potential effect of the proposed policies and actions upon socio-economic health pathways.

7.5.5 From the detailed review of the available health evidence base within the TZW draft strategy the following potential health pathways were identified:

### **Potential Health Pathways Associated with Waste**

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#### Potential Health Pathways Associated with Waste

- Reduction in resource use and waste generation at the industrial and retail level
- Reduction in transportation of waste in terms of both volume and management.
- Reduction in environmental impacts of treatment and disposal of waste.
- Benefits through improved household waste-resource management.
- Reducing the level of waste sent to landfill.
- Increase the reuse and recycling of resources diverting waste from disposal.
- Reduction in waste management emissions to air, water and ground.
- Need to consider household type and barriers that may limit composting, recycling or storing of recyclates or pose a risk to residents.
- Initial offsetting of environmental benefit from selection of new materials that pose a greater environmental cost at the start of its lifecycle in order to increase the value and quality of recycling at the end of its life cycle.

7.5.7

The following socio-economic health pathways were identified:

#### Socio-Economic Health Pathways Associated with Waste

- Improvement in industrial and retail resource efficiency throughout Wales;
- Reduction in the cost of transporting waste including the capital and maintenance cost of vehicles;
- Reduction in the cost of treating and disposing of waste and the remediation of future waste treatment sites to Local Authorities;
- Potential income and employment impact on the waste management sector as it is phased out;
- Potential income and employment benefit to the waste-resource management sector as it is phased in;
- Initial potential risk upon income and employment in order to comply with the Waste Strategy;
- Potential risk to the cost of domestic exports;
- Potential risk of increasing the importation of cheaper, non compliant foreign products.

#### General population

7.5.9

The Wales 3 Regional Waste Plans Final Strategic HIA considered that the whole population was to be affected to a greater or lesser degree by the Wales Waste Plans. There were likely to be positive health benefits related to better, more sustainable and more integrated waste management and treatment.

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### Specific Population Groups

7.5.10 Particular specific sub-groups were identified as vulnerable, these included those living near any potential new waste facilities that are likely to be built, closed or extended in response to the Wales Waste Plans. The following vulnerable groups were identified as particularly sensitive to health impacts arising from a waste plan:

- Children and young people;
- Older people;
- People on low income;
- Economically inactive/ Unemployed;
- People with a chronic ill-health condition;
- Traveller communities;
- People living in areas known to exhibit poor economic and/or health indicators;
- People living in isolated areas/ People with poor access to services and amenities;
- Women who are pregnant and women/couples trying to become pregnant; and
- Employees of new waste facilities.

## **7.6 Health Impact Assessment**

7.6.1 The purpose of the assessment step was to collate the available baseline data and to analyse the action plan from the perspective of its potential impacts upon the health determinants through the health pathways. To support this and ensure robust approach evidence was provided to support each impact statement.

7.6.2 Baseline data was extracted from the previous TZW HIA and applied to establish the demographic, social and health profiles for the population within the geographical scope of the HIA.

7.6.3 Sources of baseline information included:

- HIA of the Wales three Regional Waste Plans completed in March 2008 (PBA 2008);
- Wales Waste Strategy (TZW, 2009);
- SA of the TZW strategy;
- SA Scoping Report of the TZW Sector Plans; and
- Municipal Sector Plan Part 1 SA.

7.6.4 Evidence was sourced from a broad range of sources, principally previous health studies conducted upon hazard and employment associated with the waste industry. Evidence was largely confined to studies conducted within the UK, however a limited number of international studies have been utilised where it was considered both appropriate and transferable.

## Key Sustainability Issues

- 7.6.5 Work undertaken during the baseline review of the MSP1 (Table 4.2) identified key sustainability issues associated with 'Population Health and Well Being'.
- 7.6.6 In order to provide clarity and continuity between this and the previous HIA's conducted upon Wales Waste Strategies, the Waste Prevention Plan SA, links were made between the established overarching determinants for health, the sub-objectives of the Waste Prevention Plan SA (Table 5.2 of this report) and key sustainability issues (Table 5.1 of this report).

## Baseline Summary of Deprivation

- 7.6.7 In addition to the baseline review the following Table 7.1 is a summary of key deprivation issues in Wales.

**Table 7.1 Summary of Key Deprivation Issues in Wales**

<b>Unemployment</b>	<ul style="list-style-type: none"> <li>• In 2009 unemployment rate in Wales reached 7.5%</li> <li>• 200,000 (18.3%) working-age people had been receiving a key out-of-work benefit for two years or more.</li> <li>• Almost half of part-time workers in Wales earn less than £7 per hour</li> <li>• 80% of key out-of-work benefits are claimed due to ill-health in Wales</li> <li>• You are less likely to be in work if you are a lone parent, over 50, a member of a minority ethnic group or have a disability</li> <li>• In Wales £7.5800,000 is paid in working age benefits each working day</li> <li>• Two thirds of the long term claimants in Wales are aged 54 or less</li> <li>• A person who has received Incapacity Benefit for 6 months has a 50% chance of remaining on that benefit 4 years later</li> <li>• Once incapacitated for 12 months the average duration of stay is around 8 years, and you are more likely to retire or die than to go back to work</li> </ul>
<b>Crime</b>	<ul style="list-style-type: none"> <li>• Jobless offenders are more likely to re-offend than those who gain work, and are 13 times more likely to have been in care</li> <li>• An offender in Wales can have a heroin addiction needing £150 a day. requiring an annual income of £70,000</li> </ul>
<b>Education</b>	<ul style="list-style-type: none"> <li>• 15% of all adults of working age in Wales reported having no qualifications;</li> </ul>
<b>Health</b>	<ul style="list-style-type: none"> <li>• Unemployed men in Wales are twice as likely to develop mental illness as working men.</li> <li>• Debt, mental health and drug and alcohol abuse are reported as key barriers to work by employment advisers in Wales</li> <li>• 5% of all hospital admissions in Wales are related to alcohol use</li> <li>• 50% of the areas with limiting long-term illness are located in the north of the Valleys.</li> <li>• Rate of premature death is 50% higher for men than for Women in Wales.</li> </ul>
<b>Housing</b>	<ul style="list-style-type: none"> <li>• Number of homeless families in temporary accommodation in Wales is three times that of 10 years ago.</li> <li>• Overcrowding in accommodation is four times as prevalent in rented</li> </ul>

	accommodation as in owner-occupation
<b>Social Cohesion</b>	<ul style="list-style-type: none"> <li>• In Wales half of heads of households aged between 25 and 54 in social rented housing are not in paid work compared to one in twelve of those in owner-occupation.</li> <li>• Three-quarters of social renters do not participate in any organisation compared to half of owner-occupiers.</li> <li>• In 2008 32% of children in Wales were living in Poverty</li> <li>• In Wales half of all children eligible for free school meals attend a fifth of the schools</li> </ul>

### Assessment of the Waste Prevention Programme

7.6.8 Each waste action proposal was assessed against its potential health impact through applying the following criteria:

- Its potential health determinant;
- Its environmental health pathway;
- Its socio-economic health pathway;
- Associated vulnerable groups; and
- Underlying baseline conditions.

7.6.9 Evidence was extracted from previous Waste Plan HIAs as well as existing studies of health impacts from waste activities.

### Stakeholder Response

7.6.10 A review of stakeholder responses was undertaken as part of the HIA assessment, from previous Welsh Government Waste HIA's and Waste Sector plans consultation. These included consultation responses from the Regional Waste Strategy HIA, public engagement exercise for both the TZW Strategy and the MSP1, and the Scoping Report SA for the TZW Sector Plans consultation responses. Where applicable, responses which cited health impacts were included within the assessment table and mitigations.

### Recommendations

7.6.11 The objective of this phase of the work was to identify appropriate measures to minimise the negative impacts of the waste sector plan and to maximize the opportunities for beneficial impacts.

7.6.12 The HIA was undertaken in parallel with the SA allowing feedback of the outputs the Appraisal process at the earliest stage. Close collaboration between PB's HIA and SA practitioners avoided duplication of efforts in the development of mitigation strategies.



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7.7 Results of the HIA are presented in Appendix D and link the health impact, subsequent recommendation/ mitigation and associated evidence to each particular Waste Prevention Programme action.

**7.8 Health Impacts Assessment Summary**

7.9 The Waste Prevention Programme has proposed measures which seek to provide incentives and prepare households and businesses to address issues related to waste prevention and preparation for reuse. All positive health impacts resulting from assessment of the Waste Prevention Programme were confined to those actions which involved a proactive measure, for example mandatory measures for companies to implement Environmental Management Systems and actions to set targets for resource efficiency.

7.10 Actions within the Waste Prevention Programme which were either passive or non-specific were assessed as being either optional or indistinct and therefore their outcome could not be confirmed. This includes actions suggesting companies to be proactive in accessing online guidance or actions proposing WG to investigate further the feasibility of incentivising resource efficiency. Such passive or non-specific actions were therefore assessed as having no health impact.

7.11 A strong association exists between long-term unemployment and poor health. Therefore where the Waste Prevention Programme generates new employment opportunities, it was assessed as providing a potential positive health impact on economy and employment.

7.12 Actions within the Waste Prevention Programme which result in a reduction in waste arisings (for example, mandatory resource efficiency requirements to be included in Facilities Management contracts in Wales or mandating waste reduction through permits) are likely to decrease emissions from waste processing and disposal. This in turn would provide potentially direct positive health benefits to both social capital and the environment.

7.13 The actions resulting in a reduction in waste arisings were also assessed as providing direct positive health impacts upon the economy and employment, through introducing potential resource and financial savings within the Waste Prevention Programme.

7.14 Though assessed as providing positive health impacts to economy and employment as well as environment, failure of small businesses to achieve the required waste reduction standards could result in either a loss of positive health impacts or negative health impacts.

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## **8 HABITATS REGULATIONS ASSESSMENT**

### **8.1 Background**

8.1.1 This HRA screening assessment has been produced as part of an integrated screening assessment on the Waste Prevention Programme with a SA and a HIA. This screening assessment will sit within the SA and will ensure that all HRA-related considerations are fully integrated into the Waste Prevention Programme as it is developed.

8.1.2 It should be noted that the inclusion of the HRA within the main body of the SA is for the purpose of presenting all relevant assessment information within a single document. As such, it is important to state that the HRA is not an integrated part of the SA rather a separate specific assessment process that requires consideration in isolation to that of the SA.

8.1.3 Nonetheless whilst the levels of detail required within the SA, HIA and the HRA are different, there are distinct crossovers between the topics, with the information gathered within one being of value to each of the other assessments. The SA assesses, amongst other things, the effects of planning and nature conservation policy and legislation. This HRA provides an examination of the potential impacts of the Sector Plan on the nature conservation areas protected under the Habitats Directive, the Wild Birds Directive and the Ramsar Convention. This assessment forms one sub-section of the wider SA of the Waste Prevention Programme.

8.1.4 This assessment has been based upon preliminary information provided by Welsh Government on the scope of the Waste Prevention Plan. The Scope and Objectives are presented in Section 2.

### **8.2 Requirement for Habitats Regulations Assessment**

8.2.1 Under Article 6 of the Habitats Directive an assessment is required where a plan or project, not directly connected with or necessary to the management of a Natura 2000 site, either individually or in combination with other plans or projects, is likely to have a significant effect upon that site. Natura 2000 is a network of areas designated to conserve natural habitats and species that are rare, endangered, vulnerable or endemic within the European Community. This includes Special Areas of Conservation (SAC) designated under the Habitats Directive for their habitats and/or species of European importance and Special Protection Areas (SPA) classified under the Conservation of Wild Birds Directive for rare, vulnerable and regularly occurring migratory bird species. In addition, it is a matter of law that candidate SAC (cSAC) are considered in this process, and a matter of policy that pSACs, sites which are proposed in the UK but which are yet to be submitted to the European Commission are given a similar level of protection not included.

8.2.2 Decision-takers are expected to note this potential designation when considering applications that could affect a pSACs. Furthermore it is a matter of Government policy that sites designated under the 1971 Ramsar Convention for their internationally important wetlands and potential SPAs (pSPA) are considered. For simplicity within this report the term European sites should be taken to include all sites requiring assessment under the Habitats Regulations (i.e. it should be taken to include Ramsar sites).

8.2.3 The requirements of the Habitats Directive are transposed into Welsh law out to territorial water limits (12 nautical miles) by means of the Conservation of Habitats

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and Species Regulations 2010. The Offshore Marine Conservation (Natural Habitats, &c) Regulations 2007 transpose the Habitats Directive in the UK offshore marine area (beyond 12 nautical miles). The Habitats Regulations also includes SPAs, classified under the Birds Directive, within the definition of a European Site. European offshore marine sites are now included in the HRA process.

8.2.4 Paragraph 3, Article 6 of the Habitats Directive states that:

*'any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives...the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public'.*

8.2.5 Paragraph 4, Article 6 of the Habitats Directive states that:

*'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest... the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected...'*

8.2.6 These requirements are implemented in Wales through Regulations 61, 62, 66 and 67 of the Habitats Regulations.

### **8.3 Stages of Habitats Regulations Assessment**

8.3.1 The commission guidance on the Habitats Directive sets out four distinct stages for assessment under the Directive:

- Stage 1: Screening – the process which initially identifies the likely impacts upon a Natura 2000 site of a plan or project, either alone or in combination with other plans or projects, and considers whether these impacts are likely to be significant.
- Stage 2: Appropriate Assessment – the detailed consideration of the impact on the integrity of the Natura 2000 sites of the plan or project, either alone or in combination with other plans or projects, with respect to the site's conservation objectives and its structure and function. This is to determine whether there will be adverse effects on the integrity of the site. Specific guidance on this stage is provided in Habitat Regulations Guidance Note 1.
- Stage 3: Assessment of alternative solutions – the process which examines alternative ways of achieving the objectives of the plans or projects that avoid adverse impacts on the integrity of the Natura 2000 site.
- Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain – an assessment of whether the development is necessary for imperative reasons of overriding public interest (IROPI) and, if so, of the compensatory measures needed to maintain the overall coherence of the Natura 2000 network.

8.3.2 This section addresses the requirements for screening assessment undertaken as part of Stage 1 of the HRA process to establish whether or not the likely impacts of the Waste Sector Plan is likely to have significant effects upon Natura 2000 sites. As

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this HRA assessment is of a broad policy rather than of a specific plan or project the information presented within this assessment is high-level and does not contain the level of detail typically presented for HRA screening exercises. Any plan or project brought forward under the Sector Plan may still require its own HRA assessment<sup>69</sup> and the HRA of the Sector Plan does not negate the need for project level assessment at the appropriate stage.

#### **8.4 Steps in HRA Screening (Stage 1)**

8.4.1 The European Commission guidance recommends that screening should fulfil the following steps:

- a) Determine whether the plan is directly connected with or necessary for the management of European sites;
- b) Describe the plan and describe and characterise any other plans or projects which, in combination, have the potential for having significant effects on European sites;
- c) Identify the potential effects on European sites; and
- d) Assess the likely significance of any effects on European sites.

#### **8.5 HRA Screening Assessment**

##### Step 1: The strategy and management of international sites

8.5.2 This stage considers whether the Waste Prevention Programme is directly connected with or necessary to the management of Natura 2000 sites. Within this context 'directly' means that the plan is solely conceived for the conservation management of a site or group of sites and 'management' refers to the management measures required in order to maintain in favourable condition the features for which the Natura 2000 site has been designated.

8.5.3 The Waste Prevention Programme is neither directly connected with, nor necessary for, the management of any Natura 2000 sites within the England. As such it is clear that further consideration of the plan by way of a HRA screening assessment is required.

##### Step 2: Description of the Waste Prevention Programme

8.5.4 The Waste Prevention Programme will provide policy interventions which will result in Wales meeting the waste reduction aims and objectives of the Revised Waste Framework Directive and Towards Zero Waste for all of the municipal, Industrial / Commercial and Construction / Demolition Sectors. It will focus on the following:

- the wastes produced directly by the above sectors (with a focus on waste prevention and reuse),
- the mechanisms by which the above sectors can facilitate a reduction in the waste that they generate by focusing on the products produced by the respective sectors.

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<sup>69</sup> Further guidance on how to undertake HRAs can be found at: <http://www.environment-agency.gov.uk/business/regulation/101795.aspx>

- 8.5.5 The Waste Prevention Programme focuses primarily on measures that aim to facilitate and support changes within the sectors outlined above in order to assist them in meeting the waste reduction objectives and targets.
- 8.5.6 An HRA<sup>70</sup> was carried out on TZW in 2009 and a report produced which lists the European sites in Wales and in England within 15 km of the Welsh border. The report assigns each site to a broad habitat category (grasslands, woodlands, rivers, etc) and identifies the key sensitivities for each of the broad habitat categories (for example a key sensitivity for grasslands was identified as scrub encroachments, for rivers a key sensitivity was recreational pressure and disturbance).
- 8.5.7 A HRA screening assessment was carried out to ascertain whether TZW could have the potential to impact on Natura 2000 and Ramsar sites. The assessment found that TZW will result in measures to reduce disposal of waste to landfill and further investigations to determine whether greenhouse gas emissions (particularly methane) from existing operational and closed landfills can be reduced. This was assessed as reducing the risks of future adverse effects to European sites and reducing existing effects if controls on emissions from existing landfill sites can be found.
- 8.5.8 Given that the Waste Prevention Programme provides no detail in terms of spatial scope and largely focuses on facilitating changes within the industries, it is only possible to consider assumptions with regard to the potential infrastructure that may be covered under the Waste Prevention Programme at a high level beyond that of the assessment undertaken previously for TZW HRA.
- 8.5.9 At a non-specific level assumptions or criteria can be made about waste infrastructure within Wales. These assumptions may either be exclusionary or discretionary. Exclusionary criteria are those which will preclude the site from being considered as a site for a waste facility and discretionary criteria are those which are likely to reduce the suitability of a site for development as a waste facility. Possible assumptions are listed within Table 8.1. This does not attempt to provide an exhaustive list but instead illustrates the range of criteria likely to be used when refining potential locations for waste infrastructure facilities.

**Table 8.1: Possible Assumptions used to guide location of Waste Infrastructure Facilities**

Assumptions/Criteria
Proximity to Transportation Network ( <i>sites need good road/rail access</i> )
Vulnerability to Flooding ( <i>flooding presents unacceptable environmental risk</i> )
Vulnerability to other Natural Disasters ( <i>range of unanticipated environmental impacts</i> )
Proximity to other Industrial Facilities ( <i>cumulative impacts, in particular associated with accidents on nearby facilities</i> )
Proximity to Urban or Residential Areas ( <i>sites likely to be some distance from residential areas but on urban fringes to ensure adequate workforce</i> )
Proximity to Military Activities ( <i>hazards associated with military activities</i> )

<sup>70</sup> ERM (2009) *Wales Waste Strategy Habitats Regulations Assessment Report*, available from [http://wales.gov.uk/topics/environmentcountryside/epq/waste\\_recycling/zerowastebackground/appraisals/?lang=en](http://wales.gov.uk/topics/environmentcountryside/epq/waste_recycling/zerowastebackground/appraisals/?lang=en) (accessed June 2010)

Assumptions/Criteria
Proximity to Designated Sites of Ecological Importance ( <i>development within sites of importance typically prohibited</i> )
Proximity to Areas of Amenity, Cultural and Heritage Importance ( <i>development within such zones may often be restricted</i> )
Proximity to Water Courses and Ground Water Protection Zones ( <i>storage and use of waste substances within sensitive areas generally restricted</i> )
Proximity to Resources required during operation ( <i>treatment facilities likely to be near to point of waste generation within reason</i> )

8.5.10 Through analysis of the operation of the various facilities that potentially may be brought forward under the NPS, a number of siting criteria can be identified which are likely to govern the location of new facilities in practical terms. However, for the purposes of this HRA screening assessment they do little to refine the list of European sites which may be affected by the proposed works, in particular given that most siting criteria are likely to be discretionary and therefore it is not possible without certainty to rule out impacts on particular sites.

8.5.11 At this stage therefore it is not possible to identify a short list of European sites which are most likely to be exposed via pathways to likely significant effects associated with the Waste Prevention Programme. The impacts must therefore be viewed on a non-specific basis on all of the different designated habitats and species which form the Natura 2000 network. This includes impacts upon Natura 2000 sites beyond the national boundary, in particular within England as many of these, particularly those close to the nationally boundary, or with a specific transmission pathways such as being connected by a water course.

#### Other Plans and Programmes and In-Combination Effects

8.5.12 Given the strategic nature of this screening assessment and the uncertainties surrounding the timing and effects of other national level plans and projects, it is not practicable at this stage to identify all the possible plans and projects that may act 'in-combination' or to consider the specific nature of likely effects arising. However, it is possible to outline at a strategic level the broad types of effects that may arise from the implementation of other plans and projects which should inform the overall implementation of the Waste Prevention Programme. Some of the effects (identified in Table 8.2) may occur as a result of the Waste Prevention Programme alone, but may also occur or be magnified as a result of a wider range of development actions and activities arising from the implementation of other plans and projects.

**Table 8.2: Potential strategic in-combination effects**

Effects	Development actions and activities
Water resources and quality	<ul style="list-style-type: none"> <li>• sewage and industrial effluent discharges from new developments</li> <li>• abstraction to secure water supplies for planned growth (housing, industry)</li> <li>• flood and coastal risk management development (for example, implementation of new flood defences)</li> </ul>
Soil and Geology	<ul style="list-style-type: none"> <li>• changes in land use, in particular agricultural production</li> <li>• changes in soil function and processes.</li> </ul>

Air quality	<ul style="list-style-type: none"> <li>• increase in atmospheric pollutants (for example, road, rail, airports expansion)</li> <li>• changes in atmospheric pollutants from power generation, in particular change in fossil fuel use</li> <li>• 'cleaner' technologies in industrial and domestic use</li> </ul>
Disturbance	<ul style="list-style-type: none"> <li>• construction and operation of new developments (transportation, residential, commercial, industrial)</li> <li>• recreational pressures including trampling from settlements expansion, improved access (for example, national coastal footpaths)</li> <li>• infrastructure at height (chimney stacks, wind turbines)</li> </ul>
Habitat (and species) loss and fragmentation	<ul style="list-style-type: none"> <li>• direct land take (for example, road, rail, settlements, industrial)</li> <li>• barriers to migration (for example, tidal power, bridge construction)</li> </ul>

8.5.13 Further assessment of the cumulative impacts of different plans and projects will not be specifically undertaken for this screening assessment. Should further Appropriate Assessment be required it would however be appropriate to consider the potential impacts of in-combination effects in greater detail.

Likely Significant effects

8.5.14 The Waste Prevention Programme does not contain any spatial elements and is unlikely to provide significant new waste infrastructure, with the exception of possible facilities to store and process materials through reuse and repair networks.

8.5.15 It is highly likely that within the regulation and permitting of the development of any infrastructure projects to implement Waste Prevention Programme, a range of environmental control measures will be required to ensure adverse impacts upon the environment are avoided or minimised. This will include the reduction of air quality emissions to below critical threshold levels as identified by Air Pollution Information System (APIS) and others. The control of water abstraction and discharge of water (to freshwater and marine) is required via the Water Framework Directive<sup>71</sup>, the consideration of impacts on designated sites is covered under the Habitats Regulations, Wildlife and Countryside Act 1981 (as amended), and national and location planning policy. These control measures will ensure that impacts associated with projects to implement the plan are minimised. Indeed it is likely that with the control measures in place, development that may result in significant adverse impacts on European sites would only be permitted in exceptional circumstances. Such circumstances would need to have demonstrated Imperative Reasons Overriding the Public Interest (IROPI) and where a rigorous assessment of alternatives had been undertaken and determined prior to the IROPI assessment.

8.5.16 Nevertheless, as with the TZW HRA it is not possible to conclude that there will be no likely significant effects on European sites.

8.5.17 Given the possibility of significant effects associated with the Waste Prevention Programme, further, detailed assessment is necessary to satisfy the requirements of the Habitats Regulations. This detailed assessment is described as an 'Appropriate Assessment'.

<sup>71</sup> Water Framework Directive (2000): <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0060:EN:HTML>

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- 8.5.18 In order to consider potential impacts in more detail, further information on the proposals of the plan and in-depth consultation with CCW and other key stakeholders would be required.
- 8.5.19 The Waste Prevention Programme will not give detail on potential projects or proposals for its implementation. As a result, it is considered that there is insufficient detail at this time to enable a more in-depth analysis to the degree required for Appropriate Assessment. It will only be possible to undertake this level of assessment once specific projects are proposed and/or once sufficient detail is available at the plan level to enable a thorough and robust analysis to be carried out.
- 8.5.20 An assessment of any likely significant in-combination effects will be made and full recommendations for mitigation will be provided within each project/plan-level Appropriate Assessment. These will suggest measures to reduce the potential for any development to result in impacts upon the Natura 2000 network or Ramsar sites.
- 8.5.21 Where possible over-arching mitigating statements should be incorporated within the, Waste Prevention Programme for example:
- that development will not be located within any Natura 2000 site so that no direct habitat loss will occur;
  - that wherever possible works will be avoided where there is a direct transmission pathway to Natura 2000 or Ramsar sites;
  - that buffer zones will be provided between development zones and Natura 2000 and Ramsar sites (the size and extent of which should be dependent upon the nature of impact and the sensitivity of receptors); and
  - that there would be a general presumption against the permitting of construction/improvement works which generate particular adverse effects in proximity to Natura 2000 or Ramsar sites, which are sensitive to those effects – e.g. where particular adverse impacts on the water environment are identified.
- 8.5.22 Through the HRA screening it has not been possible to categorically demonstrate that the Waste Prevention Programme will not have any likely significant effects upon Natura 2000 sites, the Natura 2000 network or Ramsar sites (including marine and off-shore sites). Given the uncertainty of significant effects associated with, further, detailed assessment through Appropriate Assessment is considered necessary to satisfy the requirements of the Habitats Regulations. However given the strategic level of the plan and lack of detail on potential projects or proposals for its implementation there is insufficient detail at this time to enable a more in-depth analysis to the degree required for Appropriate Assessment. It will only be possible to undertake this level of assessment once specific projects are proposed and/or once sufficient detail is available at the plan level to enable a thorough and robust analysis to be carried out.
- 8.5.23 The screening assessment does not in any way reduce the scope of project level HRA required in the case of an individual development application. Where initial screening undertaken indicates significant adverse effects on integrity or cannot exclude the possibility of significant adverse effects either alone or in combination with other plans or projects, a full Appropriate Assessment would be required which meets the requirements of the Habitats Regulations. It will be for the competent authority (in the majority of cases for the Waste Prevention Programme Welsh Government, CCW and Environment Agency) to apply in full the key tests as stipulated by the Habitats Directive. Furthermore, if no projects or actions arise from
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the Programme which trigger project level HRA, wider effects of the Programme would be monitored through the mechanisms outlined in Section 9.

8.5.24

It should be noted that at a project level the assumption that the possibility of adverse effects cannot be excluded, due to a lack of information (and thus consideration of alternatives and imperative reasons of overriding public interest (IROPI) is required) will rarely, if ever be appropriate. With the location and impacts of the proposed development well understood the project level HRA will be required to present information necessary to reach a definitive conclusion. Where projects conclude that adverse impacts cannot be avoided through mitigation the individual project will need to present an assessment of alternatives and set out an IROPI case and establish the requirements for compensatory measures.

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## **9 IMPLEMENTATION AND MONITORING**

### **9.1 Links to other Plans and Programmes**

9.1.1 The Waste Prevention Programme contains actions linked to other TZW Sector Plans, such as the C&D Sector Plan, MSP1 and I&C Sector Plan. Potential effects of those actions have been or will be assessed in the SA reports for these Plans.

9.1.2 Each of the sector plans must be supportive of and developed in conjunction with one another to maximise the opportunity for the common goals of TZW to be met.

9.1.3 The development of future regional and local plans and programmes will have to take into consideration the targets and objectives set out in the Waste Prevention Programme.

### **9.2 Monitoring**

9.2.1 A monitoring strategy will be implemented to monitor potential effects of the implementation of the Waste Prevention Programme. This strategy will ensure alignment and consistency of indicators used to measure performance against the key objectives in this SA with TZW Strategy monitoring indicators and other Sector Plans.

9.2.2 The monitoring strategy will include the framework of indicators set out in the TZW SA:

- Ecological Footprint of Waste;
- Climate change;
- Waste management;
- Eco-design;
- Employment and job type;
- Skill levels and Training;
- Resource use and efficiency;
- Contribution to the wellbeing of Wales through an improved local environment and enriched communities which are empowered to shape their services;
- Full human potential; and
- Equality of opportunity.

#### Indicators, Responsibility, Reviews

9.2.3 A further aspect of the assessment will be to identify measures to monitor the environmental effects of each Sector Plan and its impacts on the environment (stage E of the SA/SEA process. See Table 1.1 for more detail).

9.2.4 Welsh Government will be responsible for the implementation of a monitoring strategy for the Waste Prevention Programme. Monitoring involves measuring indicators which establish a link between implementation of the Waste Prevention Programme and the likely effects being monitored. The analysis of indicators may include:

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- Change in patterns and trends of indicators;
  - Baseline information and predicted effects;
  - Use of quantitative and qualitative information; and
  - Interpretation of monitored data results.

#### 9.2.5

Indicators presented on the environmental baseline should be considered and reviewed to ensure that potential environmental, social and economic effects of the Waste Prevention Programme implementation can be effectively measured and monitored after its adoption. Table 9.1 presents a detailed list of potential monitoring indicators for each objective and potential sources of information.



**Table 9.1 - Potential Indicators to Monitor the Effects of the Waste Prevention Programme**

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
<p><b>Waste Management</b></p> <p>To increase sustainable waste management and reduce Wales' ecological footprint</p>	<ul style="list-style-type: none"> <li>Waste arisings and disposal across all sectors</li> <li>Waste contribution to Ecological Footprint</li> <li>Resource use – Wales' domestic material consumption</li> <li>Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources</li> </ul>	<ul style="list-style-type: none"> <li>Waste arisings by sector in Wales, (kilotonnes per annum)</li> <li>Waste arisings by disposal (kilotonnes per annum)</li> <li>Ecological footprint (global hectares per person), Wales and the UK</li> <li>Resource efficiency - the ratio of carbon dioxide emissions to GVA at current prices</li> <li>Percentage of electricity generated from renewable sources</li> <li>Packaging waste recovered or recycled in Wales</li> </ul>	<ul style="list-style-type: none"> <li>To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;</li> <li>To increase infrastructural capacity and facilities for sustainable waste management;</li> <li>To encourage behavioural change and participation amongst household, commercial and industrial operators; and</li> <li>To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management.</li> </ul>	<p>Stocks of Intermediate Level Waste (ILW) and Low Level Radioactive Waste (LLW)</p> <p>Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources</p> <p>Resource efficiency</p> <p>State of Environment (SoE) indicators:</p> <ul style="list-style-type: none"> <li>Indicator 2a: Ecological footprint</li> <li>Indicator 6b: Percentage of municipal waste recycled or composted</li> <li>Indicator 9a: Quantity of municipal waste per person per annum</li> <li>Indicator 39a: Trends in radioactive discharges from major sources in Wales</li> <li>Indicator 12b: Proportion of packaging waste recovered in the UK</li> </ul>	<ul style="list-style-type: none"> <li>Environment Agency Wales</li> <li>Environment Agency Waste Data <a href="http://www.environment-agency.gov.uk/research/library/data/">http://www.environment-agency.gov.uk/research/library/data/</a></li> <li><a href="http://www.wastedataflow.org">www.wastedataflow.org</a></li> <li>SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> <li>Nuclear Development Agency <a href="http://www.nda.gov.uk/ukinventor/summaries/wales.cfm">http://www.nda.gov.uk/ukinventor/summaries/wales.cfm</a></li> <li>Packaging Waste Data <a href="http://www.defra.gov.uk/environment/waste/producer/packaging/index.htm">http://www.defra.gov.uk/environment/waste/producer/packaging/index.htm</a></li> <li>Resource efficiency data, Department of Energy and Climate Change <a href="http://www.decc.gov.uk">www.decc.gov.uk</a></li> <li>Waste prepared for reuse: waste statistics via WasteDataFlow, which will be adapted if necessary with arisings and activities with the municipal sector, and the end destination for recyclates arisings from the Local Authority Municipal Waste stream.</li> <li>Surveys, or other methods, may be used for business waste.</li> </ul>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
				<ul style="list-style-type: none"> <li>Indicator 12d: Number of Green Dragon certified companies in Wales</li> </ul>	
<b>Waste Infrastructure</b> To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this	<ul style="list-style-type: none"> <li>Progress on green jobs, skills and training through the Green Jobs Strategy</li> <li>Employment - percentage of people of working age in work*</li> <li>Resource efficiency – the ratio of carbon dioxide emissions to GVA at current prices</li> <li>Resource use – Wales’ domestic material consumption</li> </ul>	<ul style="list-style-type: none"> <li>Packaging waste recovered or recycled in Wales</li> <li>The number of fly-tipping incidents by type of land</li> <li>Most common types of fly-tipped waste</li> <li>Economic output - Gross Value Added (GVA) and GVA per head</li> <li>Waste arisings by sector in Wales, (kilotonnes per annum)</li> <li>Waste arisings by disposal (kilotonnes per annum)</li> <li>Percentage of municipal waste (excluding abandoned vehicles) recycled or composted in Wales</li> <li>Kilograms per person per annum of municipal waste in Wales</li> <li>Kilograms per</li> </ul>	<ul style="list-style-type: none"> <li>To promote markets for recyclates and recycled goods;</li> <li>To encourage the development and deployment of alternative waste technologies and R&amp;D;</li> <li>To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;</li> <li>To promote equality of opportunity and access to local employment, training and upskilling and volunteering;</li> <li>To support existing and develop new social enterprises focusing on waste as a community</li> </ul>	Stocks of ILW and LLW The number of fly-tipping incidents Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources Resource efficiency State of Environment (SoE) indicators: <ul style="list-style-type: none"> <li>Indicator 2a: Ecological footprint</li> <li>Indicator 6b: Percentage of municipal waste recycled or composted</li> <li>Indicator 9a: Quantity of municipal waste per person per annum</li> <li>Indicator 39a: Trends in radioactive discharges from major sources in Wales</li> <li>Indicator 12d: Number of Green Dragon certified companies in Wales</li> <li>Indicator 12b:</li> </ul>	<ul style="list-style-type: none"> <li>Environment Agency Waste Data <a href="http://www.environment-agency.gov.uk/research/library/data/">http://www.environment-agency.gov.uk/research/library/data/</a></li> <li><a href="http://www.wastedataflow.org">www.wastedataflow.org</a></li> <li>SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> <li>Nuclear development Agency data: <a href="http://www.nda.gov.uk/ukinventor/y/summaries/wales.cfm">http://www.nda.gov.uk/ukinventor/y/summaries/wales.cfm</a></li> <li>Packaging Waste data: <a href="http://www.defra.gov.uk/environment/waste/producer/packaging/index.htm">http://www.defra.gov.uk/environment/waste/producer/packaging/index.htm</a></li> <li>Resource efficiency statistics available at: <a href="http://www.decc.gov.uk">www.decc.gov.uk</a></li> <li>New waste infrastructure developed</li> <li>Number of new business within the collection, infrastructure markets</li> </ul>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
		<p>person per annum of household waste in Wales</p> <ul style="list-style-type: none"> <li>Resource efficiency - the ratio of carbon dioxide emissions to GVA at current prices</li> <li>Percentage of electricity generated from renewable sources</li> </ul>	<p>resource;</p> <ul style="list-style-type: none"> <li>To promote equality and opportunity to access waste management facilities to prevent instances of fly-tipping;</li> <li>To provide cost-effective and reliable sustainable waste management.</li> </ul>	<p>Proportion of packaging waste recovered in the UK</p> <ul style="list-style-type: none"> <li>Indicator 28b: Trends in level of fly-tipping</li> </ul>	
<p><b>Landscape, biodiversity and cultural heritage</b></p> <p>To protect and enhance urban and rural landscapes and resources, including ecological services and functions</p>	<ul style="list-style-type: none"> <li>Resource use – Wales’ domestic material consumption</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of species in favourable, recovering or unfavourable condition in Wales</li> <li>Land Cover Map - % of Wales’ land cover designated for nature conservation</li> <li>Trends in Biodiversity Action Plan priority species and habitats in Wales</li> <li>Short-term abundance of widespread breeding birds in Wales</li> <li>Long-term changes</li> </ul>	<ul style="list-style-type: none"> <li>To protect designated landscapes: environmental, cultural and historic;</li> <li>To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;</li> <li>To protect designated and undesignated historic assets and their settings, including listed</li> </ul>	<ul style="list-style-type: none"> <li>Indicator 19a: Trends in Biodiversity Action Plan species and habitats</li> <li>Indicator 21: Percentage of features on Natura 2000 sites in favourable or recovering condition</li> <li>Indicator 26: The number of historic assets deemed to be at risk</li> <li>Indicator 23: Indicators, measuring quality and diversity, to be developed on completion of Countryside Council</li> </ul>	<ul style="list-style-type: none"> <li>Countryside Council for Wales (CCW) <a href="http://www.ccw.gov.uk">www.ccw.gov.uk</a> and <a href="http://landmap.ccw.gov.uk/">http://landmap.ccw.gov.uk/</a>.</li> <li>SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> </ul>

<sup>72</sup> As indicated on the UK National Ecosystems Assessment Synthesis Report will be reviewed. The report is available at: <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
		<p>in the ranges of widespread breeding birds, by major habitat group in Wales</p> <ul style="list-style-type: none"> <li>• Existing levels of statutory cultural heritage protection in Wales - Number and condition of scheduled monuments</li> <li>• Percentage of sensitive habitats exceeding critical loads for acidification/ eutrofication in Wales</li> <li>• Accessible Natural Greenspace Standards by local authority</li> <li>• Welsh Outdoor Recreation Survey</li> <li>• Percentage of certified woodland area in Wales and the UK</li> </ul>	<p>buildings, scheduled ancient monuments, and historic parks and gardens;</p> <ul style="list-style-type: none"> <li>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;</li> <li>• To promote the use of brownfield land use;</li> <li>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;</li> <li>• To remediate contaminated land.</li> </ul>	<p>for Wales (CCW) landscape characterisation work</p> <ul style="list-style-type: none"> <li>• Indicator 27b: The percentage of the population meeting each of Countryside Council for Wales size/distance criteria for access to natural greenspace.</li> <li>• Indicator 29d: The percentage of adults living in Wales who frequently use the outdoors for informal recreation</li> <li>• Indicator 33j: Area of natural and semi-natural habitat where deposition of acid exceeds critical loads</li> <li>• Indicator 33k: Area of natural and semi-natural habitat where deposition of nitrogen compounds exceeds critical loads</li> <li>• Indicator 20b: Proportion of woodland that is certified</li> <li>• Indicators of the status of ecosystem services<sup>72</sup> (e.g. inputs of nitrogen</li> </ul>	



Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
				and phosphorus fertilisers, ocean acidification in terms of GHG and carbon dioxide emissions, sea temperature rise, number of wild fisheries, hedgerows in lowland landscapes, costs of dealing with invasive species)	
<b>Soil</b> To protect and enhance soil resources	<ul style="list-style-type: none"> <li>Resource use – Wales’ domestic material consumption</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Estimated total stocks of carbon in Welsh soil (million tonnes)</li> <li>Contaminated land brought back into beneficial use in Wales (hectares),</li> <li>LULUCF kilotonnes of carbon dioxide (CO2) equivalent</li> <li>Variations in the percentage of soil groups in Wales</li> <li>% of Wales’ land cover designated for soil conservation</li> <li>Carbon stock (tonnes per hectare) in the top 0-15cm of soil in Welsh broad habitats</li> </ul>	<ul style="list-style-type: none"> <li>To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation;</li> <li>To protect against contamination to soil;</li> <li>To conserve and treat source segregated organic waste for improving the quality of Welsh soils.</li> </ul>	<ul style="list-style-type: none"> <li>Indicator 17: Number of sites complying with standards as set out in Minerals Planning Policy and the associated Technical Advice Note for the protection of the environment and local communities</li> <li>Indicator 34: Land affected by contamination brought back into beneficial use</li> <li>LULUCF net sink of greenhouse gases in Wales</li> <li>Land Use cover</li> <li>Indicator 16b: The carbon stock and pH in the top 15cm of soil as recorded by Countryside Survey</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> <li>Countryside Council for Wales (CCW) <a href="http://www.ccw.gov.uk">www.ccw.gov.uk</a> and <a href="http://landmap.ccw.gov.uk/">http://landmap.ccw.gov.uk/</a></li> </ul>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
<p><b>Water</b></p> <p>To protect and promote the sustainable use of water resources</p>	<ul style="list-style-type: none"> <li>Resource use – Wales' domestic material consumption</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of river lengths of good, fair, poor or bad biological or chemical quality in Wales</li> <li>Water Framework Directive Classification - ecological status in Wales</li> <li>Water Framework Directive Classification - chemical status in Wales</li> <li>Water Framework Directive Classification - groundwater status in Wales</li> <li>Percentage of water resource zones meeting target headroom requirements in Wales</li> <li>Numbers of properties benefiting from flood alleviation schemes in Wales</li> <li>Number of properties in Wales with a significant, moderate or low risk of flooding from the rivers or sea</li> </ul>	<ul style="list-style-type: none"> <li>To promote sustainable flood risk management; and</li> <li>To protect and enhance water quality and quantity in inland, coastal and maritime environments.</li> </ul>	<ul style="list-style-type: none"> <li>Indicator 35a: River water quality - biological and chemical</li> <li>Indicator 35c: Compliance with 'good status' under the Water Framework Directive</li> <li>Indicator 13b: The percentage of resource zones meeting target headroom requirements</li> <li>Indicator 13a: Level of leakage as a percentage of water supplied in Wales</li> <li>Indicator 31a: Annual cost of damage due to flooding</li> <li>Indicator 31b: Probability of flooding of assets at risk</li> <li>Indicator 36b: Bathing water quality</li> <li>Indicator 14b: Volume of water abstracted from the environment</li> </ul>	<ul style="list-style-type: none"> <li>SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> <li>Environment Agency</li> </ul>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
		<ul style="list-style-type: none"> <li>Number of properties in Wales with a significant, moderate or low risk of flooding from the rivers or sea, by source</li> <li>The percentage of bathing waters which satisfy EC mandatory and guideline standards in Wales</li> <li>Water abstracted from the environment (excluding electricity generation) in Wales, gigalitres per year</li> </ul>			
<p><b>Air quality, noise and odour</b></p> <p>To protect and enhance air quality in local, regional and national context</p>	<ul style="list-style-type: none"> <li>Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources</li> <li>Resource efficiency – the ratio of carbon dioxide emissions to GVA at current prices</li> <li>Resource use – Wales’ domestic material consumption</li> </ul>	<ul style="list-style-type: none"> <li>Annual mean measured concentrations of heavy metals in the air as a percentage of objective thresholds in the Air Quality Standards (Wales) Regulations</li> <li>Percentage of sensitive habitats exceeding critical loads for acidification in Wales</li> <li>Number of days per year with moderate or higher</li> </ul>	<ul style="list-style-type: none"> <li>To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;</li> <li>To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and</li> </ul>	<ul style="list-style-type: none"> <li>Indicator 33b: Air concentrations of Heavy Metals</li> <li>Indicator 33a: Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations</li> <li>Indicator 33c: Number of people living in Air Quality Management Areas</li> <li>Indicator 33j: Area of natural and semi-natural habitat where deposition of acid</li> </ul>	<ul style="list-style-type: none"> <li>SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> <li>Environment Agency</li> <li>AQMAs- Defra: <a href="http://aqma.defra.gov.uk/maps-wales.php?&amp;la_id=445">http://aqma.defra.gov.uk/maps-wales.php?&amp;la_id=445</a></li> </ul>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
		<p>pollution levels, urban sites in Wales</p> <ul style="list-style-type: none"> <li>• Number of days per year with moderate or higher pollution levels, urban and rural sites</li> <li>• Number of People Living in 'AQMAS'</li> <li>• Number of waste infrastructure sites built in AQMAS</li> <li>• Number of waste infrastructure sites built in urban areas</li> </ul>	<p>from facilities;</p> <ul style="list-style-type: none"> <li>• To minimise adverse impacts to noise levels within communities;</li> <li>• To minimise odours arising from waste processing and its impact upon local communities.</li> </ul>	<p>exceeds critical loads</p> <ul style="list-style-type: none"> <li>• Indicator 33e: Level of emissions from Wales of ammonia</li> <li>• Indicator 33f: Level of emissions from Wales of nitrogen oxides</li> <li>• Indicator 33g: Level of emissions from Wales of fine particulates</li> </ul>	
<p><b>Climate change</b> To assist with Wales' capacity to adapt to and mitigate against climatic change</p>	<ul style="list-style-type: none"> <li>• Greenhouse gas emissions</li> <li>• Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources</li> <li>• Resource efficiency – the ratio of carbon dioxide emissions to GVA at current prices</li> <li>• Resource use – Wales' domestic material consumption</li> </ul>	<ul style="list-style-type: none"> <li>• Estimated emissions of greenhouse gases in Wales, million tonnes of carbon dioxide equivalent</li> <li>• Estimated carbon dioxide emissions in Wales by source, millions of tonnes</li> <li>• LULUCF is a net sink of greenhouse gases in Wales</li> <li>• Percentage of electricity generated from renewable sources</li> <li>• Percentage of energy generated from AD and EFW</li> </ul>	<ul style="list-style-type: none"> <li>• To reduce GHG emissions;</li> <li>• To contribute to national, regional and local level carbon abatement strategy/objectives;</li> <li>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;</li> <li>• To be adaptable to predicted climate change effects including fluvial and</li> </ul>	<ul style="list-style-type: none"> <li>• Indicator 7a: Annual emissions of basket of greenhouse gases (by sector)</li> <li>• Indicator 30a: Percentage of people whose main mode of travel to work is a) walking b) cycling</li> <li>• Electricity from renewable sources</li> <li>• Energy from AD and EFW plants</li> </ul>	<ul style="list-style-type: none"> <li>• SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> <li>• Resource efficiency and energy statistics are available at: <a href="http://www.decc.gov.uk">www.decc.gov.uk</a></li> </ul>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
		plants <ul style="list-style-type: none"> <li>Number of waste infrastructure sites built within land at risk of flooding</li> </ul>	maritime flooding and extreme weather effects.		
<b>Health</b> To protect and enhance the health and well-being of communities	<ul style="list-style-type: none"> <li>Outcomes generated by relevant third sector organisations.</li> <li>Active community participation - percentage of people volunteering on a formal and informal basis</li> <li>Benefit dependency -the percentage of people of working age on key benefits</li> <li>Progress on green jobs, skills and training through the Green Jobs Strategy</li> <li>Employment - percentage of people of working age in work</li> <li>Resource efficiency – the ratio of carbon dioxide emissions to GVA at current prices</li> </ul>	<ul style="list-style-type: none"> <li>GVA per head</li> <li>Employment status of those of working age</li> <li>Percentage of the population in low-income households</li> <li>Level of emissions of ammonia in Wales by source, kilotonnes</li> <li>Level of emissions of nitrogen oxides in Wales by source, kilotonnes</li> <li>Number of odour complaints against waste infrastructure sites</li> <li>Number of noise complaints with regard to waste infrastructure sites</li> <li>Number of waste infrastructure sites built in urban areas</li> <li>Number of green jobs created in the waste sector (non-disposal)</li> <li>Number of accidents at waste</li> </ul>	<ul style="list-style-type: none"> <li>To provide safe, secure, mechanisms for civic engagement;</li> <li>To prevent the exposure of members of the public to hazards, noise and odour arising from waste;</li> <li>To provide opportunities for those with health issues to gain suitable and meaningful employment;</li> <li>To provide safe and healthy working environments for employees within the waste and recycling industries.</li> </ul>	<ul style="list-style-type: none"> <li>Households below average income NS</li> <li>Economic output - Gross Value Added (GVA)</li> <li>Indicator 9a: Quantity of municipal waste per person per annum</li> <li>Indicator 33e: Level of emissions from Wales of ammonia</li> <li>Indicator 33f: Level of emissions from Wales of nitrogen oxides</li> <li>Indicator 33g: Level of emissions from Wales of fine particulates</li> <li>Health inequality - infant mortality Infant, neonatal and perinatal deaths, Wales (year)</li> <li>Life expectancy male/female</li> <li>Crime - Police recorded crime and British Crime Survey figures</li> <li>Welsh Index of</li> </ul>	<ul style="list-style-type: none"> <li>SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> <li>Public Health Wales: <a href="http://www2.nphs.wales.nhs.uk:8080/">http://www2.nphs.wales.nhs.uk:8080/</a></li> <li>Local Government Regulation, formerly the Local Authorities Coordinators of Regulatory Services (LACORS): <a href="http://www.lacors.gov.uk/lacors/home.aspx">http://www.lacors.gov.uk/lacors/home.aspx</a></li> <li>Environment Agency (monitor the number of noise/odour complaints and food waste diverted from landfill)</li> <li>Food Standards Agency <a href="http://www.food.gov.uk">www.food.gov.uk</a></li> <li>Food retailers monitoring data</li> <li>UK National Statistics <a href="http://www.statistics.gov.uk/hub/index.html">http://www.statistics.gov.uk/hub/index.html</a></li> </ul>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
		<p>infrastructure sites</p> <ul style="list-style-type: none"> <li>• Infant mortality Infant, neonatal and perinatal deaths, Wales (year)</li> <li>• Life expectancy male/female</li> <li>• Serious Acquisitive Crime in Wales</li> <li>• Household Crime in Wales</li> <li>• Percentage of respondents feeling safe in the local area in Wales</li> <li>• Serious Acquisitive Crime in Wales,</li> <li>• Household Crime in Wales</li> <li>• Internal Migration Data</li> <li>• Migration between Wales and the rest of the UK</li> <li>• Number of companies, 50 employees involved in sustainable food clusters.</li> <li>• Number of Health and Safety incidents in the waste industry</li> <li>• Percentage of food</li> </ul>		<p>Multiple Deprivation</p> <ul style="list-style-type: none"> <li>• Workless households - working age</li> <li>• Childhood poverty</li> <li>• Pensioner poverty</li> <li>• Average household costs and breakdown of average low income household expenditure</li> <li>• Food waste diverted from landfill</li> <li>• Obesity</li> <li>• Health and Safety incidents in the waste industry</li> </ul>	

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
		<ul style="list-style-type: none"> <li>waste diverted from landfill</li> <li>Obesity level</li> </ul>			
<p><b>Civic engagement</b></p> <p>To increase civic engagement in sustainable waste practice</p>	<ul style="list-style-type: none"> <li>Benefit dependency -the percentage of people of working age on key benefits</li> <li>Outcomes generated by relevant third sector organisations.</li> <li>Progress on green jobs, skills and training through the Green Jobs Strategy</li> <li>Employment - percentage of people of working age in work</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of rights of way which are easy to use in Wales</li> <li>Percentage of households where the time taken to reach local facilities on foot or by public transport is 15 minutes or less (access to key services)</li> <li>Percentage of respondents volunteering in Wales in last three years</li> <li>Average SAP ratings for dwellings</li> <li>Percentage of Key Stages 1, 2 and 3 assessments in Welsh first language</li> <li>Key Stage 2 results by subject (LEA, year, gender, level) NS</li> <li>Percentage of adults aged 19-21 qualified to National Qualification</li> </ul>	<ul style="list-style-type: none"> <li>To raise awareness and understanding of sustainable waste strategy, objectives and management;</li> <li>To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor;</li> <li>To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement;</li> <li>To support and provide opportunities for volunteering in the waste and recycling industries;</li> <li>To ensure all promotional literature is published in</li> </ul>	<ul style="list-style-type: none"> <li>Indicator 30a: Percentage of people whose main mode of travel to work is a) walking b) cycling</li> <li>Indicator 29a: Percentage of total length of footpaths and other rights of way which were easy to use by the public</li> <li>Indicator 24c: Percentage of people volunteering formally or informally at least once over the last 3 years</li> <li>Indicator 24b: Percentage of people who feel safe in the local area - from Living in Wales Survey</li> <li>Welsh language - end of Key Stages 1, 2 and 3 teacher assessments in the subject of Welsh first language</li> <li>Housing - average energy efficiency (SAP rating)</li> <li>Welsh language - end of Key Stages 1,</li> </ul>	<ul style="list-style-type: none"> <li>SoE Report, available at: <a href="http://www.statswales.wales.gov.uk">www.statswales.wales.gov.uk</a></li> <li>Welsh Government</li> </ul>

Objective	Sustainable Development Indicators (TZW)	Baseline / Trend Indicators	Sub-objectives	Potential Indicators to Monitor the Effect of the Waste Prevention Plan	Potential Source of Information
		Framework level 2 <ul style="list-style-type: none"> <li>• Qualification levels of working age adults by NQF level, local authority and NUTS2 area (gender, year) NS</li> <li>• Households Below Average Income NS</li> <li>• Workless households - working age</li> </ul>	Welsh as well as English where appropriate; <ul style="list-style-type: none"> <li>• To provide community facilities including visitor and educational centres.</li> </ul>	2 and 3 teacher assessments in the subject of Welsh first language	



- 9.2.6 Review is a best practice component in policy making and therefore, it is recommended that future reviews of the Waste Prevention Programme are accompanied by updated appraisals.
- 9.2.7 If adverse effects are found, the Waste Prevention Programme will be reviewed to ensure that effective mitigation measures are identified and implemented. A mechanism to identify if a remedial action is needed may be established by Welsh Government.
- 9.2.8 Following consultation on the draft Waste Prevention Programme and this SA Report, further guidance on developing aims and methods for monitoring will be undertaken to take into account responses received on the Waste Prevention Programme and the SA, HRA and HIA. This will be outlined in the Post-adoption Statement that will be published with the adopted Waste Prevention Programme.

### 9.3 Quality Assurance Checklist

- 9.3.1 Table 9.2 presents the Quality Assurance Checklist that describes how the requirements of the SEA Directive (covered by the SA stages A1-D1) have been met in this SA Report.

**Table 9.2 – SEA Directive requirements checklist**

SEA Requirement	SA Report Section
Preparation of an environmental report in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described and evaluated (Art. 5 and Annex I).	All sections
An outline of the contents and main objectives of the plan or programme.	Section 2
Relationship of the plan with other relevant plans and programmes.	Section 4
The environmental characteristics of areas likely to be significantly affected.	Section 4
Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.	Section 4, 5 & HRA
The environmental protection objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental, considerations have been taken into account during its preparation.	Section 4, 5 & 8
The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors (including secondary, cumulative, synergistic, short, medium, and long term permanent and temporary, positive and negative	Section 6

SEA Requirement	SA Report Section
effects) .	
The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	Section 6
An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.	Section 6
A description of measures envisaged concerning monitoring in accordance with Art. 10.	Section 9
A non-technical summary of the information provided under the above headings	See NTS Document
Consultation on: <ul style="list-style-type: none"> <li>- the scope of the environmental report</li> <li>- The environmental report (Art. 6.1, 6.2)</li> <li>- Other EU Members where the implementation of the plan or programme is likely to have significant effects on the environment of the country</li> </ul>	Section 1.7 Section 6 Welsh Government will undertake consultation with relevant EU Member States as appropriate.

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## **10 NEXT STEPS**

### **10.1 Consultation on the SA Report**

10.1.1 Stage D of the SA/SEA process involves formal pre-submission consultation on the draft Waste Prevention Programme and this SA Report, which Welsh Government will be made available to the public for a minimum period of 6 weeks. The consultation period for both the Waste Prevention Programme and this SA Report is open until June 20 2013.

10.1.2 We would like to hear any comments on the content of this SA report, in particular responses to the following questions:

- Are they likely to be significant effects associated with the actions in the Waste Prevention Programme that we have not identified?
- Are there any mitigation and enhancement measures that could be included in the Waste Prevention Programme to improve its sustainability?
- Are the monitoring measures set out sufficient to track significant effects that could be associated with the Waste Prevention Programme?

10.1.3 Consultation responses to this SA Report will be analysed and a summary identifying the main issues raised will be provided.

10.1.4 Please send any comments on the contents of this SA Report, or in response to the questions posed above by letter, fax or e-mail to:

Waste Strategy Branch  
Department for Environment and  
Sustainable Development  
Welsh Government  
Cathays Park  
CF10 3NQ  
  
Email: [wastestrategy@wales.gsi.gov.uk](mailto:wastestrategy@wales.gsi.gov.uk)  
Telephone: 0300 0603300 or 0845 010 3300

### **10.2 Post-Adoption Statement**

10.2.1 The findings of the consultation on the draft Waste Prevention Programme and this SA Report will be consequently considered and incorporated to finalise the SA Report and the Waste Prevention Programme. Once completed this task, Post-adoption Statements will be produced to accompany the Waste Prevention Programme that will summarise how the SA process has influenced the drafting of the Waste Prevention Programme and actions undertaken in this respect.

## 11.1 Sustainability Appraisal (SA) / Strategic Environmental Assessment (SEA)

- Countryside Council for Wales Landmap. Available at: <http://landmap.ccw.gov.uk>
- DEFRA/ Welsh Government (2010) Environmental Permitting (England and Wales) Regulations 2010
- Welsh Assembly Government (WAG) (2007) Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process
- Welsh Government (2013) Draft Waste Prevention Plan.
- Welsh Government (2010) Draft Municipal Sector Plan – Part 1, June 2010
- Welsh Government (2010) Municipal Sector Plan Sustainability Appraisal.
- Parsons Brinckerhoff (PB) (prepared by Welsh Government) (2011) I&C Sector Plan SA/SEA Report, March 2011
- PB (prepared by Welsh Government) (2011) Draft C&D Sector Plan SA/SEA Report, October 2011
- Welsh Government (2010) Planning Policy Wales (Edition 3, July 2010)
- Department for Communities and Local (2010) PPS5 Planning for the Historic Environment: Historic Environment Planning Practice Guide
- Entec (2010) Sustainability Appraisal of the Wales Waste Strategy Municipal Sector Plan Part 1.
- Waste Prevention in Wales: *Evaluation of Current Activity & Outline Options for a Waste Prevention Plan* (Phase 2 Report: July 2012);
- 2<sup>nd</sup> Interim Report: Evaluation of a Range of Waste Prevention Initiatives for Industrial & Commercial Wastes Produced in Wales to Support the Waste Prevention Programme (Amec, October 2012)
- Evaluation of a Range of Waste Prevention Initiatives for Construction & Demolition Waste Produced in Wales to Support the Waste Prevention Programme (Amec, October 2012).
- Environment Agency (2009) Environment Agency Wales' Corporate Plan - Working Together for a Better Wales (2010-15)
- Welsh Government (2010) Natural Environment Framework – A living Wales.
- PB (2010) Sustainability Appraisal Scoping Report of the Wales Waste Strategy Sector Plans.
- Welsh Government (2010) State of the Environment Report. Last updated 14 December 2010. Available at:  
<http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5830>
- Welsh Government (2010) TAN 6 Planning for Sustainable Rural Communities (includes sustainable agriculture and rural services) July 2010.

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- Welsh Government (2010) Climate Change Strategy for Wales (Launched 7th Oct 2010)
  - Welsh Government (2010) Economic Renewal Programme: A New Direction 2010
  - Welsh Government (2010) Food for Wales, Food from Wales 2010-2020.
  - WAG (2008), The Welsh Soils Action Plan (consultation closed but final document not yet published)
  - ERM (2009) Sustainability Appraisal of the Wales Waste Strategy (Towards Zero Waste).
  - WAG (2009) Minerals Technical Advice Notes (MTAN) Wales 2 Coal.
  - Uk Government (2009) Planning (Listed Building and Conservation Areas) Act 1990 (as amended in 2009)
  - WAG (2009) The Welsh Historic Environment Strategic Statement Action Plan
  - WAG (2009) Farming Food and Countryside: Building a Secure Future Strategy.
  - Environment Agency (2009) Welsh River Basin Management Plans.
  - EU (2008) Ambient Air and Cleaner Air for Europe Directive 2008/50/EC
  - Nuclear Development Agency (2007) UK Radioactive Waste Inventory. Available at: <http://www.nda.gov.uk/ukinventory/summaries/wales.cfm>
  - WAG (2007) TAN 18 planning for transport infrastructure.
  - WAG (2007-2013) Rural Development Plan Programme (2007-2013)
  - EU (2006) Registration, Evaluation, Authorisation and Restriction of Chemicals. Regulation (EC) 1907/2006.
  - Office of the Deputy Prime Minister (ODPM) (September 2005), A Practical Guide to Strategic Environmental Assessment Directive. London: HMSO.
  - WAG (2005) TAN 8 Renewable Energy.
  - WAG (2004) TAN 15 –Development and Flood Risk.
  - UK Government (2003) The Water Environment (Water Framework Directive) (England and Wales) Regulations.
  - EU (2003) CAP Single Payment scheme Cross Compliance Regulation (Annex III Council Reg No.73/2009)
  - WAG (2001) Minerals Planning Policy Wales 2001.
  - WAG (2001) TAN 21 Waste.
  - WAG (2000) Minerals Technical Advice Notes (MTAN) Wales 1 Aggregates.
  - UK Government (1990) Planning (Hazardous Substances) Act 1990
  - UK Government (1990) Town and Country Planning Act 1990
  - UK Government (1979) Ancient Monuments and Archaeological Areas Act 1979
  - WAG (2007) Regional Waste Plans (Strategic Framework)– First Review.

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## 11.2 Habitats Regulation Assessment (HRA)

- ERM (2009) Wales Waste Strategy Habitats Regulations Assessment Report, available at [http://wales.gov.uk/topics/environmentcountryside/epq/waste\\_recycling/zerowastebackground/appraisals/?lang=en](http://wales.gov.uk/topics/environmentcountryside/epq/waste_recycling/zerowastebackground/appraisals/?lang=en) (accessed June 2010)
- Water Framework Directive (2000): available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0060:EN:HTML>

## 11.3 Health Impact Assessment (HIA)

- Marc E. Pratarelli (2010) S.A.P.I.E.N.S Vol.3 / n°1, Perspectives, Social Pressure and Recycling: A Brief Review, Commentary and Extensions,
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- Health and Safety Executive (2009) Update to mapping health and safety standards in the UK waste industry.
- Mary Lyons, Paolo Luria, Jane Harris, JMU (August 2009) Recycling and Public Health.
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## GLOSSARY

Term	Definition
Appropriate Assessment	A process required by the Habitats Regulations (SI 2010/490) to avoid adverse effects of plans, programmes and projects on Natura 2000 sites and thereby maintain the coherence of the Natura 2000 network and its features.
Anaerobic Digestion (AD)	A process of controlled decomposition of biodegradable materials under managed conditions where free oxygen is absent, at temperatures suitable for anaerobe bacteria species, which convert the inputs to a methane-rich biogas and whole digestate.
Civic Amenity Site	Sites provided by the local authority for the public to drop off household and municipal solid waste.
Closed loop recycling	Recycling where recycled materials are being used continually for the same purpose, for example a glass bottle recycled into new glass product rather than downgraded, for example being used as an aggregate.
Composting	An aerobic, biological process in which organic wastes, such as garden and kitchen waste, are converted into a stable granular material which can be applied to land to improve soil structure and enrich the nutrient content of the soil.
Compost Like Output (CLO)	The residue created when mixed municipal waste is biologically treated. Currently there is no spreading of CLOs on land in Wales; however, under certain circumstances, the Environment Agency may permit trial spreading of the material.
Cumulative effects	Effects arise, for instance, where several developments each have insignificant effects but together have a significant effect, or where several individual effects of the plan have a combined effect.
Digestate	Output produced by anaerobic digestion of biodegradable organic materials. It may include liquid or separated fibre after digestion.
Ecological footprint	The ecological footprint methodology calculates the land area needed to feed, provide resource, produce energy and absorb the pollution (and waste) generated by our supply chains.
Effect	Used to describe changes to the natural or social environment as a result of an option.
Energy from waste	Technologies include anaerobic digestion, direct combustion (incineration with energy recovery), use of secondary recovered fuel (an output from mechanical and biological treatment processes), pyrolysis and gasification. Any given technology is more beneficial if heat and electricity can be recovered. The Waste Framework Directive considers that where waste is used principally as a fuel or other means to generate electricity it is a recovery activity provided it complies with certain criteria, which includes exceeding an energy efficiency threshold.
Intermediate Level Waste (ILW)	ILW is waste with radioactivity levels exceeding the upper boundaries for LLW but which does not generate enough heat for this to need to be taken into account in the design of storage or disposal facilities. However like other radioactive waste it still needs to be contained to protect workers from radiation. The major components of ILW are metal items such as nuclear fuel casing and nuclear reactor components, graphite from reactor cores, and sludges from the treatment of radioactive liquid effluents <sup>73</sup> .

<sup>73</sup> <http://www.nda.gov.uk/ukinventory/glossary/>



Term	Definition
Indicator	A measure of variables over time, often used to measure achievement of objectives.
Fly-tipping	Commonly is used to describe larger amounts of waste left on land than litter. It is usually a pre-meditated act rather than the thoughtless act of littering <sup>74</sup> .
Landspreading	Recovering waste by spreading on land primarily for agricultural benefit <sup>75</sup> . In the UK, potentially suitable waste for landspreading include: waste soil, compost, wood, food waste, sludge, textile waste, waste gypsum, waste lime, blood and gut contents from abattoirs.
Low Level Waste (LLW)	Low Level Waste (LLW) is the lowest activity category of radioactive waste. Overall, the major components of LLW are building rubble, soil and steel items such as framework, pipework and reinforcement from the dismantling and demolition of nuclear reactors and other nuclear facilities and the clean up of nuclear sites <sup>76</sup> .
Mitigation	Measures to prevent, or reduce as fully as possible any significant adverse effects.
Natura 2000	Natura 2000 is the European Union-wide network of protected areas, recognised as 'sites of Community importance' under the EC Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora). The Natura 2000 network includes two types of designated areas: Special Areas of Conservation (SAC) and Special Protection Areas (SPA).
Negative effects	Changes which are unfavourable for an environmental or social receptor. Can sometimes be referred to as 'adverse'.
Permanent effect	An effect which will last at least for the lifetime of the structure (i.e. it is seen as permanent in relation to the human lifetime).
Positive effects	Changes which are favourable for an environmental or social receptor. Can sometimes be referred to as 'beneficial'.
Ramsar site	Ramsar sites are designated under the International Convention on Wetlands of International Importance 1971 especially as Waterfowl Habitat (the Ramsar Convention).
Receptor	An entity that may be affected by direct or indirect changes to an environmental variable.
Scoping	The process of deciding the scope and level of detail of an SA/SEA, including the environmental effects and alternatives which need to be considered, the assessment methods to be used, and the structure and contents of the Environmental Report.
SA objective	A statement of what is intended, specifying the desired direction of change in trends.
Secondary effects	Effects which are not a direct result of the Feasibility Study, but occur away from the original effect or as a result of a complex pathway.
Significant environmental effects	Effects on the environment which are significant in the context of a plan or programme. Criteria for assessing significance are set out in Annex II of the SEA Directive (2001/42/EC).

<sup>74</sup>[http://www.wao.gov.uk/assets/englishdocuments/Environment\\_Agency\\_Wales\\_Waste\\_Management\\_agw\\_2004.pdf](http://www.wao.gov.uk/assets/englishdocuments/Environment_Agency_Wales_Waste_Management_agw_2004.pdf)

<sup>75</sup>[http://www.wao.gov.uk/assets/englishdocuments/Environment\\_Agency\\_Wales\\_Waste\\_Management\\_agw\\_2004.pdf](http://www.wao.gov.uk/assets/englishdocuments/Environment_Agency_Wales_Waste_Management_agw_2004.pdf)

<sup>76</sup><http://www.nda.gov.uk/ukinventory/glossary/>

Term	Definition
Site of Special Scientific Interest (SSSI)	Designated under the Wildlife and Countryside Act 1981, any land considered by Natural England to be of special interest because of any of its flora, fauna, or geological and physiographical features.
Special Area of Conservation (SAC)	Strictly protected site designated under the EC Habitats Directive 92/43/EEC. Article 3 of the Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds).
Special Protection Area (SPA)	Strictly protected site classified in accordance with Article 4 of the EC Directive on the Conservation of Wild Birds (79/409/EEC), also known as the Birds Directive. They are classified for rare and vulnerable birds, listed in Annex I to the Birds Directive, and for regularly occurring migratory species.
Strategic Environmental Assessment (SEA)	Generic term used to describe environmental assessment as applied to policies, plans and programmes. 'SEA' is used to refer to the type of environmental assessment required under the SEA Directive.
Synergistic effects	Effects which interact to produce a total effect greater than the sum of the individual effects, so that the nature of the final impact is different to the nature of the individual effects.
Temporary effects	An effect which only lasts part of the project lifetime.
Waste electrical and electronic equipment (WEEE)	The WEEE Directive defines WEEE as "electrical or electronic equipment which is waste within the meaning of Article 1(a) of Directive 75/442/EEC on waste, including all components, subassemblies and consumables which are part of the product at the time of discarding".

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**APPENDICES**

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**Appendix A – Scoping Report Consultation Responses**



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## **APPENDIX A – SCOPING REPORT CONSULTATION RESPONSES**

Welsh Assembly Government  
Towards Zero Waste: Sector Plans Sustainability Appraisal Scoping  
20 September 2010 – 25 October 2010

## Contents

1. Consultees
2. Summary of comments and responses/actions
3. Full consultation responses as received
4. Minutes of conference call with CCW (28/10/10)

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## 1 Consultees

Ruth Tipping, Environment Agency Wales  
Lucia Susani, Environment Agency (deferred response to EAW)  
Pat Aird, English Heritage  
Richard Kevern and Suzanne Whiting, Cadw  
Alison Brown, CCW (cc Keith Davies, CCW)  
Andrew Canning-Trigg, Natural England

## 2 Summary of comments and responses/actions

Respondent	Comment	Response/Action
Cadw	<p>Cadw is generally content with its content but suggest the following amendments:</p> <p>p.14 Policy/ Plan/ Programme Reviewed UK Insert</p> <ul style="list-style-type: none"> <li>• Ancient Monuments and Archaeological Areas Act 1979</li> <li>• Town and Country Planning Act 1990</li> <li>• Planning (Listed Building and Conservation Areas) Act 1990</li> <li>• Planning (Hazardous Substances) Act 1990</li> </ul> <p>National Delete</p> <ul style="list-style-type: none"> <li>• Welsh Assembly Government (2003) Review of the Historic Environment of Wales: A consultation Document</li> </ul> <p>Insert</p> <ul style="list-style-type: none"> <li>• Welsh Assembly Government (2009) The Welsh Historic Environment Strategic Statement</li> <li>• Welsh Assembly Government (2007) Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process</li> </ul>	Amend PPP review as indicated.
CCW	See attached letter.	Conference Call to discuss and agree actions held 28 October 2010. Please see attached minutes for agreed actions.
English	Whilst this is unlikely to have a major impact on the	Amend PPP references as indicated.

Respondent	Comment	Response/Action
Heritage	<p>HE in England or the sea I am responding to advise you:</p> <ul style="list-style-type: none"> <li>• there is a reference to RSS in Table 2.1 - the RSSs have been abolished</li> <li>• PPS5, the Marine Plan and MPSs, and the NPSs are not referred to</li> <li>• tables 2.2 and 3.1 refer only to the impact in Wales.</li> <li>• in the absence of the RSS, the LDFs of the local authorities along the border would be important, likewise the HERs.</li> </ul>	<p>Review implications following dissolution of the Regional planning documents.</p> <p>Review tables 2.2 and 3.1 to identify whether effects in England should be covered.</p>
Environment Agency	<p>1.0 Introduction:</p> <p>1.1 The Environment Agency is the principal environmental regulator in Wales and England, with a range of responsibilities including the protection of soil, air and water. Within the context of sustainable development, the Environment Agency has a lead role in the integrated protection and enhancement of natural resources, the management of waste, the management of flood risk, water related sports recreation, fisheries and navigation. We share the common vision to contributing to sustainable development and achieving a better quality of life.</p> <p>1.2 The Environment Agency welcomes the opportunity to respond to the consultation on the Strategic Environmental Assessment (SEA) scoping report for the Towards Zero Waste Sector Plans.</p> <p>1.3 We are responding to this consultation in our role as a consultation body identified in 'the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004' (Statutory Instrument No.1656 (W.170)).</p> <p>2.0 Key Messages</p> <p>Whilst we generally support the approach put forward for the SA scoping report, we do have some concerns that relying on baselines and summary sustainability issues from the earlier TZW and Municipal Part 1 sector plan SA/SEA's, particularly where comments made then have not been incorporated, could lead to incorrect or missing data or information being carried forward into the assessment of these sector plans. As an example we made comments with respect to the Water Framework Directive and Fly-tipping which do not seem to have been incorporated and which we are repeating here.</p> <p>We have therefore recommended some changes to help achieve the stated objectives of the SEA, especially to 'consider the environmental implications of the draft programme.'</p> <p>Our key messages are below and our more detailed recommendations and comments on the consultation questions are in Annex 1.</p>	<p>No action</p> <p>No action</p> <p>No action</p> <p>Noted</p> <p>Noted</p>

Respondent	Comment	Response/Action
	<p>We recommend in respect of the proposed SA sustainability objectives:</p> <ol style="list-style-type: none"> <li>1. The main water objective should relate to meeting Water Framework Directive outcomes and not General Quality Assessment.</li> <li>2. The sub-objective of the water objective be reworded to include protection of water “resource” and not just “quality”.</li> <li>3. The landscape sub-objectives should include reference to protecting ecological services, not just connectivity.</li> <li>4. The soils objective be amended to include reference to minimising loss of carbon and maintaining carbon storage capacity.</li> <li>5. A “fly-tipping” sustainability objective should be included.</li> </ol> <p>In line with the above we also recommend specific changes to the environmental information baseline with respect to:</p> <ol style="list-style-type: none"> <li>1. Water Quality and the need to meet the EU Water Framework Directive requirements with respect to quality status of welsh rivers (see detail Annex 1 below).</li> <li>2. Fly-tipping: we recommend inclusion of data on fly-tipping incidents in Wales in the baseline. This can be obtained from the Fly-capture data base (see detailed reason below Annex 1.).</li> <li>3. Baseline Ecosystem Services (ES) data available for Wales and the UK respectively at <a href="http://www.werh.org/nef.php.en">http://www.werh.org/nef.php.en</a> and <a href="http://uknea.unep-wcmc.org">http://uknea.unep-wcmc.org</a> .</li> </ol>	<p>Review and amend</p> <p>Review and amend</p> <p>Review and amend</p> <p>Review Amendment proposed in relation to CCW comments</p> <p>Review and amend</p> <p>Review</p> <p>Review</p> <p>Review</p>
EAW detailed response	<p><b>Consultation Question1:</b> Given the preceding work undertaken for TZW and MSP1, are there any plans, programmes or environmental protection objectives that you consider particularly important for consideration in identifying sustainability objectives for the remaining Sector Plans?</p> <p>As raised in our response to the Draft Municipal Sector Plan Part 1 SA scope, It will be particularly important to consider Water Framework Directive (WFD) environmental protection objectives. The Water Framework Directive sets new and challenging standards for all waters. It focuses on the ecological condition of water bodies and key biological species (including plant and fish life) and not just chemical quality as the General Quality Assessment (GQA) does.</p> <p>The statement in the report “the quality of fresh rivers has been stable at a very high level” (Table 2.2. p16 Summary of baseline review) would appear to be based upon GQA headline statistics. This needs to be replaced by a WFD headline statistic.</p> <p>The objective of the WFD is to achieve Good Status. In Wales only 33% of water bodies currently achieve Good Status under the WFD. Therefore through the SA of the waste sector plans it will be</p>	<p>Noted</p> <p>Amend</p> <p>Noted</p>



Respondent	Comment	Response/Action
	<p>important to ensure that WFD environmental protection objectives can be met.</p> <p>More information can be found on the Agency's website in " See What's In Your Backyard" at :</p> <p><a href="http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&amp;y=355134.0&amp;scale=1&amp;layerGroups=default&amp;ep=map&amp;textonly=off&amp;lang=_e&amp;topic=wfd_rivers">http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&amp;y=355134.0&amp;scale=1&amp;layerGroups=default&amp;ep=map&amp;textonly=off&amp;lang=_e&amp;topic=wfd_rivers</a></p> <p>We also recommended in our response to the Draft Municipal Waste Sector Plan Part 1 SA scope May 2010, inclusion of data on fly-tipping incidents in Wales in the baseline. This can be obtained from the Fly-capture data base. A sustainability objective on fly-tipping/illegal waste disposal should be included in the SA of the sector plans. This would enable the plans to be assessed against this objective to ensure they prevent or minimise the drivers or opportunities for illegal waste disposal.</p> <p>We are disappointed that these two points made at the Draft Municipal Sector Plan part 1 SA scope, do not appear to have been picked up in this scoping for the SA of the remaining sector plans.</p> <p>Another key environmental protection objective relates to carbon storage of soils. Whilst we welcome the sustainability issues identified under soils in the key sustainability issues table p21, we are concerned that it does not refer to the carbon storage capacity of soils and the need to manage this better in the context of climate change. Protection of soil carbon should be a sub-objective in the Soil Objective, Table 4.1 p 23.</p> <p><b>Consultation Question 2:</b> Are there any additional plans, programmes or environmental protection objectives that should be taken into account for this strategic-level environmental assessment?</p> <p>On P13-15 section 2. Setting the context and baseline, Table 2.1 – List of PPP reviewed in the MSP1 SA, reference should also be made to the:</p> <p>EU:</p> <ul style="list-style-type: none"> <li>• EU Water Framework Directive 2000/60/EC <a href="http://ec.europa.eu/environment/water/water-framework/index_en.html">http://ec.europa.eu/environment/water/water-framework/index_en.html</a></li> </ul> <p>The Directive sets new and challenging standards for all waters, it requires member states to aim to achieve good chemical and ecological status in inland and coastal waters (i.e. rivers, lakes, estuaries, coastal and ground waters) by 2015. As discussed above, the Water Framework Directive needs to be utilised to set the water sustainability</p>	<p>Or at least ensure no detriment?</p> <p>Check</p> <p>Apply to MSP, C&amp;D possibly also to Retail and C&amp;I possibly also to Agriculture</p> <p>N/A – this was explained in the scoping report and will be picked up in subsequent SA Reports.</p> <p>Objective has already been revised and expanded in response to similar points raised by CCW</p> <p>Check and add</p> <p>Check and add</p>

Respondent	Comment	Response/Action
	<p>objectives for the SA and not GQA.</p> <ul style="list-style-type: none"> <li>EU (2003) CAP Single Payment scheme Cross Compliance Regulation (Annex III Council Reg No.1782/2003) (Link to soils management and agricultural waste sector plan).</li> <li>2008/50/EC Directive on ambient air and cleaner air for Europe. This merges most legislation into one Directive, including 96/62/EC (which is already in the list) and the 1st, 2nd and 3rd Daughter Directives (1999/30/EC, 2000/69/EC, 2002/3/EC), but not the 4th Daughter Directive (2004/107/EC).</li> <li>Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation EC 1907/2006. REACH regulates the use of chemicals in products and requires registration and assessment of their potential environmental and health impacts. The registration requirements may impact on the re-use of some waste streams</li> </ul> <p>UK.</p> <ul style="list-style-type: none"> <li>The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003</li> </ul> <p>Regulation 17 states that each public body has a duty in exercising their functions so far as affecting a river basin district, to have regard to River Basin Management Plans (RBMPs). The RBMPs contain the status and objectives for all water bodies, and the actions that will be taken to achieve these outcomes.</p> <ul style="list-style-type: none"> <li>DEFRAWAG Environmental Permitting (England and Wales) Regulations 2010.</li> </ul> <p>National.</p> <ul style="list-style-type: none"> <li>WAGs Climate Change Strategy for Wales (Launched 7th Oct 2010)</li> <li>WAG (2007-2013) Rural Development Plan Programme (2007-2013)</li> <li>WAG (2009) Farming Food and Countryside: Building a Secure Future Strategy.</li> <li>WAG (2010) Food for Wales, Food from Wales 2010-2020 (currently subject to consultation)</li> <li>Planning Policy Wales – overarching policy consolidated in 2010 to incorporate MIPPS and covers all aspects of planning policy for Wales, except mineral, which we also believe should be considered in this SEA and are referenced below</li> <li>TAN 15 –Development and Flood Risk (2004)</li> <li>TAN 6 Planning for Sustainable Rural</li> </ul>	<p>Check and add</p> <p>Check and amend</p> <p>Review</p> <p>Check and add</p> <p>Add</p> <p>Add</p> <p>Review and add</p> <p>Review and add</p> <p>Review and add</p> <p>Review and add</p> <p>Check and add</p> <p>Check and add</p>

Respondent	Comment	Response/Action
	<p>Communities (includes sustainable agriculture and rural services) July 2010.</p> <ul style="list-style-type: none"> <li>• TAN 8 Renewable Energy (2005)</li> <li>• TAN 21 Waste (2001) this includes development of waste facilities and flood risk and implications for water quality</li> <li>• TAN 18 planning for transport infrastructure (2007) we have referenced because we are aware transport has been raised as an issue with energy from waste sites.</li> <li>• We note there is no reference to the Minerals Planning Policy Wales 2001; MTAN 1 Aggregates; MTAN2 Coal – we believe these may have some relevance to waste sector plans.</li> <li>• In Wales, the first RBMPs were approved by the Minister in December 2009. See: <a href="http://wales.gov.uk/publications/accessinfo/dmnewhomepage/environmentdrs2/environmentdrs2009/welsrbmps/?lang=en">http://wales.gov.uk/publications/accessinfo/dmnewhomepage/environmentdrs2/environmentdrs2009/welsrbmps/?lang=en</a></li> </ul> <p>Wales' 3 RBMPs for Western Wales; Dee; and Severn can be found at: <a href="http://www.environment-agency.gov.uk/research/planning/33106.aspx">http://www.environment-agency.gov.uk/research/planning/33106.aspx</a></p> <p>Other plans and programme that may be relevant:</p> <ul style="list-style-type: none"> <li>• WAG Economic Renewal Programme: A New Direction 2010 – particularly in relation to proposal for an infrastructure strategy for Wales, but more generally to ensure the waste sector plans support the new direction fro economic renewal.</li> <li>• UK Shared Framework on SD</li> <li>• Whilst we welcome reference to the Environment Agency's Corporate Strategy, Environment Agency Wales has its own Corporate Plan -Working Together for a Better Wales (2010-15).</li> </ul> <p>Documents currently being developed or imminently to be launched that should also be considered:</p> <ul style="list-style-type: none"> <li>• Natural Environment Framework (currently out to consultation)</li> <li>• WAG Welsh Soils Action Plan (consultation closed but final document not yet published). <a href="http://wales.gov.uk/consultations/environmentandcontryside/130308welshsoilsactionplan/?jsessionid=sQp3MZKBD2p7m61pdt8Z07rJhfN2nXWSFTp15JyMv1W5QJjVtS23!-42672990?lang=en">http://wales.gov.uk/consultations/environmentandcontryside/130308welshsoilsactionplan/?jsessionid=sQp3MZKBD2p7m61pdt8Z07rJhfN2nXWSFTp15JyMv1W5QJjVtS23!-42672990?lang=en</a></li> </ul> <p>It will be important that the sector plans are assessed against WAG's draft Soils Action Plan and that they will enable, where appropriate, the CAP Health Check Challenge agenda to be met, particularly climate change outcomes relating to soil carbon management as well as water quality and quantity outcomes and wont prevent farmers</p>	<p>Check and add</p> <p>Check and add</p> <p>Check and add</p> <p>Check and add</p> <p>Review and add</p> <p>Review and add</p> <p>Review and add</p> <p>Review and add</p> <p>Amend</p> <p>Review and add</p> <p>Check and add</p> <p>Add Plan</p>

Respondent	Comment	Response/Action
	<p>accessing schemes such as Glastir.</p> <p>Points to note about Plans and Programme listed</p> <ul style="list-style-type: none"> <li>• Creating Sustainable Places – DE&amp;T – revised/updated 2010</li> <li>• Whilst plans may still be in existence and relevant to assessing the Wales Sector Plans at the England Wales borders for the time being, it must be recognised that the English spatial planning regimes and regional strategies have been abolished under the new coalition government, and a new planning framework is proposed.</li> </ul> <p>Additional comments:</p> <p><u>Agriculture Sector Plan.</u></p> <p>It is evident that the Agriculture sector plan looks at the Wastes produced on the farm but a major factor that should be covered in this plan is in relation to soil protection. This is referred to in table 3.1 in the soil section. It is important to reflect in every sector plan the need to reduce, reuse and recycle waste but this is particularly true in relation to soil protection/land quality in the Agricultural plan.</p> <p>The reduction in waste to landfill means that "wastes" are being diverted to other end disposal. The main ones being Incineration or treatment by Anaerobic Digestion/ Composting, but in every case (including the use of the ash element from use of biomass as a fuel), the final disposal/use of the residues is as a fertiliser/soil conditioner on land, be that Agricultural or development land. The Agricultural plan should have a strong emphasis towards the soil protection angle rather than just concentrating on the waste types produced.</p> <p>Ecological Footprint</p> <p>Where reference is made in the document towards reducing the Ecological Footprint (and constituent Carbon Footprint - pages 22/27), this should also include assessment of and reduction of water footprint.</p> <p><b>Consultation question 3.</b> Building on previous consultations, is there any additional information that could help supplement the baseline data? Any further information relating to the baseline indicators and trends over time would be very useful.</p> <p>As discussed above:</p> <ul style="list-style-type: none"> <li>• WFD data/ River Basin Management Plans</li> <li>• Fly-tipping data – fly capture (<a href="http://www.environment-agency.gov.uk/research/library/data/41333.aspx">http://www.environment-agency.gov.uk/research/library/data/41333.aspx</a>)</li> <li>• The Welsh Index of Multiple Deprivation</li> </ul>	<p>Amend</p> <p>Noted</p> <p>Noted</p> <p>Noted</p> <p>Review</p> <p>Review</p> <p>Review</p>

Respondent	Comment	Response/Action
	<p>WIMD could be used in the baseline – the physical domain of the index includes environmental criteria. This would help support the social data for the sustainability assessment and help assess how the plans will help address the issues causing deprivation.</p> <p><b>Consultation question 4.</b> Is there any important information that has not been addressed in view of the SA/SEA scope?</p> <p>As discussed above:</p> <p>It will be important to assess your plans against WFD outcomes and not just GQA, since Wales will be reporting in future on WFD status of watercourses and not just chemical quality.</p> <p>We also believe that data, information and a sustainability objective on Fly-tipping in Wales, are important information missing from the SA/SEA scope.</p> <p>Whilst we understand there are some specific plans or programmes being developed by WAG to deal specifically with Fly-tipping, we believe that a waste strategy and its sector plans should set the overarching framework in which these specific programmes can operate. The waste strategy and its sector plans should be assessed against a fly-tipping/illegal waste disposal sustainability objective to ensure they do not create reason or opportunity for waste to be fly-tipped in the first place.</p> <p>Fly-tipping costs Wales £3m a year in clean up alone (not true costs) - so any strategy to deal with waste should take account of how those policies may lead to further fly-tipping (or reduce it) i.e. take a holistic approach.</p> <p>Please see below some examples of where we believe the sector plans could help address fly-tipping:</p> <p><u>Markets Sector Plan</u></p> <p>Probable key areas of sector plan of relevance:</p> <ul style="list-style-type: none"> <li>- Waste Collection &amp; Infrastructure</li> <li>- Treating waste and using it as a resource</li> </ul> <p>Factors that may help alleviate fly-tipping:</p> <ul style="list-style-type: none"> <li>- Turning waste into a resource so that people don't need or want to fly-tip</li> <li>- Encouraging builders to use recycled materials instead of raw materials – maybe a reward scheme?</li> <li>- Education to ensure waste is segregated properly and managed</li> </ul> <p><u>Construction and Demolition Sector Plan</u></p> <p>Probable key areas of sector plan of relevance:</p>	<p>Review</p> <p>Review</p> <p>Review and add</p> <p>Review</p> <p>Noted</p> <p>Noted</p>

Respondent	Comment	Response/Action
	<p>- Small scale construction and demolition waste collection (trade waste sites)            - Difficult wastes such as plasterboard and asbestos            - Small traders / Builders – Housing repairs</p> <p>Factors that may help alleviate fly-tipping:            - Making it easier to dispose of small quantities of waste via trade waste sites            - Having options for traders to dispose of difficult wastes            - Encourage builders to deal with wastes generated on household jobs rather than simply leave with the householder</p> <p>We recommend that In Table 3.1 key sustainability issues (Material Assets) or in 5.6.2 (<u>Commercial &amp; Industrial Sector Plan</u>), some reference is made to dealing with very low level or low level radioactive waste (VLLW/LLW), perhaps where hazardous waste is mentioned. Landfill is a route for such wastes, but clearly as we move to zero waste to landfill, other routes of disposal will be needed (similar to hazardous waste).</p> <p>If the sub-objective “to increase infrastructural capacity and facilities for sustainable waste management”, under the Waste Management sustainability objective, will not consider the impacts of the facilities provided for such waste, then a separate sustainability sub-objective may be needed to assess the environmental impact of managing these.</p> <p><b>Consultation question 5.</b> Is the range of environmental problems, issues and receptors covered appropriate?</p> <ul style="list-style-type: none"> <li>• Using WFD data it is clear we have issues in Wales with respect to water quality (ecological) which need addressing. This is contrary to the purely chemical (GQA) analysis. It is therefore important that the water quality assessments undertaken as part of this SA/SEA assessment are based on WFD and not GQA criteria.</li> <li>• We also believe Fly-Tipping, soil carbon and assessment of the management of VLLW and LLW and hazardous waste should also be included.</li> </ul> <p><b>Consultation question 6.</b> Are there any major plans or projects that should be included in the assessment of cumulative effects?</p> <p>We recommend the website of the Infrastructure Planning Committee is consulted for any Nationally Significant Infrastructure Projects, e.g. energy from waste plants etc. that are not being planned for at local or national level in Wales.</p> <p><b>Consultation question 7.</b> Are there any changes</p>	<p>Noted and reviewed as per comments on consultation question 4</p> <p>Review</p>

Respondent	Comment	Response/Action
	<p>that should be made to the proposed SA/SEA objectives; including any consolidation of the objectives?</p> <p>See comments above in Q 1 and 5, and</p> <p>With respect to Table 4.1:</p> <ul style="list-style-type: none"> <li>• Under Water, The main objective should refer to 'water environment' and not water resource, since it needs to encompass both water resources and water quality. The sub-objectives therefore need to ensure the sector plans are assessed against impacts on the quality and quantity of the water environment. The current sub- objective "to protect and enhance groundwater and river quality in the inland, coastal and maritime environments" is not correct, since you cannot enhance river quality in the maritime environment. We would suggest either one sub-objective covering protection and enhancement of both water quality and quantity in the relevant water environments, or two separate sub objectives, ones to assess against impacts on water quality and one on sustainable water resource management.</li> <li>• Under Climate Change, we suggest inclusion of the word "efficiency" before "use" in the 3rd bullet about energy.</li> </ul> <p><b>Consultation question 8.</b> Are there any other SA/SEA objectives, assessment criteria or indicators that should be included?</p> <p>See specific points raised above re fly-tipping and soils.</p> <p><b>Consultation question 9.</b> Any further suggestions regarding the scope of the SA/SEA and its proposed assessment of the Sector Plans?</p> <p>With the development of the Natural Environment Framework (NEF) WAG are moving towards an ecosystem services approach to managing the environment. It will be necessary in future to be able to assess plans and programmes against their impact on ecosystem services. This will put the true value of the natural environment at the heart of Government and enabling people to appreciate, protect and enhance their local environment. Both are vital steps in securing a sustainable future for people and wildlife.</p> <p>Integrating ecosystem services and their societal values into SEA can help demonstrate the social, economic and financial reasons for environmentally sustainable policies. Considering a broad range of ecosystem services helps ensure an SEA includes a comprehensive and balanced assessment of environmental impacts and considers the trade-offs of alternative options.</p>	<p>Amend</p> <p>Amend</p> <p>Review</p> <p>Review</p>

Respondent	Comment	Response/Action
	<p>Baseline data on ecosystem services in Wales are now being collated by the UK National Ecosystems Assessment and will be available on <a href="http://www.werh.org/nef.php.en">http://www.werh.org/nef.php.en</a></p> <p>Integrating ecosystem services into SEAs can be done at various levels of intensity, either including general appreciation and awareness of impacts or detailed valuations. Whatever the intensity, however, the analysis starts at the screening stage, identifying likely ecosystem services impacts of the policy or plan, followed by the scoping stage to show the existing ecosystem services status.</p> <p>Assessing the baseline should include identifying the future ecosystem service provision without the plan/policy in place. The assessment of the alternatives proposed also looks at their impacts on ecosystem services and any impacts on the ecosystem services requiring mitigation. The impacts of mitigation on ES should then be assessed.</p> <p>Whilst relatively new, various tools are available to undertake ecosystem service assessments.</p> <p>Please see information on NEF and Ecosystems Services baseline and briefing guide at <a href="http://www.werh.org/nef.php.en">http://www.werh.org/nef.php.en</a> and the national UK Ecosystem assessment at <a href="http://uknea.unep-wcmc.org">http://uknea.unep-wcmc.org</a></p>	<p>Review and add</p> <p>Noted</p> <p>Review and add</p> <p>Check</p>
Natural England	<p>Whilst Natural England commented on the strategic level MSP1 document, it is unlikely that we would seek to influence the preparation of individual sector waste plans and we have no additional information to provide to you at present. We would expect to receive the formal consultation documents as a statutory consultee for SEA and will make a more detailed appraisal of whether we will comment on the scoping reports for each SEA, at that time.</p>	Noted. No action required.





### **3 Full consultation responses**



**4 Minutes of conference call with CCW (28/10/10)**

**Date:** 28 October 2010

**Venue:** Conference Call

**Contract title:** WAG Waste Sector Plans SA/HIA/HRA

**Contract No:** FSE3511003A

**Purpose:** Discussion with CCW about concerns raised in consultation responses

**Present:**

Delyth Toghill	Parsons Brinckerhoff
James Colcombe	Parsons Brinckerhoff
Andy Rees	Welsh Assembly Government
Jennet Holmes	Welsh Assembly Government
Alison Brown	Countryside Council for Wales

**Apologies:** Charles Morrison Parsons Brinckerhoff

Item		Action and date required
1	<p><b>INTRODUCTIONS &amp; APOLOGIES</b></p> <p>DT led the call in introductions and apologies.</p>	
2	<p><b>SUMMARY OF TZW WORK AND CURRENT STATUS</b></p> <p>JH provided a brief summary of the status of Towards Zero Waste and the current Sector Plans.</p>	
3	<p><b>IDENTIFICATION OF CCW'S MAIN CONCERNS</b></p> <p>AB highlighted the main concerns raised by CCW. These comprise:</p> <ol style="list-style-type: none"> <li>1. Actions from previous consultation responses               <ol style="list-style-type: none"> <li>1.1. The possible changes raised by CCW in previous responses in relation to Objectives and Indicators do not appear to have been taken on board.</li> <li>1.2. CCW were not clear on whether comments made on the recent MSP1 consultation were going to taken on board</li> </ol> </li> <li>2. In relation to the approach, particularly with regard to objectives and indicators, CCW are concerned that the objectives are too general to enable proper assessment of the issues. AR explained that the intention from the initial SA of TZW and through to the sector plans was to have a generic SA framework that could be applied to all of these high level plans which focus on common waste elements (i.e. the priority waste materials). DT &amp; JC explained that having a generic framework should not be an obstacle to identifying specific issues and that there is scope for these to be picked up through the assessment without re-drafting the objective and sub-objectives for each plan. It was agreed that the issues specific to each plan will be clearly identified in the relevant sector plan, enabling their full</li> </ol>	JH

Item	Action and date required
<p>consideration through the SA process.            AB confirmed that CCW did not have any particular issues with the generic approach, but wanted to have confidence that the plan-specific issues would be picked up.            The discussion identified a need to define what wastes are to be included in the agriculture/retail sectors plans and where the lines are to be drawn. Specifically a need to identify where wastes from intensive pig and chicken systems would be covered.</p>	DT
<p>3. Baseline: CCW raised concerns that the baseline is being 'recycled' from TZW. The baseline must be kept up to date and changes fed through the SA as needed. CCW also have concerns about some of the assertions being made in the scoping report. CCW suggested some other SA/SEA reports with complementary baseline information (Nuclear work done by NDA and recent Terrestrial Oil &amp; Gas work) DT agreed the baseline must be aligned with recent baseline information and will review it using other, more contemporary sources. All baseline sources will be clearly referenced to enable the reader to trace the provenance of the data.</p>	DT
<p>4. Over-compartmentalisation of the SA. CCW are concerned about the potential over-compartmentalisation of the SA and that this may risk interrelated aspects being over-looked. In the baseline review PB will check that relationships are identified in the baseline and will ensure appropriate coverage of inter-related effects in the assessment. In discussion a number of potential cumulative effects relating to Shoreline Management Plans, Catchment flood risk management strategies and Water Resources Management Plans were flagged. These will be considered.            Discussion also identified a potential gap in the coverage of historic landfill and managed realignment; and a related issue with the siting of new waste facilities in relation to proposed managed realignment work on the Welsh Coast. AR agreed to follow this up within WAG.</p>	DT
<p>5. Habitats Regulations Assessment            Fundamentally CCW are concerned that the approach as it stands is not compliant with the Habitats Regulations. The sector plans must provide robust caveats on the management of effects to facilitate the HRA process. (This can be informed by recommendations from the HRA.) Examples can be found in the Wales Transport Plan prepared by Len Wyatt. Deferring further assessment to the project level is not acceptable without such caveats.</p>	CM & JH
<p><b>4 RUN THROUGH OF CCW SCOPING RESPONSE (1 OCTOBER 2010)</b></p>	
<p>A brief run though of the response was undertaken to ensure all issues had been addressed to the satisfaction of all on the call. The references refer to the CCW scoping response.</p>	
<p>Page 1; paragraph 4: comment regarding inclusion of social &amp; community</p>	

Item	Action and date required
<p>data – CCW was unclear on its relevance to a waste plan. DT and AR explained that the inclusion is to provide context in terms of the distribution of social and economic deprivation in Wales and that this is important in relation to the wider sustainability goals throughout WAG, but is also of particular relevance to waste planning (there is often a coincidence of waste facilities with deprived areas, which may be linked to past industrial legacy, but there is also a perception that these areas are ‘easy targets’ for new industrial development). DT to ensure that appropriate content is included to allow the reader to receive these data in context.</p>	<i>DT</i>
<p>Page 2; paragraph 2. CCW queried the apparent economic emphasis in the selection of alternatives. AR explained that there are very strong environmental drivers behind all of the options – it will be made clearer in the Sector plans and the SA that this is the case.</p>	<i>JH &amp; DT</i>
<p>1.1.17 DMT explained that PB’s approach is always to engage with CCW on HRA at the earliest opportunity and maintain that contact. CM will contact AB in due course</p>	<i>CM</i>
<p>1.24 JH will send AB a copy of the TZW Post Adoption Statement</p>	<i>JH</i>
<p>Fig 1.1 – the relevance of and relationship between the Regional Waste Plans (RWP) and TZW will be set out in the CIMS plan. It was also noted that the RWP will be subject to review alongside a planned review of TAN21.</p>	<i>JH</i>
<p>1.2.6. It was agreed that caveats will be included in the relevant sector plans to make clear the position with regard to the release of funding and EIA. (i.e. no funding will be released without appropriate approval and EIA).</p>	<i>JH &amp; DT</i>
<p>Table 3.1: Soil. CCW is concerned that the full range of soil function are not being considered (e.g. flood attenuation, carbon storage). DT agreed that this needs to be reflected. In discussion, AB also highlighted that there seemed to be some issues developing around the perception of ‘contamination’ of foodstuffs as a result of the spread of composting and AD products to agricultural land. AR confirmed that this is known and WAG are actively seeking to address this through education and engagement programmes, which include large food retailers.</p>	<i>DT</i>
<p>Table 4.1:</p>	
<p>It was agreed that the Soil sub objectives would be amended to make retention of natural soil functions more explicit as an objective.</p>	
<p>It was agreed that the Water sub-objectives would be amended to cover protection of water quantity as well as quality.</p>	
<p>It was agreed that the noise sub-objective would be expanded to take into account wildlife and landscape effects.</p>	<i>DT</i>



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**Item**

**Action  
and date  
required**

5.8.5 It was agreed that WAG would ensure these elements and those raised in earlier discussion (under agenda item 2) would be addressed as in the appropriate Sector Plans.

*AR & JH*

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**DISTRIBUTION**

All participants and apologies; Aida Khalil, Peter Walsh.

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Approved by:

Date:

Issued by:

Date:

## 11.4

### Appendix B – Policies, Plans & Programmes

**Table 2: List of PPP Reviewed in TZW SA**

<b>Policy/Plan/Programme Reviewed</b>
<b>SUSTAINABLE DEVELOPMENT</b>
World Summit on Sustainable Development - Earth Summit leading to the Johannesburg Plan of Implementation (Johannesburg, 2002)
EU Sustainable Development Strategy (2006)
One future: different paths - UK Shared Framework for Sustainable Development (2005)
Securing the Future - UK Government Sustainable Development Strategy (2005)
One Wales: One Planet - The Sustainable Development Scheme of the Welsh Assembly Government (May 2009)
Starting to Live Differently - The Wales Sustainable Development Scheme and Sustainable Development Action Plan 2004 - 2007
Environment Strategy for Wales (2006)
Welsh Assembly Government Integration Tool (2002)
People, Places, Futures - The Wales Spatial Plan 2004 and the Wales Spatial Plan 2008 Up-date
One Wales: Connecting the Nation - the Wales Transport Strategy (2008)
Planning Policy Wales (2002)
Creating Sustainable Places (2005)
Making the Connections: Delivering better services in Wales (2004) and Delivering the Connections: From vision to action (2005)
Beyond Boundaries: Citizen-Centred Local Services for Wales (2006)
<b>ECONOMY</b>
EU European Employment Strategy - EES (2005)
A Winning Wales - The National Economic Development Strategy of the Welsh Assembly Government (2001 and 2004)
Wales: A Vibrant Economy (2005) - the Welsh Assembly Government's Strategic Framework for Economic Development
Green Jobs for Wales (2008/2009)
DCELLS assorted literature
Valuing our Environment: Economic Impact of the Environment of Wales (2003)
Heads - We Win... A Strategic Framework for the Heads of the Valleys (2005)
Enter the Dragon Economy - SE Wales Development Strategy (Capital Wales)
A Government Action Plan for Small Business
Business Crime Reduction Strategy Wales (2005 - 2008)
Social Enterprise Strategy for Wales (2006)
SE Action Plan for Wales up-dated version 2009
The Third Dimension: A Strategic Action Plan for the Voluntary Sector (2007)

<b>Policy/Plan/Programme Reviewed</b>
<b>POPULATION, HEALTH AND WELL-BEING</b>
EU Directive 2002/49/EC relating to the assessment and management of environmental noise - The Environmental Noise Directive (EU, 2002)
TAN 11 - Noise (1997)
Health, Social Care and Well-being Strategies Policy Guidance (2003)
Community First Guidance (2007)
Well Being in Wales Consultation Document (2002)
The Learning Country 2: Delivering the Promise (2006)
Race Equality Scheme 2005 - 2008
Iaith Pawb: A National Action Plan for a Bilingual Wales (2003)
The Strategy for Older People in Wales (2003)
Road Safety Strategy for Wales (2003)
Health Strategy for Wales
HSE Literature (assorted)
The Quality of Food Strategy for Wales (2007)
<b>CLIMATIC FACTORS</b>
Stern Review on the economics of climate change (2006)
Kyoto Protocol on Climate Change (UN, 1997)
EU Directive to promote Electricity from Renewable Energy (2001/77/EEC)
EU Emissions Trading Scheme (2005)
Climate Change: the UK Programme (2001)
Our Energy Future - 'Creating a Low Carbon Economy' - UK white paper on energy (2003)
Climate Change - The UK Programme: Tomorrow's Climate Today Challenge (DEFRA 2006)
One Wales - A progressive agenda for the government of Wales: An agreement between the Labour and Plain Cymru Groups in the National Assembly (2007)
Climate Change Strategy - High Level Policy Statement Consultation (Welsh Assembly Government, 2009)
The Environment Strategy for Wales
One Wales: Connecting the Nation - The Wales Transport Strategy (2008)
Wales Changing Climate, Challenging Choices: The impacts of climate change in Wales from 2000 to 2080
Energy Wales - Route Map: Consultation Document (2005)
Climate Change Wales - Learning to Live Differently
Consultation package on planning and climate change (Welsh Assembly Government, 2006)
The Bioenergy Action Plan for Wales (2009)
<b>MATERIAL ASSETS</b>
Waste Framework Directive 2006/12/EC (as amended by Directive 2008/98/EC)
EU Waste to Landfill Directive (99/31/EC)



<b>Policy/Plan/Programme Reviewed</b>
EU Directive on the Incineration of Waste (2000/76/EC)
Waste Electrical and Electronic Equipment (WEEE) Directive 2006
End of Life Vehicles Directive (2000/53/EC)
Taking sustainable use of resources forward: A Thematic Strategy on the prevention and recycling of waste (COM (2005) 666)
DEFRA Waste Strategy for England 2007 and Annual Progress Report 2007/08
Waste Management (England and Wales) Regulations 2006
The Landfill (England and Wales) Regulations 2002
Clean Neighbourhoods and Environment Act 2005
Planning Policy Wales 2002
TAN 8 - Renewable Energy (2005)
TAN 21 - Waste (2001)
North Wales Regional Waste Plan (2003)
North Wales Regional Waste Plan 1st Review Recommended Draft (2008)
South East Wales Regional Waste Plan (2004)
South East Wales Regional Waste Group: The Regional Waste Plan 1st Review - Content and Approach (2006)
South West Wales Regional Waste Plan (2003)
South West Wales Regional Waste Plan, 1st Review (Recommended Draft) 2008
European Commission White Paper on the European Transport Policy (EC, 2001)
One Wales: Connecting the Nation, the Wales Transport Strategy 2008
Wales Freight Strategy Consultation Draft (2007)
TAB 18 - Transport (2007)
Johannesburg Renewable Energy Coalition - JREC (2002)
UK Fuel Poverty Strategy (2001)
Mineral Planning Policy Wales (2000)
Local Vision - Statutory Guidance from the Welsh Assembly Government on Developing and Delivering Community Strategies (2008)
Community Strategy Advice Note on the Environment
Community Strategy Advice Note on Climate Change
Identifying Areas of Search for Regional Waste Facilities Across Wales 2007
<b>AIR QUALITY</b>
Clean Air for Europe (CAFÉ) (2001)
Convention on Long Range Trans-boundary Air Pollution (1979)
The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (DEFRA 2007)
Air Pollution in Wales (2006)
<b>BIODIVERSITY AND GEODIVERSITY</b>
Ramsar Convention of wetlands of international importance especially as waterfowl habitat (1971)

<b>Policy/Plan/Programme Reviewed</b>
Bonn Convention on the Conservation of Migratory Species of Wild Animals (1979)
Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)
The Convention on Biological Diversity, Rio de Janeiro (1992)
EU Directive on the Conservation of Wild Birds (79/409/EEC)
EU Habitats Directive (92/43/EEC)
EU Biodiversity Strategy (EU, 1998)
Natural Environment and Rural Communities Act (UK) (2006)
Wildlife and Countryside Act 1981 (as amended ) (UK)
UK Biodiversity Action Plan (Defra, 1994)
Conservation (Natural Habitats) Regulations 1994
Conservation (Natural Habitats, &c) (Amendment) Regulations 2007
CCW Priority Habitats of Wales (2003)
TAN 5 - Nature Conservation and Planning (1996)
Consultation on Draft Revised Technical Advice Note 5 'Nature Conservation and Planning' (2006)
Wales Biodiversity Framework (Wales Biodiversity Partnership, 2007)
Tir Gofal Agri-Environment Scheme (1999)
Woodland for Wales (Welsh Assembly Government, 2001)
Better Woodlands for a Better Wales (FCW, 2005)
<b>WATER AND FLOOD RISK</b>
Directive on the assessment and management of flood risks (2007/60/EC)
EU Nitrates Directive (91/676/EEC)
EU Directive Establishing a Framework for the Community Action in the Field of Water Policy (2000/60/EC) - The Water Framework Directive
EU Freshwater Directive 78/659/EEC
Water resources for the future: a water resources strategy for England and Wales (2001)
Water for People and the Environment - developing a water resources strategy for England and Wales (2007)
A Better Environment, Healthier Fisheries: Better Fisheries for our nations 2006 - 2011 (EA, 2006)
TAN 15 - Development and Flood Risk (2004)
Dee River Basin District - Significant Water Management Issues *Environment Agency, 2007)
Severn River Basin District Significant Water Management Issues (Environment Agency, 2007)
Western Wales River Basin District Significant Water Management Issues (Environment Agency, 2007)
Shoreline Management Plans and Flood Risk Management Plans – Various produced by Environmental Agency and Coastal Partnerships (for SMPs).
<b>CULTURAL HERITAGE</b>
UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)
The Charter for the Conservation of Historic Towns and Urban Areas (1987)

<b>Policy/Plan/Programme Reviewed</b>
Charter for the Protection of the Management of Archaeological Heritage (1990)
The Florence Charter (1981)
A Culture Strategy for Wales (2002)
Welsh Office Circular 60/96 Planning and the historic environment: archaeology
Welsh Office Circular 61/96 Planning and the historic environment: historic buildings
Traffic Management in Historic Areas (CADW, 2003)
<b>LANDSCAPE AND SOIL RESOURCES</b>
World Heritage Convention (UNESCO 1972)
European Landscape Convention (Council of Europe, 2000)
EU Thematic Strategy on Soil Protection 2006
Countryside and Rights of Way Act (CroW) (ODPM, 2000)
Working Together for Wales (Welsh Assembly Government, 2007)
National Park Management Plans Guidance (CCW, 2007)
Draft Welsh Soils Action Plan (2007)
TAN 6 Agricultural and Rural Development (June 2000)

**Table 3: Review of relevant policies, plans, programmes and environmental protection objectives for Waste Prevention Plan following October 2010 Scoping response**

<b>Policy, plan, programme or legislation</b>	<b>Objective or requirements of the policy, plan, programme or legislation</b>	<b>How the objectives or requirements might be taken on board</b>
EU (2003) CAP Single Payment Scheme Cross Compliance Regulation (Annex III Council Reg No.73/2009)	<p>New horizontal regulation dealing with the common provisions applicable to direct aid schemes for European farmers.</p> <p>The 2003 reform decoupled the majority of direct aid and transferred it to the new single payment scheme. Regulation (EC) No 1782/2003 brought together in a single document the SPS and other specific aid schemes, still linked to the area cultivated or to production. This regulation was replaced by Regulation (EC) No 73/2009 following the 2009 CAP 'Health Check'.</p>	Link to soils management and agricultural waste sector plan
EC Directive 2008/50/EC on Ambient Air Quality and Cleaner Air, 2008	<p>This Directive includes the following key elements:</p> <ul style="list-style-type: none"> <li>• The merging of most of existing legislation into a single directive (except for the fourth daughter directive) with no change to existing air quality objectives*</li> <li>• New air quality objectives for PM2.5 (fine particles) including the limit value and exposure related objectives – exposure concentration</li> </ul>	The waste sector plans should support this Directive by ensuring the air pollution in Wales is managed and possible steps are taken to alleviate air quality problems.

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
	<p>obligation and exposure reduction target</p> <ul style="list-style-type: none"> <li>• The possibility to discount natural sources of pollution when assessing compliance against limit values</li> <li>• The possibility for time extensions of three years (PM10) or up to five years (NO2, benzene) for complying with limit values, based on conditions and the assessment by the European Commission.</li> </ul> <p>* Framework Directive 96/62/EC, 1-3 daughter Directives 1999/30/EC, 2000/69/EC, 2002/3/EC, and Decision on Exchange of Information 97/101/EC.</p>	
<p>EU (2006) Registration, Evaluation, Authorisation and Restriction of Chemicals. Regulation (EC) 1907/2006</p>	<p>REACH regulates the use of chemicals in products and requires registration and assessment of their potential environmental and health impacts.</p> <p>The aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. At the same time, innovative capability and competitiveness of the EU chemicals industry should be enhanced. The benefits of the REACH system will come gradually, as more and more substances are phased into REACH.</p>	<p>The registration requirements may impact on the re-use of some waste streams</p>
<p>Ancient Monuments and Archaeological Areas Act 1979</p>	<p>The AMAAA was a law passed by the government to protect the archaeological heritage of Great Britain. Section 61(12) defines sites that warrant protection due to their being of national importance as 'ancient monuments'. These can be either Scheduled Ancient Monuments or "any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attaching to it".</p> <p>The Act (in Part II) also introduced the concept of Areas of Archaeological Importance, city centres of historic significance which receive limited further protection by forcing developers to permit archaeological access prior to building work starting.</p>	<p>The waste sector plans should seek to protect and enhance the historic environment in Wales including designated historic assets while developing waste infrastructure</p>

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
Town and Country Planning Act 1990	<p>The Town and Country Planning Act 1990 is an act of the British Parliament regulating the development of land in England and Wales.</p> <p>This is the land use planning system governments use to balance economic development and environmental quality. The English and Welsh governments are responsible for town and country planning devolved to the England Parliament and the Welsh Assembly.</p>	The waste sector plans should consider the land use planning system in Wales while developing waste infrastructure and waste management initiatives
Planning (Listed Building and Conservation Areas) Act 1990 (as amended in 2009)	<p>The Planning (Listed Buildings and Conservation Areas) Act 1990 is an Act of the UK Parliament that altered the laws on granting of planning permission for building works, notably including those of the listed building system in England and Wales.</p> <p>The Planning (Listed Buildings and Conservation Areas) (Amendment No. 2) (England) Regulations 2009 came into force on 2 November 2009. They amend The Planning (Listed Buildings and Conservation Areas) (England) Regulations 1990 by substituting Schedule 4 of the 1990 Regulations (notices that a building has become listed or that a building has ceased to be listed), to reflect the fact that English Heritage now compiles lists of buildings of special architectural or historic interest and the Secretary of State (SoS) is responsible for approving them.</p>	The waste sector plans should seek to protect and enhance the historic environment in Wales including listed building and conservation areas while developing waste infrastructure
Planning (Hazardous Substances) Act 1990	The Planning (Hazardous Substances) Act 1990 is an Act of the UK Parliament to consolidate certain enactments relating to special controls in respect of hazardous substances.	The waste sector plans must seek to promote initiative and schemes that do not conflict with this planning act.
Department for Communities and Local (2010) PPS5 Planning for the Historic Environment: Historic Environment Planning Practice Guide	<p>PPS 5 sets out the Government's planning policies on the conservation of the historic environment.</p> <p>This replaces Planning Policy Guidance 15: Planning and the Historic Environment (PPG15) published on 1994; and Planning Policy Guidance 16: Archaeology and Planning (PPG16) published on 1990.</p> <p>PPS5 is supported by a Practice Guide endorsed by Communities and Local</p>	The waste sector plans should seek to protect and enhance the historic environment in Wales while developing waste management initiatives and waste infrastructure.

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
	Government, the Department for Culture, Media and Sport (DCMS) and English Heritage. Specifically, the purpose of this guide is to assist local authorities, owners, applicants and other interested parties in implementing PPS 5 and to help in the interpretation of policies within the PPS.	
The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003	<p>The regulations are an opportunity to plan and deliver a better water environment, focussing on ecology. They help to protect and enhance the quality of:</p> <ul style="list-style-type: none"> <li>• surface freshwater (including lakes, streams and rivers)</li> <li>• groundwaters</li> <li>• groundwater dependant ecosystems</li> <li>• estuaries</li> <li>• coastal waters out to one mile from low-water.</li> </ul>	Regulation 17 states that each public body has a duty in exercising their functions so far as affecting a river basin district, to have regard to River Basin Management Plans (RBMPs). The RBMPs contain the status and objectives for all water bodies, and the actions that will be taken to achieve these outcomes.
DEFRA/Welsh Government (2010) Environmental Permitting (England and Wales) Regulations 2010	<p>The Regulations widen the existing streamlined environmental permitting and compliance system in England and Wales by integrating existing permitting regimes covering water discharge consenting, groundwater authorisations and radioactive substances regulation authorisations and the outcomes of the Waste Exemptions Order Review into the Environmental Permitting system.</p> <p>They also bring amending Environmental Permitting Regulations that transposed the majority of the Mining Waste Directive and the permitting parts of the Batteries Directive into a single system which already covers Pollution Prevention and Control and Waste Management Licensing.</p> <p>The Regulations reduce the administrative burden of regulation on industry and regulators without compromising the environmental and human health standards previously delivered by the separate regimes and create an extended permitting and compliance system that brings increased clarity and certainty for everyone on how the regulations protect the environment.</p>	The waste sector plans must seek to promote initiatives and schemes that do not conflict with the objectives of the Regulations.
Welsh Assembly Government (2009) The	This Plan outlines the action to be implemented during the life of the	The waste sector plans should seek to protect and

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
Welsh Historic Environment Strategic Statement Action Plan	<p>present Welsh Assembly Government. It is highlighted also the areas for action to support and input from the Heritage Assembly Government Sponsored Bodies and other partners in Wales. The objectives are:</p> <ol style="list-style-type: none"> <li>1. Conservation and protection of the historic environment <ul style="list-style-type: none"> <li>• A modern, clear accountable and simple system of heritage protection</li> <li>• Identification, recording and designation of heritage assets</li> <li>• Conservation of properties in State care</li> <li>• Effective management and provision of access to historic environment records</li> <li>• People with the skills and understanding to conserve and regenerate heritage assets.</li> </ul> </li> <li>2. Regeneration and sustainable development through heritage <ul style="list-style-type: none"> <li>• Capturing distinctiveness</li> <li>• Tackle heritage at risk</li> <li>• Ensure that the historic environment contributes to regeneration objectives and the Welsh tourism offer nationally and locally</li> <li>• Sustainable Development</li> </ul> </li> <li>3. Public Access and Appreciation <ul style="list-style-type: none"> <li>• Making heritage sites enjoyable, relevant and stimulating to visit</li> <li>• Understanding and tackling barriers to access</li> <li>• Language and 'sense of place'</li> <li>• Public participation and volunteering</li> <li>• Public access to information and online service provision</li> </ul> </li> <li>4. Research and Scholarship <ul style="list-style-type: none"> <li>• Study of Welsh history</li> <li>• Community engagement and participation</li> <li>• Extending understanding of the Welsh historic environment</li> </ul> </li> </ol>	enhance the historic environment in Wales while developing waste infrastructure and waste management initiatives
Welsh Assembly Government (2007) Guide	The Guide is intended to assist local planning authorities to decide how much	The waste sector plans should seek to protect and

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process	weight to give to information in the Register when determining planning applications. It is also intended to assist others involved in the planning and development process in Wales, particularly developers preparing EIA statements, to bring forward plans and proposals that are likely to have the least possible adverse impact on historic landscape areas on the Register.	enhance the landscape of historic interest in Wales while developing waste infrastructure and implementing waste management initiatives.
WAGs Climate Change Strategy for Wales (Launched 7th Oct 2010)	<p>It restates the target of reducing greenhouse gas emissions from Wales by 3% per year from 2011 (excluding heavy industry and power generation)</p> <p>There is a commitment to achieve 40% reduction in all greenhouse gas emissions by 2020 (against 1990 baseline)</p> <p>It specifies targets for minimum emission reductions in each of six sectors: transport, residential, business, agriculture and land use, public sector, waste sector.</p> <p>There is a maximum level for emissions from public sector buildings so government can “lead by example.”</p> <p>And there is a national, co-ordinated approach to ensure that Wales is well placed to adapt to climate change.</p>	The waste sector plans should take account of climate change and should support the Strategy.
WAG (2007-2013) Rural Development Plan Programme (2007-2013)	<p>The Rural Development Plan (RDP) for Wales is part of a new European Union programme to promote the economic regeneration of rural areas.</p> <p>The RDP is aimed at assisting communities, helping to boost their local economy by supporting local businesses, improving basic services, village enhancement schemes, improving skills through training, and improving public and community transport.</p>	The waste sector plans should support the Plan.
WAG (2009) Farming Food and Countryside: Building a Secure Future Strategy.	<p>‘Farming, Food &amp; Countryside – Building a Secure Future’ outlines the Welsh Assembly Government’s Rural Affairs policy direction through to 2020. The strategy’s aim is to secure a sustainable future for the farming, food and land based production industries and the Welsh countryside environment.</p> <p>The objective of the Strategy is to achieve a sustainable and profitable future for farming families and businesses through the production and</p>	The waste sector plans should take account of farming, food and land based production industry and should support the Strategy.



Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
	processing of farm and forestry products. The objective also includes safeguarding the environment, animal health and welfare, adapting to climate change and mitigating its negative impacts. The strategy outcomes will contribute to the vitality and prosperity of our rural communities.	
Welsh Government (2010) Food for Wales, Food from Wales 2010-2020 (currently subject to consultation)	<p>It sets out a wide ranging vision of the place of food in Wales, with a view to develop a clear direction for the Welsh food industry to grow in a sustainable and profitable manner over the next 10 years. It is founded on principles of sustainable development, which include economic, social and environmental aspects of the production and consumption of food.</p> <p>It takes into consideration cross-cutting issues such as health, food culture and education, food security, environmental sustainability and community development to provide the basis for an integrated approach to food policy in Wales. Such an integrated approach is also intended to build resilience in the food system, to encourage a stronger food economy in Wales and, hence, to enhance the capabilities and capacities of food businesses to compete effectively both at home and abroad.</p>	The waste sector plans should take account of farming, food and land based production industry and should support the Strategy.
Planning Policy Wales (Edition 3, July 2010)	<p>This is an overarching policy consolidated in 2010 to incorporate MIPPS and covers all aspects of planning policy for Wales. It provides the policy framework for the effective preparation of local planning authorities' development plans.</p> <p>This is supplemented by 21 topic based Technical Advice Notes (TANs). Procedural guidance is given in Welsh Office / National Assembly for Wales / Welsh Assembly Government circulars. Planning Policy Wales, the TANs and the circulars may be material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.</p>	The waste sector plans should consider the national planning policy while developing waste infrastructure and waste management initiatives
TAN 15 –Development and Flood Risk (2004)	TAN 15 provides technical guidance which supplements the policy set out in Planning Policy Wales in relation to development and flooding.	The waste sector plans should consider this guidance to promote sustainable flood risk

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
	<p>It advises on:</p> <ul style="list-style-type: none"> <li>• Development advice maps;</li> <li>• Nature of development or land use;</li> <li>• Justifying the location of built development;</li> <li>• Assessing flooding consequences;</li> <li>• Surface water run-off from new development;</li> <li>• Action through Development Plans;</li> <li>• Development Control.</li> </ul>	management
TAN 6 Planning for Sustainable Rural Communities (includes sustainable agriculture and rural services) July 2010.	<p>Technical Advice Note (TAN) 6 supports national planning policy on sustainable rural communities. This policy is set out in Planning Policy Wales.</p> <p>This guidance provides advice on:</p> <ul style="list-style-type: none"> <li>• sustainable rural communities;</li> <li>• sustainable rural economies;</li> <li>• rural affordable housing;</li> <li>• rural enterprise dwellings;</li> <li>• One Planet Developments;</li> <li>• sustainable rural services; and</li> <li>• sustainable agriculture.</li> </ul>	The waste sector plans should consider this guidance to promote sustainable rural communities
TAN 8 Renewable Energy (2005)	<p>This guidance provides advice on:</p> <ul style="list-style-type: none"> <li>• Renewable Energy and Planning;</li> <li>• Onshore Renewable Energy Technologies;</li> <li>• Design and Energy;</li> <li>• Implications for Development Plans;</li> <li>• Development Control; and</li> <li>• Monitoring.</li> </ul>	The waste sector plans should consider this guidance when it comes to waste management initiatives
TAN 21 Waste (2001)	<p>This guidance provides advice on:</p> <ul style="list-style-type: none"> <li>• Planning framework in Wales</li> <li>• Regional co-ordination in Wales</li> <li>• Principles and techniques</li> <li>• Planning considerations in waste issues</li> <li>• Unitary development plans</li> <li>• Development control</li> <li>• Types of waste</li> </ul>	The waste sector plans should consider this guidance since this includes development of waste facilities and flood risk and implications for water quality
TAN 18 planning for transport infrastructure (2007)	<p>It describes how to integrate land use and transport planning. Explains how transport impacts should be assessed and mitigated.</p> <p>This guidance provides advice on:</p>	The waste sector plans should consider this guidance since it seems transport has been raised as an issue with energy from waste sites.

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
	<ul style="list-style-type: none"> <li>• Integration between Land Use Planning and Transport;</li> <li>• Location of Development;</li> <li>• Parking;</li> <li>• Design of Development;</li> <li>• Walking and Cycling;</li> <li>• Public Transport;</li> <li>• Planning for Transport Infrastructure;</li> <li>• Assessing Impacts and Managing Implementation.</li> </ul>	
Minerals Planning Policy Wales 2001	<p>It sets out the land use planning policy guidance of the National Assembly for Wales in relation to mineral extraction and related development in Wales, which includes all minerals and substances in, on or under land extracted either by underground or surface working.</p> <p>Policy guidance for marine aggregates is not included in this minerals planning policy guidance.</p>	The waste sector plans should take into account this guidance since they are relevant to waste management.
Minerals Technical Advice Notes (MTAN) Wales 1 Aggregates (2000)	<p>It supplements Minerals Planning Policy Wales (2000) by topic based</p> <p>This guidance provides advice on:</p> <ul style="list-style-type: none"> <li>• providing mineral resources to meet society's needs</li> <li>• current Aggregates production</li> <li>• future demand</li> <li>• future supply</li> <li>• protecting areas of importance</li> <li>• reducing the impact of aggregates production</li> <li>• restoration and aftercare</li> <li>• efficiency of use/recycling</li> <li>• annexes on Regional Aggregates Working Parties (RAWPs), Reclamation to Agriculture, Soil, Planting and seeding</li> </ul>	The waste sector plans should take into account this guidance since they are relevant to waste management.
Minerals Technical Advice Notes (MTAN) Wales 2 Coal (2009)	<p>It sets out detailed advice on the mechanisms for delivering the policy for coal extraction, through surface and underground working, by mineral planning authorities and the coal mining industry.</p> <p>It should be read with Minerals Planning Policy Wales which sets out the general policies for all mineral development.</p>	The waste sector plans should take into account this guidance since they are relevant to waste management.
Welsh River Basin Management Plans (2009)	It is designed to improve and integrate the way water bodies are managed throughout Wales	The waste sector plans should support this plan to protect and enhance

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
	<p>The main aim is to achieve good chemical and ecological status in inland and coastal waters by 2015.</p> <p>The Water Framework Directive establishes a strategic river basin management approach to the land and water environment. It requires setting environmental objectives for all water bodies, and Member States to draft plans to meet those objectives in each River Basin District.</p> <p>In Wales there are three River Basin Districts. One is wholly in Wales, the Western Wales River Basin District, and the remaining two are cross border, Severn River Basin District and Dee River Basin District. Therefore there are 3 RBMPs: for Western Wales; Dee; and Severn</p>	<p>groundwater and river quality in the inland, coastal and maritime environments</p>
<p>Shoreline Management Plans and Flood Risk Management Plans (various)</p>	<p>Strategic flood risk management, usually over 100 year period, usually reviewed every 5 years. Flood risk management options typically comprise 'do nothing', 'withdrawal of maintenance', 'hold the line', or 'managed retreat' of existing flood defences, depending on social, economic and environmental aspects.</p>	<p>Guide development of waste management infrastructure away from areas of future flood risk.</p>
<p>Welsh Government Economic Renewal Programme: A New Direction 2010</p>	<p>It sets out the role devolved government can play in providing the best conditions and framework to enable the private sector to grow and flourish.</p> <p>This approach will create the right environment to encourage entrepreneurship allowing the private sector to flourish rather than directly deliver support to individual businesses.</p> <p>The approach is organized by five priorities:</p> <ul style="list-style-type: none"> <li>• Investing in high-quality and sustainable infrastructure</li> <li>• Making Wales a more attractive place to do business</li> <li>• Broadening and deepening the skills base</li> <li>• Encouraging innovation</li> <li>• Targeting the business support we offer</li> </ul>	<p>Particularly in relation to proposal for an infrastructure strategy for Wales, but more generally to ensure the waste sector plans support the new direction for economic renewal.</p>
<p>Environment Agency Wales' Corporate Plan - Working Together for a Better Wales (2010-15)</p>	<p>This Corporate Plan sets out what Environment Agency will achieve by 2015 – working in partnership with the Welsh Assembly Government, business</p>	<p>The waste sector plans should support the objectives of this plan.</p>

Policy, plan, programme or legislation	Objective or requirements of the policy, plan, programme or legislation	How the objectives or requirements might be taken on board
	<p>and communities to make Welsh environment cleaner and healthier.</p> <p>The main objectives of the plan are:</p> <ul style="list-style-type: none"> <li>• Act to reduce climate change and its consequences</li> <li>• Improve air, land and water</li> <li>• Working with people and communities to create better places</li> <li>• Working with business and other organisations to use resources wisely</li> </ul>	
<p>Natural Environment Framework (consultation complete Dec 2010, but final workstream documents not yet published)</p>	<p>NEF proposes an ecosystems approach which acknowledges the intrinsic value of nature, biodiversity and ecosystems and makes use of ecosystems services, networked environment regions, protected sites and biodiversity action planning to maximise the long term benefits to nature and, hence, ourselves.</p> <p>The ecosystems approach to policy development and implementation to be embodied in the NEF was endorsed by the European Union on 15 March this year, when the Environmental Council met to agree a new biodiversity target. The Council agreed to: 'halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020' and to 'restore them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss' by the same date.</p>	<p>The waste sector plans should support this Framework to encourage the protection and enhancement of biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;</p>
<p>WAG, 2008, The Welsh Soils Action Plan (consultation closed)</p>	<p>This Action Plan is one component of the National Environment Strategy and states that achieving a high level of protection of soil resource is an important part of delivery of a sustainable future for Wales and globally. The actions within the plan to protect and enhance the soil resources in Wales are proposed within the following sectors: agriculture; forestry; planning, transport and minerals; wastes and pollution; ecosystems services; soils and cultural heritage; recreation and education.</p>	<p>The waste sector plans should support the actions of this plan related to waste and pollution to protect and enhance soil resources (i.e. natural soil functions and ecosystems; protecting against soil contamination; conserving and treating source segregated organic waste for improving the quality of Welsh soils).</p>

Appendix C – Sustainability Assessment of the Waste Prevention Programme

**WASTE PREVENTION PROGRAMME – ASSESSMENT OF ACTIONS FOR WASTE PREVENTION (INCLUDING REUSE)**

Actions Assessment Matrix

**SCORING KEY:**

✓✓	Strong positive effect
✓	Positive effect
x	Negative effect
xx	Strong negative effect
✓/x, ✓✓/xx	Mixed positive and negative effect
?	Unknown effect
0	No relationship/neutral effect

**Actions for Waste Prevention (Including Reuse): Education & Guidance**

- Promotion and Implementation of eco design
- Funding & financial measures: funded business support programmes
- Support for the development of resource efficient business models
- Information, awareness & communications: Information campaigns
- 

Objective	Sub-objectives	Score	Commentary
<p><b>Waste Management</b> To increase sustainable waste management and reduce Wales' ecological footprint</p>	<ul style="list-style-type: none"> <li>• To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;</li> <li>• To increase infrastructural capacity and facilities for sustainable waste management;</li> <li>• To encourage behavioural change and participation amongst household, commercial and industrial operators;</li> </ul>	✓✓	<p>These actions seek to encourage an increase in awareness about waste prevention within the municipal, commercial / industrial and construction / demolition sectors through the provision of supporting guidance, standards and existing tools. This is a fundamental step in assisting to meet the waste prevention targets and increase sustainable waste management. Implementing this action should also promote an increase of awareness and understanding of sustainable management and resource efficiency activities generating behavioural change toward prevention and therefore</p>

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Objective	Sub-objectives	Score	Commentary
	<ul style="list-style-type: none"> <li>• To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management.</li> </ul>		<p>reducing disposal rate and the level of waste requiring management.</p> <p>Reduced demand for resource and increased reuse items as a result of these actions will generate a number of benefits with respect to the minimisation of Wales Ecological Footprint (EF), for example reducing the loss rate of finite resource (i.e mineral extraction), greenhouse gas (GHG) emissions associated with transportation and reprocessing of waste and reduced demand for land required to accommodate waste management facilities.</p>
<p><b>Waste Infrastructure</b></p> <p>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this</p>	<ul style="list-style-type: none"> <li>• To promote markets for recyclates and recycled goods;</li> <li>• To encourage the development and deployment of alternative waste technologies and R&amp;D;</li> <li>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;</li> <li>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;</li> <li>• To support existing and develop new social enterprises focusing on waste as a</li> </ul>	✓✓/x	<p>These actions may contribute to the use of most appropriate waste minimisation and management techniques encouraging an improvement of companies' waste management strategy and green technology. These changes would involve organisational changes including managerial techniques and training (classic waste minimisation).</p> <p>The actions may also encourage take back or exchange opportunities for unwanted and unused materials by manufactures, construction companies, retailers, service providers and other businesses.</p> <p>Waste materials represent a cost to business, typically up to 4% of business turnover (Envirowise programme). Companies can be more profitable by adopting waste prevention and reduction. In addition to waste disposal and</p>

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Objective	Sub-objectives	Score	Commentary
	<p>community resource;</p> <ul style="list-style-type: none"> <li>• To promote equality and opportunity to access waste management facilities to prevent instances of fly-typing;</li> <li>• To provide cost-effective and reliable sustainable waste management.</li> </ul>		<p>transport costs, there are further hidden costs such as the value of lost raw materials and the value-added cost from labour and energy. Minimising waste through these actions can therefore contribute to reduce the cost for businesses and promote a more cost-effective sustainable waste management.</p> <p>As businesses and households are encouraged to reuse waste materials, there may be a requirement to manage less recycling products and residual waste which in turn may result in a reduction in the number of jobs within the sector, should staff affected not be redeployed. This would be a negative effect in relation to employment opportunities. Potential mitigation measures could include training and upskilling in the use of new tools and staff to be redeployed. Some employment opportunities could potentially be supported by the action in the longer term, particularly for the third sector to be involved in the waste management infrastructure.</p>
<p><b>Landscape, biodiversity and cultural heritage</b></p> <p>To protect and enhance urban and rural landscapes and resources, including ecological</p>	<ul style="list-style-type: none"> <li>• To protect designated landscapes: environmental, cultural and historic;</li> <li>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and</li> </ul>	✓	<p>Encouraging waste prevention measures into companies waste management strategy and reducing waste from households will reduce the environmental effect of municipal, C&amp;D and I&amp;C processes by saving raw materials, land take and energy used. This will have long-term beneficial effects</p>



## Actions for Waste Prevention (Including Reuse): Education & Guidance

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Objective	Sub-objectives	Score	Commentary
services and functions	<p>connectivity;</p> <ul style="list-style-type: none"> <li>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;</li> <li>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;</li> <li>• To promote the use of brownfield land use;</li> <li>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;</li> <li>• To remediate contaminated land.</li> </ul>		<p>for the natural and historic environment.</p> <p>Improving natural resource use and reuse will prevent loss of habitats and avoid effects on erosion and terrestrial and marine life. In addition, minimising the volume to landfill/residual treatment will reduce the need for new landfill developments, encouraging therefore the protection of landscape, historical resource and biodiversity.</p> <p>There may be also indirect positive effects in terms of reduced levels of fly-tipping if waste is reduced. In addition, reducing the volume of waste to landfill should also avoid adverse effects in relation to contamination of flora, fauna and habitats.</p>
<p><b>Soil</b></p> <p>To protect and enhance soil resources</p>	<ul style="list-style-type: none"> <li>• To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation.</li> <li>• To protect against contamination to soil;</li> <li>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils.</li> </ul>	✓	<p>These actions should have a long term beneficial effect for the soil environment. Encouraging prevention and minimisation of waste will reduce the volume of waste going to landfill, which in turn will minimise landtake. Increased reuse should also offset land take associated with mineral extractions.</p> <p>In addition, reducing the volume and type of waste going to landfill will avoid generation of landfill gas and leachate and therefore minimise the risk of soil contamination and maintain natural soil functioning and associated ecosystem services.</p>

## Actions for Waste Prevention (Including Reuse): Education & Guidance

- Promotion and Implementation of eco design
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Objective	Sub-objectives	Score	Commentary
<p><b>Water</b></p> <p>To protect and promote the sustainable use of water resources</p>	<ul style="list-style-type: none"> <li>• To promote sustainable flood risk management;</li> <li>• To protect and enhance water quality and quantity in inland, coastal and maritime environments.</li> </ul>	✓	<p>These actions should have a long-term beneficial effect for the water environment.</p> <p>Encouraging a reduction in raw material extraction will avoid effects on water tables and on coastal erosion and maritime environments (i.e. marine aggregates). In addition, avoiding the construction and operation of residual waste facilities such as landfill can result in preventing water pollution to groundwater, rivers and coastal environments due to surface water runoff and leeching.</p> <p>No direct link between these actions and flood risk management has been identified, although it is assumed that these guidance, standards and tools take into account future flood risk.</p>
<p><b>Air quality, noise and odour</b></p> <p>To protect and enhance air quality in local, regional and national context</p>	<ul style="list-style-type: none"> <li>• To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;</li> <li>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;</li> <li>• To minimise adverse impacts to noise levels within communities, to ;</li> </ul>	✓	<p>The actions could generate positive indirect effects in relation to air quality by encouraging a minimisation of emissions to air mainly due to a reduction in waste going to landfill, a reduction in use of transport (for example to landfill sites) and in reprocessing. This may be offset by some increase in emissions as a result of increased collection and transport of materials for reuse. It is assumed that any such effects would not be of the same magnitude as those above mentioned.</p> <p>Similarly, these actions may have an overall positive effect on</p>

## Actions for Waste Prevention (Including Reuse): Education & Guidance

- Promotion and Implementation of eco design
- Funding & financial measures: funded business support programmes
- Support for the development of resource efficient business models
- Information, awareness & communications: Information campaigns

Objective	Sub-objectives	Score	Commentary
	<ul style="list-style-type: none"> <li>• To minimise odours arising from waste processing and its impact upon local communities.</li> </ul>		<p>noise levels within communities given an overall reduction in noise related to transport and waste treatment.</p> <p>It is assumed that, as a result of a reduction in residual waste requiring treatment due to waste prevention, there will be a reduction in odours arising from waste processing and landfill.</p>
<p><b>Climate change</b></p> <p>To assist with Wales' capacity to adapt to and mitigate against climatic change</p>	<ul style="list-style-type: none"> <li>• To reduce GHG emissions;</li> <li>• To contribute to national, regional and local level carbon abatement strategy/objectives;</li> <li>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;</li> <li>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects.</li> </ul>	✓	<p>Encouraging the use of waste management guidance and eco design in preventing waste will help reduce GHG emissions associated for example with transportation (i.e. to place of use and to landfill) and reprocessing activities (for raw materials and waste). This in turn will contribute to mitigate the effects of Climate Change.</p> <p>There are also likely to be some positive contributions to carbon abatement strategies/objectives by improving the efficiency of the municipal, I&amp;C and C&amp;D sector's processes. It is also assumed that the use of these guidance advice in conjunction with awareness campaign will promote and encourage the use of technologies that tackle CO<sub>2</sub> emissions (for example, technologies which support fuel switching to lower carbon alternatives such as co-firing of fossil fuel with biomass and/or waste).</p>
<p><b>Health</b></p> <p>To protect and enhance the health and well-being of</p>	<ul style="list-style-type: none"> <li>• To provide safe, secure, mechanisms for civic engagement;</li> <li>• To prevent the exposure of members of the</li> </ul>	✓	<p>The reduction of residual waste requiring treatment as a result of these actions should help to provide a safe and healthy working environment for waste management in homes and municipal, I&amp;C and C&amp;D businesses. For</p>

## Actions for Waste Prevention (Including Reuse): Education & Guidance

- Promotion and Implementation of eco design
- Funding & financial measures: funded business support programmes
- Support for the development of resource efficient business models
- Information, awareness & communications: Information campaigns

Objective	Sub-objectives	Score	Commentary
communities	<p>public to hazards, noise and odour arising from waste;</p> <ul style="list-style-type: none"> <li>• To provide opportunities for those with health issues to gain suitable and meaningful employment;</li> <li>• To provide safe and healthy working environments for employees within the waste and recycling industries</li> </ul>		<p>example, there will be a reduction in air and noise pollution, odours and hazardous materials associated with the management of waste.</p> <p>Avoiding the production of problematic or hazardous waste on site and at end of life is also likely to prevent exposure of members of the public to hazards as a result of the nature of the material. For example, some chemicals are hazardous to human health since they contain substances that are carcinogenic, mutagenic or toxic to reproduction.</p>
<p><b>Civic engagement</b> To increase civic engagement in sustainable waste practice</p>	<ul style="list-style-type: none"> <li>• To raise awareness and understanding of sustainable waste strategy, objectives and management</li> <li>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor.</li> <li>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement</li> <li>• To support and provide opportunities for volunteering in the waste and recycling industries;</li> <li>• To ensure all promotional literature is</li> </ul>	✓	<p>The actions could contribute to an increased civic engagement in sustainable waste. Through these actions, households, manufacturers and construction companies could influence the behaviours of their staff, visitors, customers and general public to help ensure that they are fully engaged in less wasteful behaviour and help them making the right purchasing decisions to avoid waste.</p>

## Actions for Waste Prevention (Including Reuse): Education & Guidance

- Promotion and Implementation of eco design
- Funding & financial measures: funded business support programmes
- Support for the development of resource efficient business models
- Information, awareness & communications: Information campaigns

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Objective	Sub-objectives	Score	Commentary
	<p>published in Welsh as well as English where appropriate;</p> <ul style="list-style-type: none"> <li>• To provide community facilities including visitor and educational centres.</li> </ul>		
<p><b>Summary</b></p> <p>The actions are considered to have a strong positive effect in relation to waste management objective as they seek to reinforce the important role of businesses and households in preventing their own waste arisings by encouraging an increase in awareness about waste prevention through the provision of supporting guidance, advice and campaign and encouraging eco design. This is a fundamental step in assisting to meet the waste prevention targets and to give priority on more sustainable ways of consuming and producing.</p> <p>These actions will ensure that households, manufacturers, construction and other businesses/industries influence the behaviours of their staff, visitors and customers to help ensure that they are fully engaged in less wasteful behaviour with customers assisted to help them making the right purchasing decisions to avoid waste.</p> <p>This is expected to discourage the use of raw materials and materials with legacy waste where appropriate, generating behavioural change toward prevention and reuse within I&amp;C sector and therefore reducing disposal rate and the level of waste requiring management. Reduced demand for raw materials and increased reuse as a result of this action consequently will generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint (EF); for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas emissions associated with transportation and reprocessing of waste. The results of the EF analysis<sup>77</sup> demonstrate that food and putrescible waste has the largest impact of all materials (32% of the total EF). This is followed by paper and card (15% of the impact) and chemicals (12% of the impact). The EF of waste can be reduced more quickly then if the focus is on preventing arisings of these materials. For food waste, this is because it has a high EF. For paper and card, it is because large quantities arise in the waste stream.</p>			

<sup>77</sup> Ecological Footprint impact of the Welsh Waste Strategy Study Report Arup January 2009

## Actions for Waste Prevention (Including Reuse): Education & Guidance

- Promotion and Implementation of eco design
- Funding & financial measures: funded business support programmes
- Support for the development of resource efficient business models
- Information, awareness & communications: Information campaigns
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Objective	Sub-objectives	Score	Commentary
<p>The actions are also likely to have a strong positive effect on the waste infrastructure objective as they should contribute to the use of most appropriate waste minimisation and management techniques encouraging an improvement of companies' waste management strategy and green technology. The actions may also encourage take back or exchange opportunities for unwanted and unused materials by manufactures, construction companies and other businesses.</p>			
<p>As the I&amp;C, C&amp;D and municipal sectors are encouraged to reuse materials and prevent waste, there may be less recycling and residual waste which in turn may result in a reduction in the number of jobs within the sector, should staff affected not be redeployed. This could be a negative effect in relation to local employment opportunities. Potential mitigation measures could include training and upskilling in the use of new tools and staff to be redeployed. Some employment opportunities could potentially be supported by the actions in the longer term, particularly through the management of waste of construction companies and manufacturers.</p>			
<p>Waste materials represent a cost to business, typically up to 4% of business turnover (Envirowise programme). Companies can be more profitable by adopting waste prevention and reduction. In addition to waste disposal and transport costs, there are further hidden costs such as the value of lost raw materials and the value-added cost from labour and energy. Minimising waste through these actions can therefore contribute to reduce the cost for businesses and promote a more cost-effective sustainable waste management.</p>			
<p>The actions are also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, land take, soil, water, air quality/noise/odour, climate change and health due to the potential for the actions to prevent waste, optimise materials use and reduce reliance on landfill/residual treatment by improving the ways companies and households manage waste.</p>			
<p>The actions could also contribute to an increased civic engagement in sustainable waste. Through these actions, companies in the I&amp;C and C&amp;D sectors could influence the behaviours of their staff, visitors, customers and general public to help ensure that they are fully engaged in less wasteful behaviour and help them making the right purchasing decisions to avoid waste.</p>			
<p>It is anticipated the effects of the actions will be both short and longer term, offering, as an overall, benefits in the long term. The following mitigation and enhancement measures could be considered by Welsh Government when developing the final version of the plan:</p>			

### Actions for Waste Prevention (Including Reuse): Education & Guidance

- Promotion and Implementation of eco design
- Funding & financial measures: funded business support programmes
- Support for the development of resource efficient business models
- Information, awareness & communications: Information campaigns

Objective	Sub-objectives	Score	Commentary
	<ul style="list-style-type: none"> <li>• Including a commitment to incorporate training and upskilling in the use of new tools and staff to be redeployed. Some employment opportunities could potentially be supported by the actions in the longer term, particularly through the management of waste of construction companies and manufacturers.</li> <li>• Consideration of operational waste issues through EIA of new I&amp;C, housing and construction schemes.</li> <li>• Ensure that qualifying I&amp;C, and C&amp;D interventions/schemes minimise transport distance of reused items from/to premises for preparation for reuse, and promote energy efficiency and use of on site renewable energy where appropriate.</li> </ul>		

#### Summary of the Actions Assessments

Action Name	Waste Management	Waste Infrastructure	Landscape, biodiversity & cultural heritage	Soil	Water Resources	Air Quality	Climate Change	Health	Civic engagement
<b>Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools</b>									
Education, Guidance and Tools	✓✓	✓✓/x	✓	✓	✓	✓	✓	✓	✓

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## Appendix D – Health Impact Assessment of the Waste Prevention Programme

Actions	Health Impact	Recommendation	Evidence
<b>Household Waste</b>			
<b>Engage – influencing behaviour</b>			
Food hotspots – developing activities that focus on the 'top 5' food/grocery product categories to reduce their contribution to waste	Positive impact upon environmental and social capital from diverting HHW from landfill. Positive health impact on economy and employment.	Improve employment and business opportunities through creation of new re-use and materials management of markets.  Clear positive health benefits from employment.	<a href="http://www.wales.gov.uk/docs/desh/consultation/100621wastemunicipalplanen.pdf">www.wales.gov.uk/docs/desh/consultation/100621wastemunicipalplanen.pdf</a> <a href="http://www.opsi.gov.uk/legislation/wales/wsi2005/20051806e.htm#8">http://www.opsi.gov.uk/legislation/wales/wsi2005/20051806e.htm#8</a> <a href="http://www.wasteawarenesswales.org.uk/index.html">http://www.wasteawarenesswales.org.uk/index.html</a> <a href="http://www.zwia.org/joomla/index.php?option=com_content&amp;view=article&amp;id=55&amp;Itemid=66">http://www.zwia.org/joomla/index.php?option=com_content&amp;view=article&amp;id=55&amp;Itemid=66</a> <a href="http://www.letsrecycle.com/do/ecco.py/view_item?listid=37&amp;listcatid=217&amp;listitemid=56160">http://www.letsrecycle.com/do/ecco.py/view_item?listid=37&amp;listcatid=217&amp;listitemid=56160</a> <a href="http://business.wales.gov.uk/bdotg/action/detail?en&amp;itemId=1080481044&amp;lanq=en&amp;site=230&amp;topicId=1080466581&amp;type=RESOURCES">http://business.wales.gov.uk/bdotg/action/detail?en&amp;itemId=1080481044&amp;lanq=en&amp;site=230&amp;topicId=1080466581&amp;type=RESOURCES</a> Unemployed more likely than employed people to visit physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes <sup>78</sup>
Consuming better – love stuff (clothing and shoes) Rethink clothing purchases – considered purchase, care in use, and passing on instead of binning.	Positive Potential health impact.	Establish / use existing community recycling networks, generation of social enterprises and new employment opportunities.	
Longer product lifetimes – get the ball rolling Get more lifetime value out of products through small investments of money and time.	Positive health impact upon economy and employment through increased resource efficiency and creation of new employment through recovered/ recycled construction materials. Indirect positive health impact upon social capital and community cohesion through	Create innovative opportunities for waste management companies and construction companies to create joint ventures seeking new markets for recovered materials.	<a href="http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html">http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html</a>

<sup>78</sup> The impact of unemployment on health: a review of the evidence, R. L. Jin, C. P. Shah and T. J. Svoboda Canadian Medical Association Journal, Vol 153, Issue 5 529-540,

Actions	Health Impact	Recommendation	Evidence
	educated workforce, education having a larger benefit upon wider social cohesion and economy.		
'Nuts & bolts' campaigns – say no to junk mail, composting, etc Local lead (supported by strategic level activity)	<b>Scope out - no health impact</b>		
Enable: reuse infrastructure	Promotion of reuse is a requirement of the Waste Framework Directive – no health impact		
Enable: product design and innovation–voluntary approaches	Outcome and take up of the measure is unknown as the action involves a voluntary agreement - no health impact		
Enable: product packaging and retail innovation	Specific measure uncertain , outcome unknown - no health impact.		
Encourage: services provided to households	<b>Scope out - no health impact</b>		
Encourage: regulation on waste producers	<b>Scope out - no health impact</b>		
Exemplify: demonstrating leadership	<b>Scope out - no health impact</b>		
<b>Industrial and commercial waste</b>			
Information, Awareness and Communications	<b>Scope out - no health impact</b>		

Actions	Health Impact	Recommendation	Evidence
Standards, Environmental Certification and Assessment	Positive health impact on economy and employment.	Need for additional trained individuals to undertake certification and assessment to new standards.  Improve employment and business opportunities through creation of new re-use and materials management assessment markets. Clear positive health benefits from employment	<a href="http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/B73E7DCC51542EE0802572FD0073F398/\$file/Goods+Again+Project+at+Onley+Prison.pdf">http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/B73E7DCC51542EE0802572FD0073F398/\$file/Goods+Again+Project+at+Onley+Prison.pdf</a>  <a href="http://www.pulltheplug.co.uk/">http://www.pulltheplug.co.uk/</a>  <a href="http://www.sofaproject.org.uk/">http://www.sofaproject.org.uk/</a> Unemployed more likely than employed people to visit physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes. <sup>1</sup>
Legislation and regulation (excluding Site Waste Management Plans)	Positive health impact upon social capital through reduced waste disposal. Positive health impact upon environment from reduced emissions from waste disposal activities, e.g. waste, vehicle emissions, odour, dust, noise, bioaerosols. Potential positive impact on health through improved air quality.  Risk that the projected increase in the recycling industry could result in an increase in workplace accidents.	Improve safety within the recycling industry	Reduction in releases from waste processing facilities, incineration/ landfill. Reduction in exposure emissions from energy.  UK waste industry reported between 4,100 to 4,300 accidents per year, with overall accident rates at four times the national average; around 2,500 per 100,000 workers <sup>79</sup> .  Refuse collection is the highest risk activity in the waste industry <sup>80</sup>
Legislation to mandate Site Waste Management Plans	Positive health impact upon economy and employment through increased resource efficiency.  Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.  Positive health impact on social capital through the reduction in crime from reduced fly tipping.	Potentially positive: provided that SWMP's are audited.  Enable small businesses to receive specific training and support.	<a href="http://www.cewales.org.uk/waste/tips-to-reduce-waste/">http://www.cewales.org.uk/waste/tips-to-reduce-waste/</a>

<sup>79</sup> Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

<sup>80</sup> Update to mapping health and safety standards in the UK waste industry, HSE, 2009

Actions	Health Impact	Recommendation	Evidence
Green Procurement and Supply Chain Initiatives	Positive health impact on economy and employment.	Improve employment and business opportunities through creation of new small to medium sized enterprises through green supply chain initiatives.  Clear positive health benefits from employment	Increased employment leads to a reduction in the health impacts of unemployment. Unemployed more likely than employed people to visit physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes <sup>81, 1</sup> .
Reuse and repair networks (including resource exchanges)	Positive health impact on social capital, reuse networks promotes greater social cohesion.  Positive health impact on economy and employment through the potential to generate new employment opportunities..	Opportunity to draw links between recycling. & improved environmental quality.  Clear positive health benefits from employment.	Increased employment leads to a reduction in the health impacts of unemployment. Unemployed more likely than employed people to visit physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes. <sup>1</sup>
Products Registers	<b>Scope out - no health Impact</b>		
Eco-labelling	Positive health impact upon economy and employment through increased resourcing of recovered and sustainable materials sourced in the UK.  Positive health impact upon economy and employment through the creation of new domestic sustainable products markets.	Setup framework to enable local suppliers to be registered with a eco label. Help businesses to identify sustainable label materials and source them easily  At present, industry have only a limited amount of information to determine the ethical credentials of the products that they buy. However, this is costly and time consuming. Further steps need to be taken to allow for the ethical trade / procurement of construction products to be developed further. <sup>i82</sup>	<a href="http://www.uniformreuse.co.uk/pdf/product_labelling_for_eol_management.pdf">http://www.uniformreuse.co.uk/pdf/product_labelling_for_eol_management.pdf</a> (Page 18)  Existing labeling standards ISO 14020, ISO 14021, ISO 14024,  Sustainable supply network management techniques (Young and Kielkiewicz-Young (2001))
Voluntary Agreements	<b>Scope out - no health Impact</b>		

<sup>81</sup> The impact of unemployment on health: a review of the evidence, R. L. Jin, C. P. Shah and T. J. Svoboda Canadian Medical Association Journal, Vol 153, Issue 5 529-540,

<sup>82</sup> COBRA The International Construction Research Conference of the Royal Institution of Chartered Surveyors 7-8<sup>th</sup> September 2004

Actions	Health Impact	Recommendation	Evidence
Funding and financial measures: Funded Business Support Programmes	Positive impact upon social capital and environment where a reduction in exposure to HHW occurs as a result of the SWMG.  Positive health impact on economy and employment.	Improve employment and business opportunities through creation of new re-use and materials management of markets.  Clear positive health benefits from employment.	Increased employment leads to a reduction in the health impacts of unemployment. Unemployed more likely than employed people to visit physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes. <sup>1</sup>
The promotion of research and development	<b>Scope out - no health impact</b>		
Training and education programmes	Positive Health Impact upon employment and economy, social capital, as well as environment .	Targeting training and support at SME's and younger people could results in a net employment gain.	Increased employment leads to a reduction in the health impacts of unemployment. Unemployed more likely than employed people to visit physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes. <sup>1</sup>
Support for the development of resource efficient business models	Positive Health Impact upon employment and economy, social capital, as well as environment .	Implement a waste minimisation sector advisory centre to assist SME's through initiating and guiding change management by establishing connections between the businesses main preoccupations (strategy, design) and environmental aspects.	SMEs, although operating within supply chains in which environmental obligations increasingly apply, have found it difficult to apply ecodesign techniques, which are tending to remain 'tools for experts'. (Le Pochet, S., Bertoluci, G. and Froelicj, D. (2007) Integrating Ecodesign by conducting changes in SMEs. Journal of Cleaner Production 15, 671-680.)
<b>Construction and Demolition waste</b>			
<b>Supporting Policy Development</b>			
Production of business plan for 2011/12	<b>Scope out - no health impact</b>		
Convergence project for furthering Green compass scheme	<b>Scope out - no health impact</b>		
Promotion of Green compass scheme in non-convergence areas	<b>Scope out - no health impact</b>		
Obtain project funding via WEFO for the Built Environment Sustainable Training (BEST) Convergence Project	<b>Scope out - no health impact</b>		
Support development of SWMP Regulations	<b>Scope out - no health impact</b>		

Actions	Health Impact	Recommendation	Evidence
Provide representation for industry on WAG SWMP Regulation Steering Group	<b>Scope out - no health impact</b>		
Review current SWMP guidance material and tools and adapt for Welsh businesses	<b>Scope out - no health impact</b>		
Support Waste Strategy Branch in development / completion of the Construction & Demolition sector plan.	<b>Scope out - no health impact</b>		
Align C&D sector waste programme with the carbon reduction agenda Attend Low Zero Carbon Hub (LZCH) steering group meetings (monthly)	<b>Scope out - no health impact</b>		
Present to LZCH, when appropriate to highlight areas of potential concern/R&D etc	<b>Scope out - no health impact</b>		
Presentation of response to Wales Low Carbon Hub study to LZCH	<b>Scope out - no health impact</b>		
<b>BREEAM</b>			
Identify opportunities for increased credits/weighting for waste management within current systems	<b>Scope out - no health impact</b>		
Work with BRE to prepare a plan for increasing the current credit allocation available for good waste management	<b>Scope out - no health impact</b>		
Work with CEEQUAL to prepare a plan for increasing the current	<b>Scope out - no health impact</b>		

Actions	Health Impact	Recommendation	Evidence
allocation available for good waste management			
Increasing the use of surplus construction materials.	Positive health impact upon economy and employment through increased resource efficiency and creation of new employment through recovered/ recycled construction materials.	Create innovative opportunities for waste management companies and construction companies to create joint ventures seeking new markets for recovered materials.	<a href="http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html">http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html</a>
Securing high quality recycling of C&D business waste and increasing markets for recycle within C&D sector	Positive health impact upon economy and employment through increased resource efficiency and creation of new employment through recovered/ recycled construction materials.	Create innovative opportunities for waste management companies and construction companies to create joint ventures seeking new markets for recovered materials.	<a href="http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html">http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html</a>
<b>Builderscrap/Surplus centre</b>			
Development of Surplus Centre Business Plan in partnership with Cylch	<b>Scope out - no health impact</b>		
Establishment of Steering Group for Surplus Centre	<b>Scope out - no health impact</b>		
Six month pilot of surplus centre in Cardiff area	Positive health impact upon economy and employment through increased resource efficiency and creation of new employment through recovered/ recycled construction materials.	Create innovative opportunities for waste management companies and construction companies to create joint ventures seeking new markets for recovered materials.	<a href="http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html">http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html</a>
Preparation of pilot report with recommendations/barriers	<b>Scope out - no health impact</b>		
Preparation of an action plan for Wales wide dissemination of the scheme	<b>Scope out - no health impact</b>		
<b>Trade Waste Bring Sites (TWBS)</b>			
Build upon the development of the Roadmap for TWBS and work with Environment Agency Wales to establish pilot site.	<p>Positive health impact upon social capital and environment through the reduction of fly tipping.</p> <p>Negative health impact upon environment resulting from an increase in traffic movement around TWBS.</p> <p>Negative health impact upon social capital through the increased risk of health and</p>	<p>TWBS not to handle hazardous waste.</p> <p>TWBS sites should be located in existing industrial trading estates to reduce loss of amenity of neighbours.</p> <p>Pedestrian areas and vehicles need to be kept separate to avoid collisions with vehicles.</p> <p>TWBS operators must adhere to a strict</p>	<p><a href="http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/local_authority_projects/case_studies/trade_bring_sites/">http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/local_authority_projects/case_studies/trade_bring_sites/</a></p> <p><a href="http://www.wrap.org.uk/downloads/Setting_up_a_bring_site.4377be54.8724.pdf">http://www.wrap.org.uk/downloads/Setting_up_a_bring_site.4377be54.8724.pdf</a></p> <p><a href="http://www.environment-agency.gov.uk/research/library/data/97400.aspx">http://www.environment-agency.gov.uk/research/library/data/97400.aspx</a></p> <p><a href="http://www.wrap.org.uk/downloads/Lessons_learned_-_">http://www.wrap.org.uk/downloads/Lessons_learned_-_</a></p>

Actions	Health Impact	Recommendation	Evidence
	<p>safety issues with both bulky items and hazardous materials.</p> <p>Potential negative health impact upon economy through the risk that there is a projected increase in workplace accidents.</p> <p>Potential negative health impact upon economy through the increased risk of health impact of dust from the movement of dust from construction materials.</p>	H&S regime, with a 'zero harm' culture.	<p><a href="#">_how_to_set_up_a_trade_bring_site.0f30c510.8694.pdf</a>  <a href="http://www.wrap.org.uk/downloads/Bath_and_North_East_Somerset_Council.882dbdeb.8693.pdf">http://www.wrap.org.uk/downloads/Bath_and_North_East_Somerset_Council.882dbdeb.8693.pdf</a></p> <p>UK waste industry reported between 4,100 to 4,300 accidents per year, with overall accident rates at four times the national average; around 2,500 per 100,000 workers<sup>83</sup></p> <p>Unemployed more likely than employed people to visit physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes<sup>84</sup></p>
Monitoring of pilot site for the initial six month period and preparation of report.	<b>Scope out - no health impact</b>		
Preparation for national rollout	<p>Positive health impact upon social capital and environment through the reduction of fly tipping.</p> <p>Negative health impact upon environment resulting from an increase in traffic movement around TWBS.</p> <p>Negative health impact upon social capital through the increased risk of health and safety issues with both bulky items and hazardous materials.</p> <p>Potential negative health impact upon economy through the risk that there is a projected increase in workplace accidents.</p> <p>Potential negative health impact upon economy through the increased risk of health impact of dust from the movement of dust from construction materials.</p>	<p>TWBS not to handle hazardous waste.</p> <p>TWBS sites should be located in existing industrial trading estates to reduce loss of amenity of neighbours.</p> <p>Pedestrian areas and vehicles need to be kept separate to avoid collisions with vehicles.</p> <p>TWBS operators must adhere to a strict H&amp;S regime, with a 'zero harm' culture.</p>	<p><a href="http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/local_authority_projects/case_studies/trade_bring_sites/">http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/local_authority_projects/case_studies/trade_bring_sites/</a>  <a href="http://www.wrap.org.uk/downloads/Setting_up_a_bring_site.4377be54.8724.pdf">http://www.wrap.org.uk/downloads/Setting_up_a_bring_site.4377be54.8724.pdf</a>  <a href="http://www.environment-agency.gov.uk/research/library/data/97400.aspx">http://www.environment-agency.gov.uk/research/library/data/97400.aspx</a>  <a href="http://www.wrap.org.uk/downloads/Lessons_learned_-_how_to_set_up_a_trade_bring_site.0f30c510.8694.pdf">http://www.wrap.org.uk/downloads/Lessons_learned_-_how_to_set_up_a_trade_bring_site.0f30c510.8694.pdf</a>  <a href="http://www.wrap.org.uk/downloads/Bath_and_North_East_Somerset_Council.882dbdeb.8693.pdf">http://www.wrap.org.uk/downloads/Bath_and_North_East_Somerset_Council.882dbdeb.8693.pdf</a></p> <p>UK waste industry reported between 4,100 to 4,300 accidents per year, with overall accident rates at four times the national average; around 2,500 per 100,000 workers<sup>85</sup></p> <p>Unemployed more likely than employed people to visit physicians, take medications or be admitted to general</p>

<sup>83</sup> Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

<sup>84</sup> The impact of unemployment on health: a review of the evidence, R. L. Jin, C. P. Shah and T. J. Svoboda Canadian Medical Association Journal, Vol 153, Issue 5 529-540,



Actions	Health Impact	Recommendation	Evidence
			hospitals. Strong, positive association between unemployment and adverse health outcomes <sup>86</sup>
Preparation of x3 waste focused demonstration / best practice project case studies	<b>Scope out - no health impact</b>		
Support the demonstration process and peer review/events and applicant companies	<b>Scope out - no health impact</b>		
Preparation of a feasibility study to examine the opportunities for using the planning system to increase the potential recovery of a building at the end of its life	<b>Scope out - no health impact</b>		
Development of plan to implement planning for deconstruction into planning conditions (on positive outcome of feasibility)	<b>Scope out - no health impact</b>		
Develop guidance / template for recovery plans for demolition & refurbishment projects	<b>Scope out - no health impact</b>		
Focused events/material for designers/architects outlining principles/practices of D4D	<b>Scope out - no health impact</b>		
Work with Ecodesign Centre to promote principles of D4D within existing standards/systems	<b>Scope out - no health impact</b>		
Work with Ecodesign Centre/Construction Skills/CIOB to develop training/guidance material for application with constructors	Positive Health Impact upon employment and economy, social capital, as well as environment .	Implement a waste minimisation sector advisory centre to assist SME's through initiating and guiding change management by establishing connections between the businesses main preoccupations (strategy, design)	SMEs, although operating within supply chains in which environmental obligations increasingly apply, have found it difficult to apply ecodesign techniques, which are tending to remain 'tools for experts'. (Le Pochet, S., Bertoluci, G. and Froelicj, D. (2007) Integrating Ecodesign by conducting changes in SMEs. Journal of Cleaner Production 15, 671-680.)

<sup>85</sup> Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

<sup>86</sup> The impact of unemployment on health: a review of the evidence, R. L. Jin, C. P. Shah and T. J. Svoboda Canadian Medical Association Journal, Vol 153, Issue 5 529-540,

Actions	Health Impact	Recommendation	Evidence
		and environmental aspects.	
Dissemination of training/guidance material via events, webinars, website	<b>Scope out - no health impact</b>		
Complete the technical specification for the application of recycled aggregate for minor schemes.	<b>Scope out - no health impact</b>		
Establish pavement trial	Positive health impact upon economy and employment through increased resource efficiency and creation of new employment through recovered/ recycled construction materials.	Create innovative opportunities for waste management companies and construction companies to create joint ventures seeking new markets for recovered materials.	<a href="http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html">http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html</a>

Actions	Health Impact	Recommendation	Evidence
Work with C&D sector to source feedstock of suitable materials for use in energy recovery (CIMS SP action CIMS/OR/1)	<p>Risk of an indirect impact on health through public opposition to locating thermal waste treatment facilities close to areas where they live (NIMBY-ism).</p> <p>Risk of EfW's having a negative impact upon the present and future uses of land adjacent to their location.</p>	<p>Regular supply of information into the public realm regarding emissions from EfWs. Promotion of a thorough and robust maintenance, site and environmental management systems.</p> <p>Production of a Land Impact Assessment for each site.</p> <p>EfW's exterior design quality should encourage and inspire new developments.</p>	<p>The siting of an EfW plant can often be opposed by local community groups. This is often due to uncertainty and concerns over releases of dioxins and heavy metals within the stack emissions and the unfounded association of incidences of cancer close to waste incinerators<sup>87 88 89</sup>. Emissions are strictly controlled under the Waste Incineration Directive<sup>90</sup>. Argument against where the location of a particular thermal treatment plant is sited can therefore become less evidence based in case when it involves a greater degree of fear due to uncertainty.</p> <p>Risk of siting an EfW plant has not been proven to have a detrimental impact upon residential property prices in the long term<sup>91</sup>. No negative impacts on either residential or commercial property markets as a result of an EfW plant<sup>92</sup>. 11.4.1 Public fear of a development Planning is a material matter, developments have been refused planning approval where there was an overwhelming public concern of a health risk.<sup>93</sup></p>
Work with Ecodesign Centre Wales to explore potential for a reduction in the legacy impact of mastic.	<b>Scope out - no health impact due to exploratory nature of the action.</b>		
Preparation of a whole life cycle costing study into the impact of two common types of insulation product	<b>Scope out - no health impact</b>		
Development of work programme with insulation manufacturer to explore non-legacy alternatives	<b>Scope out - no health impact due to exploratory nature of the action.</b>		

<sup>87</sup> Waste Incineration and Public Health, Committee on Health Effects of Waste Incineration Board on Environmental Studies and Toxicology Commission on Life Sciences National Research Council, 1999

<sup>88</sup> <http://www.defra.gov.uk/ENVIRONMENT/waste/strategy>

<sup>89</sup> Health Protection Agency Position Paper on Municipal Solid Waste Incineration, September 2009. <http://hpa.org.uk/hpa/chemicals/MSWIpositionpaper.htm>

<sup>90</sup> Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste;

<sup>91</sup> Centre for Economic and Business Research Limited, The Economic Impact of an EfW incinerator in Newhaven. 2003.

<sup>92</sup> Cluttons. Residential Price Forecasts. 2005. [http://www.cluttons.com/clientupload/pdf/research/ResidentialMarketForecasts\\_March2005.pdf](http://www.cluttons.com/clientupload/pdf/research/ResidentialMarketForecasts_March2005.pdf)

<sup>93</sup> <http://www.iegmp.org.uk/report/summary.htm>

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Actions	Health Impact	Recommendation	Evidence
Support Welsh C&D businesses to meet targets set in Towards Zero Waste Describe nature of support e.g. seminars / helpline / web tools / company visits / signposting to grant support (e.g. WRAP products)	<b>Scope out - no health impact</b>		
Development of communications plan to include: Marketing; Publicity / advertising; Literature; Events; Database; Website	<b>Scope out - no health impact</b>		
Maintain database of relevant businesses	<b>Scope out - no health impact</b>		
Ensure CEW website is regularly updated to reflect new initiatives / guidance / support available	<b>Scope out - no health impact</b>		

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