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# Towards Zero Waste
# One Wales: One Planet

## Draft Construction and Demolition Sector Plan

**Sustainability Appraisal**

November 2011

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**CONTENTS**

**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 remaining Sector Plans, which comprise of the following :

- Collections Infrastructure and Markets (CIM) Sector Plan;
- Construction and Demolition (C&D) Sector Plan;
- Food Manufacture Service and Retail (FMSR) Sector Plan;
- Public Sector Plan;
- Industrial and Commercial (I&C) Sector Plan;
- Municipal Sector Plan Part 2 (MSP2) ;
- Agriculture Sector Plan;

**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 C&D Sector 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 C&D Sector Plan.

This report considers as a starting point a revised version of the information provided on the SA/SEA, HIA and HRA conducted for TZW and the SA/SEA/HIA/HRA of the Municipal Sector Plan Part 1 (MSP1) following the scoping report consultation responses. Comments received during the consultations on the CIM and FMSR sector plans which took place during Spring 2011 have also been considered in the preparation of this report.

This report is being issued for public consultation alongside the draft C&D Sector Plan. 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 C&D Sector Plan 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 C&D Sector Plan?

**The C&D Sector Plan**
The C&D Sector Plan is primarily to guide action by construction companies, demolition companies, civil engineering organisations and general building operators of all sizes from sole-trader to large scale companies operating and working across Wales. It also identifies what the Welsh Government will do, including the delivery bodies that it funds.

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 C&D Sector Plan compared to not producing the C&D Sector Plan. 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 C&D Sector Plan. 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 C&D Sector Plan 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 undertaken previously on the TZW Strategy SA and the MSP1 SA, the SA scoping report of 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 version of the sustainability framework was adopted to assess the sustainability of the C&D Sector Plan 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

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| | A matrix was produced to assess whether each C&D objective is broadly compatible or not compatible with SA objectives, or whether there was uncertainty over compatibility or no relationship between the objectives.<br><br>Screening of Actions to identify actions for inclusion in the SA;<br>A screening of actions is the process to identify which actions proposed in each Sector Plan can be taken forward to the SA. For consistency, this screening assessment use the reasons for omission of action SA used in the MSP1 SA actions screening.<br><br>Assessment of Actions<br>This stage considers the social, environmental and economic effects of each action being considered in the process of elaboration of the C&D Sector Plan if taken forward to SA.<br><br>Description of Cumulative Effects<br>Potential for secondary, cumulative and/or synergistic effects were also considered and described as part of the assessment of the actions.<br><br>Consideration of Reasonable Alternatives<br>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.<br><br>**Habitats Regulations Assessment**<br><br>The HRA was undertaken in parallel with the SA allowing feedback of the outputs from the assessment process at the earliest stage.<br><br>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 C&D Sector Plan is likely to have significant effects upon Natura 2000 sites.<br><br>Through the HRA screening it has not been possible to categorically demonstrate that C&D Sector Plan will not have any likely significant effects upon Natura 2000 sites, the Natura 2000 network or Ramsar sites. Given the uncertainty of significant effects associated with the plan, 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.<br><br>**Health Impact Assessment**<br>The HIA was undertaken in parallel with the SA allowing feedback of the outputs from the Appraisal process at the earliest stage.<br><br>The purpose of an HIA is to identify and assess both the beneficial and detrimental effects of the draft C&D Sector Plan, enhance the benefits whilst minimising its potential detrimental effects from its recommendations.<br><br>A number of potential opportunities and barriers to health and well-being were |

identified through the HIA of the C&D Sector Plan and recommendations have been proposed. These are listed below:

- The C&D Sector Plan provides an opportunity for a considerable positive health effect upon economy and employment as it promotes new markets for material reuse and the practice of deconstruction rather than demolition.
- A strong association exists between long-term unemployment and poor health. As such, where the C&D Sector Plan generates new employment opportunities it also provides a positive heath impact on the employment itself and the general economy.
- Promoting the use of Welsh ecodesign products would have a direct positive health effect upon employment, economy and the environment as ecodesign products would be locally sourced.
- A reduction in construction and demolition waste disposal through mandatory measures would result in a reduction in emissions from waste processing and disposal. This will provide direct positive health benefits to both social capital and the environment.
- Actions involving the establishment of new facilities were assessed as potentially inflicting partially negative health impacts on the local environment and on the social capital and community cohesion. This was due to a potential for increase in pollutant emissions (e.g. dust and combustion products) and to noise disruption to the neighbouring community.
- Phasing out of hazardous materials has been promoted under 'Sustainable Construction Products'. This action would directly result in a positive impact upon the environment, should this be successful.

**Sustainability Appraisal Findings**

<u>Assessment of Actions</u>

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

<u>Description of Cumulative Effects</u>

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 C&D plan.

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 C&D 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 C&D plan

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| | 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 should be considered at local level through the planning application process.<br><br>The cumulative effects of the draft C&D plan with other plans, programmes and projects on the health SA objective is difficult to predict. At a strategic level, it is more likely that cumulative health effects will be positive.<br><br>The C&D Sector Plan contains actions linked to other TZW Sector Plans, such as the Collections, Infrastructure and Markets Sector Plan, the Industrial and Commercial Sector Plan and the Public Sector Plan. The positive effects of those plans can enhance positive effects and offset potential adverse effects generated by the C&D Sector Plan.<br><br><u>Assessment of Alternatives</u><br><br>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).<br><br>The results of the options assessment against the waste infrastructure and waste management indicate that:<br><br>• 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<br><br>• 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, statutory bans, accredited training and increase of landfill tax.<br><br>The assessment also indicates that:<br><br>• 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 and health objectives; Option 3 is likely to have more positive effects on these objectives than the other two options. Actions such as implementation of legislation/policy, mandatory targets, statutory bans and increase of landfill tax will enhance the positive effects of the other two Options within a shorter timeframe.<br><br>• The three Options are likely to have very limited effect in terms of increasing broad civic engagement in waste practice as they focus on actions only for key stakeholders within the C&D sector (i.e. client organisations, designers, product manufacturers, contractors, waste management industry, etc). |

**Monitoring**

The Welsh Government will be responsible for the implementation of a monitoring strategy for the C&D Sector Plan. Monitoring involves measuring indicators which establish a link between implementation of the C&D Sector Plan 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 C&D Sector Plan can be effectively measured and monitored after its adoption.

Most of the 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 C&D Sector Plan. As an overall, if proposed mitigation and enhancement measures are incorporated in the draft C&D Sector Plan, 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**

<u>Consultation</u>

This report will be updated to incorporate the results of consultation of this report and changes during the development of the final C&D Sector Plan.

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 C&D Sector Plan 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 C&D Sector Plan?

<u>Other steps</u>

1. The consultation comments will be reviewed and the C&D Sector Plan will be amended accordingly.
2. A Post-adoption Statement will be issued to summarise how the SA has influenced in the development of the C&D Sector Plan.

The consultation period will run until the 31st January 2012. 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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**ABBREVIATIONS**

The following abbreviations are used in this Sustainability Appraisal Report:

| | |
|---|---|
| AD | Anaerobic Digestion |
| AQMA | Air Quality management Areas |
| AONB | Area of Outstanding Natural Beauty |
| APIS | Air Pollution Information System |
| ARID | Accelerating Reprocessing Infrastructure Development |
| ARRN | Accredited Reuse & Repair Network |
| BREEAM | Buildings Research Establishment Environmental Assessment Method |
| BSI | British Standards Institution |
| cSAC | Candidate Special Area of Conservation |
| CA | Civic Amenity |
| CCW | Countryside Council for Wales |
| CEW | Construction Excellence in Wales |
| CHETRE | Centre Health Equity Training, Research and Evaluation |
| C&D | Construction and Demolition |
| CIM | Collections Infrastructure and Markets |
| CLOs | Compost-like-outputs |
| DECC | Department of Energy and Climate Change |
| DEFRA | Department for Environment, Food and Rural Affairs |
| DE&T | Department for the Economy and Transport |
| EDC | Ecodesign Centre |
| EEE | Electrical and electronic equipment |
| EfW | Energy from Waste |
| EIA | Environmental Impact Assessment |
| EC | European Commission |
| EFQM | European Framework for Quality Management |
| ERDF | European Regional Development Fund |
| EU | European Union |
| FEV | Forced Expiratory Volume |
| FFMDD | Food, Fish and Market Development Division |
| FMSR | Food Manufacture Service and Retail |
| FSA | Food Standards Agency |
| GHG | Greenhouse Gas |
| GVA | Gross Value Added |

| | |
|---|---|
| HCI | Household, Commercial, Industrial |
| HIA | Health Impact Assessment |
| HRA | Habitats Regulations Assessment |
| HWRC | Household Waste Recycling Centres |
| IBA | Incinerator Bottom Ash |
| I&C | Industrial and Commercial |
| ILW | Intermediate Level Waste |
| IROPI | Imperative Reasons of Overriding Public Interest |
| LACORS | Local Government Regulation, formerly the Local Authorities Coordinators of Regulatory Services |
| LLW | Low Level Waste |
| LULUCF | Land Use, Land-Use Change and Forestry |
| MBT | Mechanical Biological Treatment |
| MRF | Materials Recovery Facility |
| MSP | Municipal Sector Plan |
| MSP1 | Municipal Sector Plan Part 1 |
| MSP2 | Municipal Sector Plan Part 2 |
| MTAN | Minerals Technical Advice Notes |
| NDA | Nuclear Development Agency |
| $NO_2$ | Nitrogen Dioxide |
| ODPM | Office of the Deputy Prime Minister |
| PAS | Publicly Available Specification |
| $PM_{2.5}$ | Particle Matter (with diameter less than or equal to 2.5 micron) |
| $PM_{10}$ | Particle Matter (with diameter less than or equal to 10 micron) |
| PPP | Policies, Plans and Programmes |
| QP | Quality Protocol |
| SA | Sustainability Appraisal |
| SAC | Special Area of Conservation |
| SD | Sustainable Development |
| SDC | Sustainable Development Commission |
| SEA | Strategic Environmental Assessment |
| SEED | Sustainability and Environmental Evidence Division |
| SM | Scheduled Monument |
| SMEs | Small/Medium Enterprises |
| SoE | State of Environment |
| SPA | Special Protection Area |
| SSSI | Sites of Special Scientific Interest |

| | |
|---|---|
| TZW | Towards Zero Waste |
| VOCs | Volatile Organic Compounds |
| WG | Welsh Government |
| WAW | Waste Awareness Wales |
| WEEE | Waste Electrical and Electronic Equipment |
| WRAP | Waste Resources and Action Programme |
| WSB | Waste Strategy Branch |
| WTS | Waste Transfer Stations |

# 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 The Part 1 Municipal Sector Plan (MSP1) was the first of the Sector Plans to have been prepared and subject to SA/SEA, HRA and HIA. The draft MSP1 and supporting appraisals were launched for public consultation in June 2010 and ended on 13 September 2010.

1.1.6 Parsons Brinckerhoff has been commissioned to support Welsh Government by undertaking the SA/SEA, HIA and HRA processes for the remaining Sector Plans, which comprise the following:

- Collections Infrastructure and Markets (CIM) Sector Plan;
- Construction and Demolition (C&D) Sector Plan;
- Food Manufacture Service and Retail (FMSR) Sector Plan[1];
- Public Sector Plan;
- Industrial and Commercial (I&C) Sector Plan;
- Municipal Sector Plan Part 2 (MSP2); and
- Agriculture Sector Plan.

[1] This sector plan was formerly referred to as the 'Retail Waste Sector Plan'.

## 1.2 The SA Process

1.2.1 Welsh Government has committed to the consideration of the sustainability effects of the C&D Sector Plan and to consider ways in which it can be made more sustainable. Sustainability Appraisal is an appraisal of the economic, social and environmental sustainability of a plan. In this case, the C&D Sector Plan is being considered. In line with the commitments set out by Welsh Government, the SA of the sector plans 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 C&D Sector Plan 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 C&D Sector Plan 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 C&D Sector Plan and 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 of the Sector Plans is based on that set out in the Practical Guide[2]. This breaks the SEA process down into five key stages (A-E), summarised in Table 1.1 below for the C&D Sector Plan.

[2] Office of the Deputy Prime Minister (ODPM) (September 2005), *A Practical Guide to Strategic Environmental Assessment Directive.* London: HMSO.

**Table 1.1: The C&D Sector Plan SA Process**

| SA/SEA Stage | The Construction and Demolition Sector Plan SA |
|---|---|
| **Stage A:** Setting the context and objectives, establishing the baseline and deciding the scope | A Scoping Report for all TZW Sector Plans (including the C&D Sector Plan) was produced in September 2010.<br>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.<br>The report was issued for consultation to statutory consultees from 20 September 2010 to 25 October 2010.<br>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.<br>A review of the HIA and HRA conducted for TZW and the MSP1 was also undertaken. |
| **Stage B:** Developing and refining alternatives and assessing effects | 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 C&D Sector Plan intends to consider and assess alternatives based on the Sector Plan actions.<br>The SA process followed was established by the SA for TZW and MSP1.<br>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. The screening criteria used followed the approach set out on the MSP1. 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.<br>An HRA screening assessment and an HIA of the C&D Sector Plan were undertaken in parallel with the elaboration of this report and their findings have been incorporated in this report. |
| **Stage C:** Preparing the Environmental Report | This report presents a full SA of the draft C&D Sector Plan.<br>The approach followed was established in MSP1 and has been adopted for the C&D Sector Plan to ensure consistency in throughout the SA process for all Sector Plans. |
| **Stage D:** Consulting on the draft plan or programme and the Environmental Report | This SA report will be made available for public consultation along with the draft C&D Sector Plan, 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 C&D Sector Plan. |

| SA/SEA Stage | The Construction and Demolition Sector Plan SA |
|---|---|
| **Stage E:** Monitoring the significant effects of implementing the plan or programme on the environment | Monitoring will be undertaken following the adoption of the C&D Sector Plan. |

## 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 C&D Sector Plan 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 C&D Sector Plan.

1.3.2 This report is based on the information provided on the Scoping Report for the TZW Sector Plans and its consultation responses, the SA/SEA, HIA and HRA conducted for TZW and the SA/SEA/HIA/HRA of the preceding Sector Plans (MSP1, FMSR Sector Plan and CIM Sector Plan).

## 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 C&D Sector Plan | Sets out the background and contents to the C&D Sector Plan. |
| 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 C&D Sector Plan SA. |
| Section 4 | Context, Baseline and 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 plan 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 C&D Sector Plan HIA and how they have been |

| Section | Title | Description |
|---|---|---|
| | | incorporated into this report. |
| Section 8 | Habitats Regulations Assessment | Presents a summary of findings of the C&D Sector Plan HRA and how they have been incorporated into this report. |
| Section 9 | Implementation and Monitoring | Sets out monitoring measures of potential predicted effects of the C&D Sector Plan 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

1.7.1 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[3].

1.7.2 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'.

Municipal Sector Plan Part 1

1.7.3 The SA of MSP14 was published alongside the draft MSP1 in June 2010. In line with the requirements of the SA/SEA process the Statutory Environmental Bodies were consulted on the scope of the MSP1 Sector Plan using a Scoping Report addendum in April 2010, and comments were incorporated into the SA report. The draft MSP1 together with the SA/SEA, HRA and HIA reports went through public consultation from 21 June 2010 until 13 September 2010. The comments received as a result of this consultation have also been reviewed and incorporated into the remaining sector plans and supporting documents as appropriate[5].

Sustainability Appraisal Scoping Consultation (September 2010)

1.7.4 The SA Scoping report for all TZW Sector Plans was produced in September 2010, which was sent to statutory consultation bodies identified in the SEA regulations. The consultation period run from 20th September 2010 to 25th October 2010.

[3] www.wales.gov.uk/waste www.cymru.gov.uk/gwastraff
[4] Further information on the SA of the MSP1 is available at:
http://new.wales.gov.uk/docs/desh/consultation/100621wastesustainabilitysummaryen.pdf
[5] www.wales.gov.uk/waste www.cymru.gov.uk/gwastraff

1.7.5 The scoping consultation sought views from statutory consultation bodies 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.

1.7.6 A summary of the scoping consultation responses relevant and how they have been taking into account is provided in Appendix A.

1.7.7 In line with the requirements of the SA/SEA process, the Statutory Environmental Bodies were consulted on the SA scope of the remaining seven Sector Plans using a single SA Scoping Report. Responses to the SA Scoping Report were received from all statutory consultees:

- Cadw;
- Countryside Council for Wales (CCW);
- English Heritage;
- Environment Agency;
- Environment Agency Wales; and
- Natural England.

1.7.8 The comments, responses and resulting actions were included in Appendix A of the SA Report.

CIM Sector Plan

1.7.9 The CIM SA report was made available for public consultation along with the draft CIM Sector Plan from 10 March 2011 to 10 June 2011, to seek the views of stakeholders (including the public) on the approach undertaken and the conclusions in the SA report. Views were also sought on how to improve the sustainability of actions presented in the draft CIM Waste Sector Plan.

1.7.10 The comments, responses and resulting actions from the consultation on the SA Scoping report were included in the SA Report's Appendix A of the CIM Waste Sector Plan.

1.7.11 A post adoption statement is currently under preparation; this report will describe how the SA/SEA process and findings have influenced in the development of the final CIM Waste Sector Plan and the monitoring of effects of its implementation.

FMSR Sector Plan

1.7.12 The FMSR SA report was made available for public consultation along with the draft FMSR Sector Plan from 22 March 2011 to 22 June 2011, following the same approach as the consultation on the CIM Sector Plan.

1.7.13 The comments, responses and resulting actions from the consultation on the SA Scoping report were included in the SA Report's Appendix A of the FMSR Sector Plan.

## 1.8 Consultation on this Report

1.8.1 This Report is being issued for public consultation alongside with the draft C&D Sector Plan. 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 C&D Sector Plan 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 C&D Sector Plan?

1.8.2 The consultation period for this Sustainability Appraisal Report, is open until 31st January 2012.

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:

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## 2 THE CONSTRUCTION AND DEMOLITION SECTOR PLAN

### 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.

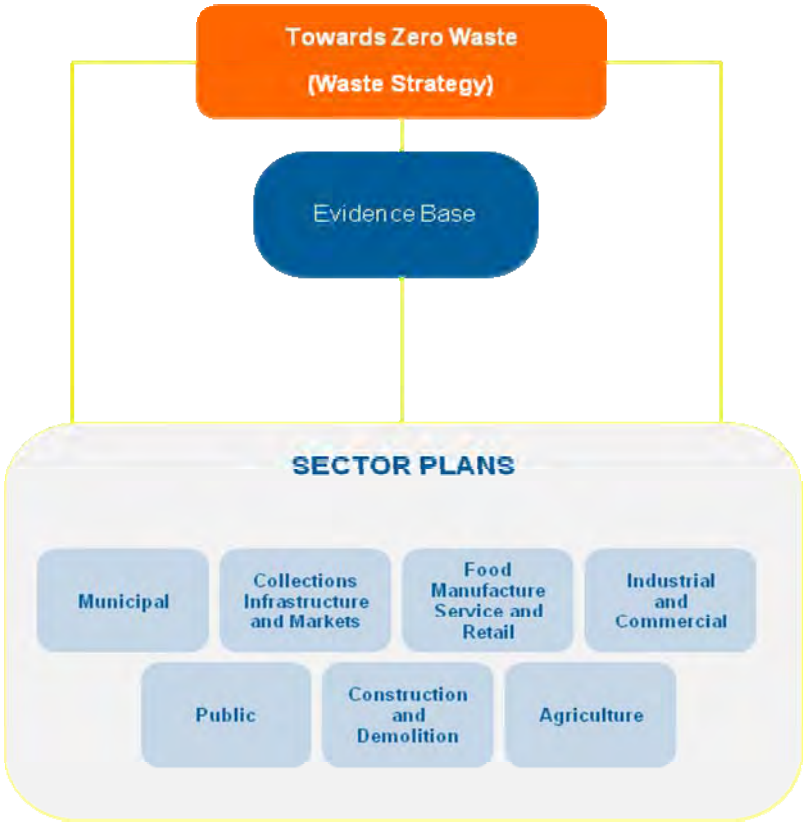


**Figure 2.1 – Welsh Government's Waste Management Strategy Hierarchy**

2.1.3 The report prepared for the *Welsh Government on the Ecological Footprint impact of the Welsh Waste Strategy* (ARUP, 2009), considered that recycling should not be the primary objective of the waste strategy and it should be realigned towards the objectives of sustainable consumption and production. In addition to a 70% recycling target for 2025, the size of the ecological footprint of Welsh waste could be significantly reduced only after reduction and reuse.

2.1.4 TZW's three priority areas[6] for waste reduction are:

[6] TZW One Wales One Planet: A Consultation on a New Waste Strategy for Wales (2009)

- Food waste –working with food producers, food retailers and food industries such as hospital catering facilities;
- Paper and card waste; and
- Chemical waste from commercial and industrial sector.

2.1.5 TZW concentrates on the following areas for action for recycling:

- Diverting food waste from landfill to anaerobic digestion (AD) plants;
- Recycling paper and card; and
- Recycling metals.

## 2.2 Scope of the C&D Sector Plan

2.2.1 The C&D Sector Plan has a primary aim to guide action by construction companies, demolition companies, civil engineering organisations and general building operators of all sizes from sole-trader to large scale companies operating and working across Wales. It also identifies what the Welsh Government will do, including the delivery bodies that it funds.

2.2.2 In addition, the C&D sector has a number of other stakeholders with an influence throughout the life cycle of a construction project. Therefore, the C&D sector plan will also be of interest to architects & designers, planning and building control professionals, manufacturers, retailers & suppliers of building materials, the waste management industry and anyone who commissions construction projects (whether privately or public sector).

2.2.3 Responsibility for delivery is identified for each sector involved in this plan, with the Welsh Government driving and overseeing its delivery in partnership with the delivery bodies.

2.2.4 The C&D Sector Plan covers construction and demolition companies of all sizes from sole operators to large organisations operating and working on construction and development activities in Wales and which fall under one or more of the following four sub-sectors:

- Construction companies,
- Demolition companies;
- Civil engineering companies; and
- General building companies.

2.2.5 It will extend to waste materials which are directly generated by a C&D business conducting construction or demolition activities in Wales no matter the source of the waste and extend to all types of construction development and to each phase within these developments (demolition, site clearance, sub-structure, super-structure, and fittings). It also covers wastes generated by the sector in relation to activities involved in renovations and maintenance of existing building structures.

2.2.6 It deals solely with the wastes generated by these organisations and in the main relates to those waste types listed in Chapter 17 of the List of Wastes (Wales) Regulations 2005[7], although it also includes other wastes generated by these

[7] 2005 No. 1820 (W.148)

organisations arising from their construction and demolition activities. 'Towards Zero Waste' sets out targets for reducing waste arisings and identified priority materials for each sector whose reduction would have the most significant impact on Wales' ecological footprint. For the Construction and Demolition Sector, these waste materials are:

- Wood;
- Plastic;
- Metal;
- Insulation and gypsum and
- Hazardous waste.

2.2.7 The C&D Sector Plan identifies opportunities and actions where the C&D Sector and relevant stakeholders can contribute to delivering the targets and objectives required to meet the sustainability objectives of 'Towards Zero Waste'.

2.2.8 The Plan, with associated waste strategy documents as referred to in 'Towards Zero Waste', will implement the revised Waste Framework Directive[8] (WFD), specifically:

- The role of the Waste Hierarchy in determining the most appropriate methods of dealing with the priority C&D waste materials (Article 4.1 and 4.2);
- The role of Extended Producer Responsibility as a means of encouraging the design of products in order to reduce their environmental impacts and the generation of waste in the course of their production and subsequent use (Article 8.2);
- Article 11.2(b), the preparing for re-use, recycling and other material recovery, including backfilling operations using waste to substitute other materials, of non-hazardous construction and demolition waste excluding naturally occurring material defined in category 17 05 04 in the list of waste shall be increased to a minimum of 70 % by weight;
- The identification of measures to improve the collection of C&D waste data to report on targets (Article 11.5);
- The identification of specific special arrangements for certain C&D wastes (Article 28.3(b); and
- The identification of appropriate waste prevention actions and programmes that contribute to the delivery of waste prevention objectives (Article 29 and Appendix IV)

2.2.9 The C&D Sector Plan does not extend to construction waste materials generated by householders arising from work carried out by contractors, which is collected by Welsh Local Authorities and is specifically dealt with under the Municipal Sector Plan[9]. The Sector Plan also does not extend to construction waste materials generated by the commercial and industrial organisations arising from work carried out by contractors but disposed of by the commercial and industrial organisation directly. This will be covered in the Industrial and Commercial Sector Plan.

[8] EU (2008) Waste Framework Directive (Revised) 2008/98/EC
[9] Welsh Government, Draft Municipal Sector Plan, Part 1, June 2010, page 9

## 2.3 Content

2.3.1 The draft C&D Sector Plan provides a record of the proposed objectives, targets and actions for the construction and demolition sector and associated stakeholders. 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 TZW sets a number of targets for the C&D sector, which are as follows (See also Table 2.1 below):

**Table 2.1 Waste Management Targets for C&D Waste**

| Waste Management Option | 2015 | 2020 | 2050 |
|---|---|---|---|
| Waste Prevention (including reuse) | | | Annual waste prevention target of 1.4% (based of the 2005 baseline) for the C&D waste managed off site. |
| Preparation for Reuse | Separate targets have not been established because of a lack of data available on the potential for reuse in the C&D sector. Preparation for reuse has been included in the targets established for recycling in Towards Zero Waste. | | |
| Recycling | | Increased to a minimum of 90% by weight. | |
| Other Recovery and Disposal | 50% of the amount of C&D waste produced in Wales that was landfilled in the 2007 baseline | 75% of the amount of C&D waste produced in Wales that was landfilled in the 2007 baseline | |

Source: Welsh Government, Working Draft C&D Sector Plan, September 2011

## 2.5 Approach

2.5.1 The approach followed in the Plan is to consider the situation with regard to the different stakeholders and their role in delivering appropriate actions in relation to:

- The prevention of waste arising from the C&D sector throughout the life cycle of a construction and the different construction phases (demolition; site clearance, sub-structure, super-structure, fittings and renovations);
- Increasing the reuse and recycling opportunities for C&D wastes by the sector and stakeholders throughout the life cycle of a construction and the different construction phases;
- Increasing, where relevant and appropriate other recovery methods for waste arising from the C&D sector throughout the life cycle of a construction and the different construction phases;
- Reducing the quantities of waste disposed to landfill by the C&D sector;

- Reducing the quantities of future hazardous and legacy wastes generated by the C&D sector throughout the life cycle of a construction and the different construction phases.

2.5.2 The Plan outlines the actions that will be developed through further engagement with the relevant stakeholders. This will lead to the provision of clear guidance and support on roles and responsibilities to ensure that TZW targets are met.

# 3 APPRAISAL METHODOLOGY

3.1.1 In line with the commitments made by Welsh Government in TZW, the C&D Sector Plan 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 and prior the elaboration of the Environmental 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.

Review of other relevant plans, policies, programmes and environmental protection objectives

3.2.2 An initial review of relevant policies, plans, programmes and environmental protection objectives (referred to hereafter as PPP) was undertaken to inform the preparation of TZW and its SA/SEA (2009), and the Sustainability Appraisal of the MSP1 (2010).

3.2.3 For consistency, the PPP review undertaken for TZW and MSP1 were used as a starting point. As the SA for each of the remaining Sector Plans is undertaken the PPP review will be continuously maintained as a 'live' document, and will be updated with relevant emerging policies, plans and programmes.

3.2.4 A list of PPPs reviewed to date is presented in Section 4 of this report, with further detail provided in Appendix B.

Baseline information

3.2.5 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.

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

3.2.7 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.

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

Identification of sustainability issues and opportunities

3.2.9 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.

3.2.10 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 and PPP available after the publication of MSP1, the CIM Sector Plan and the FMSR Sector Plan.

3.2.11 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.

3.2.12 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

3.2.13 The C&D Sector 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.

3.2.14 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:

- The action is related to administrative / procedural measures;
- The action provides a signpost to other legislation, strategy, targets and guidance;
- The action sets out measures that may be considered in the future once further research has been undertaken;
- The action forms part of a future Plan which will be subject of SA; and
- The action was included in TZW and was already subject to SA.

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 C&D Sector Plan 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 C&D Sector Plan and in consultation with the Welsh Government.

3.9.2 Limitations were encountered during the elaboration of the SA of the C&D Sector Plan. 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 MSP1 SA was used as a starting point for this assessment to ensure alignment of the C&D Sector Plan sustainability objectives. Where applicable, and following the consultation responses, this information has been updated.

3.9.4 The use of a screening of actions criteria previously set up on the MSP1 SA, limits the number of the actions taken forward for SA. Actions taken forward for SA, which have been covered in other waste sector plans, will be assessed under relevant waste sector plans SA.

# 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), and the Sustainability Appraisal of the MSP1 (2010). Since the publication of the MSP1 SA; and in response to the Scoping Consultation for this Sector Plan, further PPP have been identified for review.

4.1.2 Appendix B contains a full list of PPP reviewed and considered to identify sustainability objectives in the preparation of the TZW and MSP1. For consistency, the SA/SEA uses the outcome of this PPP review as a starting point. As the SA for each of the remaining Sector Plans is undertaken the PPP review will be maintained as a 'live' document, and will be updated with relevant emerging policies, plans and programmes. The ongoing review will continue to inform the SA Objectives and should any new PPP relevant to the Sector Plans came into force these will be used to review and update the sustainability objectives if necessary. For further information on the PPP review undertaken for TZW and the MSP please refer to the Appendix A and Chapter 2 of the MSP1 SA, and Annex A and Chapter 4 of TZW SA.

4.1.3 Relevant PPP that have come into effect since the publication of TZW SEA and the MSP1 SEA, have also been reviewed as part of the C&D Sector Plan SA, and are listed in Table 4.1 below together with PPP identified in scoping consultation response and other Sector Plan Consultations (see Appendix B for more detail).

**Table 4.1 – List of additional PPP reviewed in response to the consultation comments**

| Policy/Plan/Programme Reviewed |
|---|
| **Europe** |
| EU (2003) CAP Single Payment scheme Cross Compliance Regulation (Annex III Council Reg No.73/2009) |
| EU (2008) Ambient Air and Cleaner Air for Europe Directive 2008/50/EC |
| EU (2006) Registration, Evaluation, Authorisation and Restriction of Chemicals. Regulation (EC) 1907/2006. |
| **UK** |
| Ancient Monuments and Archaeological Areas Act 1979 |
| Town and Country Planning Act 1990 |
| Planning (Listed Building and Conservation Areas) Act 1990 (as amended in 2009) |
| Planning (Hazardous Substances) Act 1990 |
| Department for Communities and Local (2010) PPS5 Planning for the Historic Environment: Historic Environment Planning Practice Guide |
| The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 |
| DEFRA/Welsh Government (2010) Environmental Permitting (England and Wales) Regulations 2010 |
| Department for Environment, Food and Rural Affairs (2010) Draft Hazardous Waste National Policy Statement (NPS) England. |
| **Wales** |
| Welsh Assembly Government (June 2010) Towards Zero Waste, One Wales: One Planet. The Summary of the Overarching Waste Strategy Document. |

| Policy/Plan/Programme Reviewed |
|---|
| Welsh Assembly Government (June 2010) Towards Zero Waste, One Wales: One Planet. The Welsh Assembly Government's Response to the Issues of Raised in the Consultation. |
| WAG (2009) The Welsh Historic Environment Strategic Statement Action Plan |
| WAG (2007) Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process |
| WAG Climate Change Strategy for Wales (Launched 7th Oct 2010) |
| WAG (2007-2013) Rural Development Plan Programme (2007-2013) |
| WAG (2009) Farming Food and Countryside: Building a Secure Future Strategy. |
| WAG (2010) Food for Wales, Food from Wales 2010-2020 (currently subject to consultation) |
| Planning Policy Wales (Edition 4, February 2011) |
| TAN 15 –Development and Flood Risk (2004) |
| TAN 6 Planning for Sustainable Rural Communities (includes sustainable agriculture and rural services) July 2010. |
| TAN 8 Renewable Energy (2005) |
| TAN 21 Waste (2001) |
| TAN 18 planning for transport infrastructure (2007) |
| Minerals Planning Policy Wales 2001 |
| Minerals Technical Advice Notes (MTAN) Wales 1 Aggregates (2000) |
| Minerals Technical Advice Notes (MTAN) Wales 2 Coal (2009) |
| Welsh River Basin Management Plans (2009) |
| WAG Economic Renewal Programme: A New Direction 2010 |
| Environment Agency Wales' Corporate Plan -Working Together for a Better Wales (2010-15) |
| Natural Environment Framework (currently out to consultation) |
| WAG, The Welsh Soils Action Plan (consultation closed but final document not yet published) |

## 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 contain the baseline conditions considered for the MSP1 SA/SEA. The MSP1 SA/SEA amended those baseline conditions with further information that become available since publication of the TZW SA/SEA (Appendix B of MSP1 SA/SEA).

4.2.3 For consistency, the SA/SEA of the remaining Sector Plans will use baseline conditions described on the MSP1 SA/SEA and incorporate any information that becomes available since the publication of the MSP1 SA/SEA and the responses received as a result of the consultation on the MSP1 SA/SEA and this scoping report.

4.2.4 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 4.2 below.

4.2.5 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 4.2 presents relevant baseline conditions for each topic and the relationships between them.

**Table 4.2 - Baseline Information**

| Topic | Baseline Conditions | Related topics |
|---|---|---|
| **Air Quality** | Baseline Characteristics<br>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.<br><br>The UK Air Quality Strategy objectives have not been met, which has led to the declaration of 28 Air Quality management Areas (AQMAs) in Wales (as listed in the 2010 statistic for 'Number of People Living in AQMA' (StatsWales, 2010))<br><br>The main causes of pollution at urban sites are fine particles (PM10) and ozone.<br><br>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)[10].<br><br>Future trends:<br>The increase of road traffic is of concern it counteracts the effect of tighter emission control measures<br>The number of serious air pollution incidents has been declining in England and Wales since 2001.<br>Local air pollutants are likely to increase due to expanding air travel from Cardiff International Airport. | Climate Factors<br><br>Health<br><br>Ecological Impacts of Air Pollution<br><br>Resource Efficiency<br><br>Electricity from Renewable Sources |
| **Biodiversity and Geodiversity** | Baseline Characteristics<br>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.<br><br>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)[11]<br><br>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)<br><br>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.<br>Of the priority habitats with information available, the percentage of habitats | Landscape<br><br>Climate Factors<br><br>Cultural Heritage and Historic Environment<br><br>Ecological Impacts of Air Pollution<br><br>Birds<br><br>Soil<br><br>River Quality<br><br>Water and Flood Risk |

[10] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=6003
[11] Welsh Government, 2010. State of the Environment Report (Last updated, December 2010)
[12] 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.
[13] http://www.jncc.gov.uk/page-3753
[14] http://www.jncc.gov.uk/default.aspx?page=3320

| Topic | Baseline Conditions | Related topics |
|---|---|---|
| | 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).<br><br>Future trends:<br><br>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[12].<br>The aggregate indexes for Broad Habitats published by JNCC[13] suggest that 9 of the 14 Broad habitats in the UK are on average showing a tendency to decline.<br>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[14]. | |
| **Birds** | Baseline Characteristics<br>Wild bird populations are considered to be a good indicator of the broad state of wildlife and the countryside.<br><br>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)<br><br>Future trends<br>Farmed habitats continue to see a decline in bird species and this is expected to continue.<br>The overall population of breeding birds has been relatively stable over the short-term, this trend is expected to continue. (Welsh Government, 2010) | Landscape<br><br>Climate Factors<br><br>Biodiversity and Geodiversity<br><br>Ecological Impacts of Air Pollution |
| **Climate Factors** | Baseline Characteristics<br>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 | Ecological Footprint<br><br>Air Quality<br><br>Biodiversity and |

[15] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5758
[16] The Sustainable Development Annual Report 2009-2010

| Topic | Baseline Conditions | Related topics |
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| | increased during the same period[15] and non-CO2 GHG (Methane, Nitrous oxide and Hydrofluorocarbons) have decreased.<br>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).<br><br>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) [16].<br><br><u>Future trends:</u><br>A decrease of 10 per cent in emissions of the basket of greenhouse gases from Wales in 2008 has been estimated compared to base year emissions[17].<br>A net sink of greenhouse gases in Wales<br>predictions suggest that this sink will continue to decline, and estimates of methane and nitrous oxide emissions due to Land Use, Land-Use Change and Forestry (LULUCF) activities remain small<br><br>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.<br>Sea levels are forecast to rise. Wales has improved resilience to the impacts of climate change and this trend is expected to continue. | Geodiversity<br><br>Resource Efficiency<br><br>Water and Flood Risk<br><br>Health<br><br>Electricity from Renewable Sources |
| **Cultural Heritage and Historic Environment** | <u>Baseline Characteristics</u><br>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[18], and six designated historic wrecks. There are also 526 Conservation Areas designated for their local importance and 58 landscapes of historic interest[19]. 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.<br>The percentage of the sample of listed buildings in Wales that were classed as 'at risk' or 'vulnerable' has fallen slightly<br>in 2008.<br><br><u>Future trends</u>:<br>Overall there has been a rise in the number of SM which are 'stable' or 'improved', this trend is expected to continue.<br>The percentage of SMs which have deteriorated has reduced and this trend is also expected to continue. | Landscape<br><br>Biodiversity and Geodiversity<br><br>Resource Efficiency<br><br>Electricity from Renewable Sources |
| **Landscape** | <u>Baseline Characteristics</u><br>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 | Biodiversity and Geodiversity<br><br>Cultural Heritage and Historic Environment<br><br>River Quality |

[17] Welsh Assembly Government, 2010. State of the Environment Report (Last updated, December 2010)
[18] http://www.castlewales.com/cadw_rsk.html
[19] 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 |
|---|---|---|
| | infrequently and 14 per cent rarely or never used the outdoors for informal recreation[20].<br>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%[21] of the Welsh countryside is accessible for public access on foot. There are also 58 landscapes[22] of outstanding/special historic interest in Wales on the Cadw/CCW/ICOMOS UK register.<br><br>Future trends:<br>The distinctive character of the Welsh landscape has been and remains under threat and is declining. The quality and diversity of the natural and historic character of our landscape and seascape is maintained and enhanced (Welsh Government, 2010).<br>Future changes to the farming subsidy regime have the potential to result in significant changes to the landscape. | Soil<br><br>Waste<br><br>Water and Flood Risk<br><br>Population<br><br>Mobility<br><br>Social Accessibility |
| **Ecological Footprint** | Baseline Characteristics<br>Although there is a stable / no clear trend[23], 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[24]. 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'[25] 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.<br>Housing accounts for approximately 20% of Wales' ecological footprint[26].<br><br>Future trends:<br>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<br><br>Climate Factors<br><br>Ecological Impacts of Air Pollution<br><br>Resource Efficiency<br><br>Water and Flood Risk<br><br>Soil<br><br>Housing |
| **Ecological Impacts of Air Pollution** | Baseline Characteristics<br>A reduction in air pollution leads to increased life expectancy and ecological protection.<br><br>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.<br>There was a clear improvement [27]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.<br><br>Future trends:<br>The percentages of sensitive habitats exceeding critical loads for acid | Air Quality<br><br>Biodiversity and Geodiversity<br><br>Birds<br><br>Climate Factors<br><br>Soil<br><br>Water and Flood Risk<br><br>Health |

[20] This is the first survey of participation in outdoor recreation among adults living in Wales (Welsh Government, 2010).
[21] http://www.ccw.gov.uk/about-ccw/newsroom/latest-news/discovering-waless-natural-he.aspx
[22] http://www.cadw.wales.gov.uk/default.asp?id=108 and http://www.cadw.wales.gov.uk/upload/resourcepool/Caring%20for%20Historic%20Landscapes4584.pdf
[23] Stats Wales SoE (2010) http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5786
[24] Stats Wales SoE (2010): http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5786
[25] 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).

[26] The Sustainable Development Annual Report 2009-2010
[27] SoE (2010) Stats Wales: http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=10410

| Topic | Baseline Conditions | Related topics |
|---|---|---|
| | deposition and sensitive habitats where eutrophying pollutants exceeded critical loads are expected to decrease. | |
| **Electricity from Renewable Sources** | Baseline Characteristics<br>Electricity in Wales generated from renewable sources increased[28] from 3.5% in 2005 to 4.3% in 2008. In 2009, renewable energy resources provided 6% of the electricity generated in the UK[29].<br>The percentage of electricity generated in Wales from renewable sources has nearly doubled since 2002, reaching 4.3 per cent in 2008[30].<br>Future trends:<br>The promotion of renewable energy has been growing in Wales over recent years, and this trend is expected to continue. | Resource Efficiency<br><br>Ecological Footprint<br><br>Air Quality<br><br>Climate factors<br><br>Housing |
| **Resource Efficiency** | Baseline Characteristics<br>The ratio of carbon dioxide emissions to GVA in Wales has decreased by 12 per cent between 2005 and 2007[31].<br>The SoE[32] (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.<br>As at December 2010, there are 32 "live" cases of agricultural after use throughout Wales.<br>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[33] certified companies in Wales, with 12 of these companies achieving the highest rating (Level 5).<br><br>Future trends:<br>Although there is a stable / no clear trend in the proportion of construction and demolition waste reused and recycled, it is expected to increase. | Economy / Employment<br><br>Soil<br><br>Health<br><br>Waste |
| **River Quality** | Baseline Characteristics<br>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[34]. The percentage of river lengths in Wales of good or fair chemical quality, as the General Quality Assessment (GQA), has been consistently higher than 98 per cent since 1994. The percentage of river | Sustainable Water Management<br><br>Waste<br><br>Water and Flood Risk |

[28] SoE (2010) Stats Wales: http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=10390
[29] Defra SD National Indicator 4 (2010): http://www.defra.gov.uk/sustainable/government/progress/national/4.htm
[30] The Sustainable Development Annual Report 2009-2010
[31] The Sustainable Development Annual Report 2009-2010
[32] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5858
[33] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5853
[34] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5830#sustainable
[35] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5824
[36] WFD Method statement for the classification of surface water bodies. Monitoring Strategy (April 2011) Environment Agency

| Topic | Baseline Conditions | Related topics |
|---|---|---|
| | lengths of good chemical quality has remained fairly stable over the same period, peaking at 95.4 per cent in 2007[35].<br>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[36].<br>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.<br>The percentage of river lengths in Wales of good biological quality has steadily increased since 2000, peaking at 88 per cent in 2008[37].<br><br>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.<br><br>Future trends:<br>Due to the requirements of the WDF 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. | |
| **Soil** | Baseline Characteristics<br>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[38]. 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[39].<br>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[40].<br>Future trends:<br>There are areas of peat bog (including raised bog and fen peat) throughout Wales.<br>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[41]. | Waste<br><br>Resource Efficiency<br><br>Air Quality<br><br>Biodiversity and Geodiversity<br><br>Cultural Heritage and Historic Environment<br><br>Landscape |
| **Sustainable Water Management** | Baseline Characteristics<br>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[42].<br>Current assessment of the water resource management across the country indicates that the percentage of water resource 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.<br>The picture across England and 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.<br><br>Average per capita consumption in Wales has remained fairly stable<br>In Wales, people in measured households used an average of 117 litres per person per day in 2009-10[43].<br>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[44].<br><br>Future trends: | Water and Flood Risk<br><br>River Quality<br><br>Climate Factors |

[37] Sustainable Development Annual Report (2009-2010)
[38] Sustainable Development Annual Report (2009-2010)
[39] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=23027
[40] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5875
[41] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=23027

| Topic | Baseline Conditions | Related topics |
|---|---|---|
| | The percentage of water resource zones that are recording a deficit, and level of leakage will continue to drop into the future. | |
| **Waste** | Baseline Characteristics<br>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.<br>The volume of waste sent to landfill in 2009-2010 fell by 4% compared with 2008-09[45] and there has been a corresponding improvement in recycling performance with an estimated all-Wales average of 12.5%.<br>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[46].<br><br>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[47].<br><br>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.<br>The percentage of aggregates (excluding C&D waste) used from secondary and recycled sources in Wales has generally increased since 2004. 85 per cent of waste arising from C&D in Wales as secondary aggregates was subsequently recycled, re-used on site or re-used off site in 2005-06[48].<br><br>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[49].<br><br>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[50]. Most common types of fly-tipped waste include household waste and construction and demolition waste, followed by other commercial waste and green waste[51].<br><br>The total amount of C&D Waste arising in Wales in 2005-06 is estimated to be by 12.2 million tones. The majority of it arose from the Civil Engineering Sector (8.0 million tonnes), followed by the Construction (2.2 million tones), Demolition (1.4 million tonnes) and General Builders (431 thousand tonnes) sectors[52] .<br><br>Future trends:<br>Recovery and Recycling rates achieved in the UK from 2006 to 2010 show an increasing trend[53] and this is expected to increase in Wales through the implementation of TZW and Recycling targets for Producer Responsibility Obligations (Packaging Waste) Regulations 2010. | Soil<br><br>Ecological Footprint<br><br>Resource Efficiency<br><br>Education |

[42] The Sustainable Development Annual Report 2009-2010
[43] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5810
[44] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5787
[45] The Sustainable Development Annual Report 2009-2010
[46] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5807
[47] The Sustainable Development Annual Report 2009-2010
[48] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5859
[49] http://www.nda.gov.uk/ukinventory/summaries/wales.cfm
[50] http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=6808
[51] http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=6809
[52] Draft C&D Sector Plan
[53] Draft FMSR Sector Plan

| Topic | Baseline Conditions | Related topics |
|---|---|---|
| | Waste generation across Wales have decreased and levels of recycling have increased.<br>The amount of waste produced by household is expected to decrease.<br>The amount of waste recycled or composted is expected to increase.<br>Recycling rates for C&I and C&D waste will continue to increase.<br>Trends on C&D and commercial waste arisings are increasing and decreasing for industrial waste. | |
| **Water and Flood Risk** | Baseline Characteristics<br>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. [54].<br>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[55]. 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 assessed in 2010 were given good chemical status in 2010.<br>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.<br><br>There has been significant progress on building in sustainability into flood and coastal erosion risk management in 2009-10[56] through the update of the Flood and Water Management Act (2010).<br>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[57].<br>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[58].<br>Trends in radioactive discharges to the marine environment from major sources in Wales show a clear improvement form 1996 to 2008[59].<br>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[60].<br><br>Future trends:<br>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.<br><br>An increase of flooding (in both severity and frequency) is expected. | Climate Factors<br><br>River Quality<br><br>Sustainable Water Management |
| **Economy/ Economic Employment** | Baseline Characteristics<br>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.<br>Employment rates for men of working age are higher than those for women; however women employment has increased 12% from 1984 to 2010.<br><br>Future trends:<br>Employment rates in Wales have declined as a result of the economic | Benefit dependency and Workless Households<br><br>Child poverty<br><br>Pensioner poverty<br><br>Economic Output<br><br>Housing<br><br>Health |

[54] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5881&IF_Language=eng
[55] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5879
[56] The Sustainable Development Annual Report 2009-2010
[57] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=6002
[58] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5984
[59] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5826
[60] http://www.statswales.wales.gov.uk/TableViewer/document.aspx?ReportId=5878

| Topic | Baseline Conditions | Related topics |
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| | downturn. However the economy appears to be diversified and the percentage of working age in Wales has generally increased since 1984. | Population |
| **Benefit dependency and Workless Households** | Baseline Characteristics<br>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[61]. 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.<br><br>Future trends:<br>The percentage of working age people on key benefits is expected to stabilise in line with the UK economic trends. | Economy/ Economic Employment<br><br>Child poverty<br><br>Pensioner poverty<br><br>Population<br><br>Health |
| **Economic Output** | Baseline Characteristics<br>The GVA for Wales in 2009 increased £4 billion since 2005.<br>GVA per head in Wales increased from £13,723 in 2005 to £14,842 in 2009.<br>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.<br><br>Future trends:<br>The GVA and GVA per head in Wales are expected to be stable / increase slightly. | Economy/ Economic Employment<br><br>Population |
| **Social Accessibility** | Baseline Characteristics<br>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[62].<br><br>Future trends:<br>Social accessibility throughout Wales has increased for all five key services and this trend is expected to continue. | Mobility<br><br>Active community participation<br><br>Health<br><br>Education |
| **Active community participation** | Baseline Characteristics<br>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 [63].<br>The percentage of people involved in voluntary activities in Wales had increased from 2001 to 2009, and decreased slightly in 2010.<br><br>Future trends:<br>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[64]. | Social Accessibility<br><br>Mobility<br><br>Economy/ Economic Employment<br><br>Education |
| **Child poverty** | Baseline Characteristics<br>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.<br><br>Future trends:<br>Child poverty figures are expected to continue to be relatively stable. | Benefit dependency and Workless Households<br><br>Economy/ Economic Employment<br><br>Health |
| **Crime** | Baseline Characteristics<br>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 | Economy/ Economic Employment |

[61] The Sustainable Development Annual Report 2009-2010
[62] The Sustainable Development Annual Report 2009-2010
[63] The Sustainable Development Annual Report 2009-2010
[64] The Sustainable Development Annual Report 2009-2010

| Topic | Baseline Conditions | Related topics |
|---|---|---|
| | crimes in Wales per 10,000 households increased between 2004-05 and 2006-07, before falling to its lowest level in 2008-09[65].<br>Future trends:<br>Thefts to and from vehicles and British Crime Survey (BCS) vehicles related thefts are expected to decrease.<br>Burglaries in dwellings are expected to continue increasing.<br>BCS burglaries and robbery rates are expected to continue at the present rates | Health<br><br>Benefit dependency and Workless Households |
| **Education** | Baseline Characteristics<br>The percentage of all pupils at Key Stage 2 achieving the core subject indicator has increased from 61 per cent in 1999 to 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[66].The percentage of pupils assessed in Welsh at the end of Key Stages 1, 2 and 3 have all increased since 2000[67].<br><br>Future trends:<br>The proportion of people aged 19-21 with an NQF level 2 of education is expected to be stable.<br>The proportion of working age adults with an NQF level 4 of education is expected to rise. | Economy/ Economic Employment<br><br>Social Accessibility<br><br>Active community participation |
| **Health** | Baseline Characteristics<br>The infant mortality rate per 1,000 has decreased from 5.3 in 2007 to 4.1 in 2008.<br>There has been a sustained increase in life expectancy for both males and females since 1993-95[68].. 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 then 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.<br>The number of adults who reported key illnesses or health status has shown a stable trend from 2005 to 2009[69].<br><br>Future trends:<br>Infant mortality is expected to continue to decrease.<br>Life expectancy is expected to continue increase. | Air Quality<br><br>Economy/ Economic Employment<br><br>Crime<br><br>Education<br><br>Child poverty<br><br>Pensioner poverty |
| **Housing** | Baseline Characteristics<br>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[70].<br>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.<br>Future trends:<br>The number of unfit dwellings is expected to decline. | Economy/ Economic Employment<br><br>Social Accessibility<br><br>Electricity from Renewable Sources |
| **Mobility** | Baseline Characteristics<br>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.<br>The number of trips made per person per year by walking and cycling decreased from | Social Accessibility<br><br>Economy/ Economic Employment |

[65] The Sustainable Development Annual Report 2009-2010
[66] The Sustainable Development Annual Report 2009-2010
[67] The Sustainable Development Annual Report 2009-2010
[68] The Sustainable Development Annual Report 2009-2010
[69] http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=6312
[70] The Sustainable Development Annual Report 2009-2010

| Topic | Baseline Conditions | Related topics |
|---|---|---|
| | 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[71].<br>Future trends:<br>There has been a slight increase in the use of public transport and this is expected to increase.<br>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. | |
| **Pensioner poverty** | Baseline Characteristics<br>There has been little change in the percentage of pensioners in relative low-income households before housing costs[72].<br>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.<br><br>Future trends:<br>The number of pensioners living in low income households has decreased and this is expected to continue decreasing. | Benefit dependency and Workless Households<br><br>Economy/ Economic Employment<br><br>Health |
| **Population** | Baseline Characteristics<br>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.<br><br>Future trends:<br>The population of Wales is gradually increasing, mostly due to net in-migration from other parts of the UK.<br>Life expectancy is increasing and the population is ageing. | Economy/ Economic Employment<br><br>Economic Output<br><br>Benefit dependency and Workless Households<br><br>Mobility<br><br>Housing<br><br>Health<br><br>Crime<br><br>Social Accessibility |

## 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 C&D Sector Plan 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.

[71] The Sustainable Development Annual Report 2009-2010
[72] The Sustainable Development Annual Report 2009-2010

# 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 and MSP1. 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 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, this SA/SEA will use those key sustainability issues identified in the SA/SEA of MSP1 to appraise the sustainability of the Sector Plans and provide an update relevant to each Sector Plan as a result of the consultation responses received.

5.1.5 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

5.1.6 The SA/SEA of the remaining sector plans will continue to use these as the basis for the appraisal framework, updating them as necessary as new information comes to light during the process.

**Table 5.1 – Key Sustainability Issues**

| SA Topics | Key Sustainability Issues |
|---|---|
| **Economy** | • 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?<br>• Is there an appropriate labour force or will training and upskilling be required?<br>• Can the strategy provide an impetus to the Environmental Technology Sector and can R&D departments and can stakeholders such Universities be usefully engaged in this context?<br>• To encourage the development of the Environmental Technology Sector and can R&D departments and can stakeholders such as Universities be usefully engaged in this context?<br>• To encourage the investment in R&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.<br>• To offer longer term security of contract to commercial operators and a return on their investment, thereby increasing the attractiveness of investment in Wales.<br>• 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.<br>• 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.<br>• To use investment in new waste management infrastructure to act as a catalyst for regeneration in areas. |
| **Population Health and Well Being** | • 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<br>• 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.<br>• 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.<br>• 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.<br>• How to rely the need for, and promotion of individual and |

| SA Topics | Key Sustainability Issues |
|---|---|
| | corporate sustainability for waste production and disposal<br>• How to locate and develop waste management facilities to design-out crime.<br>• How to prevent instances of fly-typing<br>• How to promote a substantive increase in terms of participating households and levels of waste recycling.<br>• How to increase the scope of waste materials to be recycled and the means/mechanisms through which this will be facilitated<br>• To engender interest and engagement with the public in terms of personal responsibility and household/collective engagement in more sustainable activities such as recycling.<br>• To contribute towards enhance accessibility of services and facilities particularly amongst those with reduces mobility and lack of car ownership.<br>• To promote sustainable transportation of waste in terms of modes and services<br>• How to raise awareness and understanding of actual impacts, as opposed to perceived impacts surrounding management options and wider emerging technologies.<br>• 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.<br>• To address and allay public perceptions surrounding the deployment of certain waste technologies.<br>• 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.<br>• 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.<br>• To facilitate the deployment of safe, responsible, sustainable waste management from all sources: domestic, commercial industrial, etc.<br>• To tackle issues surrounding the perception of waste management practices and technologies and establish greater understanding of what this entails. |
| **Climatic Factors** | • 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.<br>• How to facilitate the level of engagement required in the absence of a full/adequate understanding and sometimes sceptical public over climate change.<br>• Whether regulation is required to enforce domestic/household participation and to escalate commercial/industrial sector participation and the acceptance of this.<br>• 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. |

| SA Topics | Key Sustainability Issues |
|---|---|
| | • To collectively reduce Wales' Carbon Footprint through strategic intervention across public and private sector operations.<br>• To channel procurement and spend in the pursuit of carbon constrained policies, plans and projects.<br>• 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.<br>• 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. |
| **Material Assets** | • 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.<br>• 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.<br>• 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.<br>• How to address the varied and multiple sources of waste (including construction, demolition & excavation, agricultural and quarry waste) and the handling or processing of such waste alongside that of municipal waste.<br>• How to address the needs of local authorities in meeting challenging targets given their different geographical and socio-economic contexts.<br>• 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.<br>• To create greater understanding of the challenge of progressing sustainability within the context of resource and waste management.<br>• 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.<br>• 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.<br>• 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.<br>• To prioritise the use of brownfield sites for the siting of new facilities.<br>• To promote and contribute to national, regional and local targets with respect to brownfield land use and more sustainable use or |

| SA Topics | Key Sustainability Issues |
|---|---|
| | land resources generally.<br>• 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.<br>• 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).<br>• 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. |
| **Air Quality** | • How to minimise impact to air arising from alternative forms of waste processing and management, recognising that relatively new technologies are emerging.<br>• 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. |
| **Biodiversity and Geodiversity** | • How to protect and enhance the biodiversity, flora and fauna of sites, designates and non-designated in stature.<br>• 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).<br>• To protect the integrity of designated (including Natura 2000) and non-designated sites of ecological and biodiversity value. |
| **Water** | • 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.<br>• 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.<br>• 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.<br>• The potential exists to consider climate 'proofing' of existing sites in terms of flood hazard (marine and fluvial).<br>• Seek to ensure that when siting new facilities the sustainability of both water supply and water quality are assessed. |
| **Cultural Heritage** | • How to protect and enhance the historic environment of Wales including designated historic assets while developing waste infrastructure.<br>• To protect and enhance landscapes of cultural and historic importance in line with local, regional and national policy |
| **Landscape** | • How to protect and enhance the distinctive character and visual identity of communities, landscapes and townscapes across Wales whist developing waste infrastructure.<br>• Ensuring designated landscape areas are adequately protected |

| SA Topics | Key Sustainability Issues |
|---|---|
| | when considering the location and deployment of new waste facilities and services (including transportation of materials to and from such locations).<br>• 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. |
| **Soil** | • How to ensure that soil resources and vulnerable soilscapes 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.<br>• How to protect against the potential for soil pollution arising from the varied technologies which will be deployed<br>• How to address particular sources of waste such as agricultural or construction waste and the potential for soil pollution.<br>• 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.<br>• To address the range of environmental factors and maximise the sustainability of waste management choices to deliver sustainable soil policy.<br>• 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. |

## 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 C&D Sector Plan 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 of nine headline sustainability appraisal objectives supported by a number of sub-objectives.

5.2.3 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. Amendments have been highlighted in red underlined text in Table 5.2 below.

5.2.4 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 |
|---|---|
| **Waste Management**<br>To increase sustainable waste management and reduce Wales' ecological footprint | • To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;<br>• To increase infrastructural capacity and facilities for sustainable waste management;<br>• To encourage behavioural change and participation amongst household, commercial and industrial operators; and<br>• To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management. |
| **Waste Infrastructure**<br>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this | • To promote markets for recyclates and recycled goods;<br>• To encourage the development and deployment of alternative waste technologies and R&D;<br>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;<br>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;<br>• To support existing and develop new social enterprises focusing on waste as a community resource;<br>• To promote equality and opportunity to access waste management facilities to prevent instances of fly-tipping;<br>• To provide cost-effective and reliable sustainable waste management. |
| **Landscape, biodiversity and cultural heritage**<br>To protect and enhance urban and rural landscapes and resources, including ecological services and functions | • To protect designated landscapes: environmental, cultural and historic;<br>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;<br>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;<br>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;<br>• To promote the use of brownfield land use;<br>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;<br>• To remediate contaminated land. |
| **Soil**<br>To protect and enhance soil resources | • To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation;<br>• To protect against contamination to soil;<br>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils. |
| **Water**<br>To protect and promote the sustainable use of water resources | • To promote sustainable flood risk management; and<br>• To protect and enhance water quality and quantity in inland, coastal and maritime environments. |

| Objective | Sub-objectives |
|---|---|
| **Air quality, noise and odour**<br>To protect and enhance air quality in local, regional and national context | • To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;<br>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;<br>• To minimise adverse impacts to noise levels within communities;<br>• To minimise odours arising from waste processing and its impact upon local communities. |
| **Climate change**<br>To assist with Wales' capacity to adapt to and mitigate against climatic change | • To reduce GHG emissions;<br>• To contribute to national, regional and local level carbon abatement strategy/objectives;<br>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;<br>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects. |
| **Health**<br>To protect and enhance the health and well-being of communities | • To provide safe, secure, mechanisms for civic engagement;<br>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;<br>• To provide opportunities for those with health issues to gain suitable and meaningful employment;<br>• To provide safe and healthy working environments for employees within the waste and recycling industries. |
| **Civic engagement**<br>To increase civic engagement in sustainable waste practice | • To raise awareness and understanding of sustainable waste strategy, objectives and management;<br>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor;<br>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement;<br>• To support and provide opportunities for volunteering in the waste and recycling industries;<br>• To ensure all promotional literature is published in Welsh as well as English where appropriate;<br>• To provide community facilities including visitor and educational centres. |

# 6 SUSTAINABILITY APPRAISAL RESULTS

## 6.1 Compatibility of SA Objectives and Draft C&D Sector Plan Objectives

6.1.1 A compatibility test to examine the relationship between the draft C&D Sector 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 C&D Sector Plan Objectives. Where positive or uncertain relationships were identified, these have been used to inform the development if recommendations for the actions going forward. See Table 6.1 for more detail.

**Table 6.1: C&D Sector Plan Compatibility Objectives**

| | | SA/SEA Objectives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Category** | **C&D Sector Plan Objectives** | **Waste Management** | **Waste Infrastructure** | **Landscape, biodiversity & cultural heritage** | **Soil** | **Water** | **Air Quality, Noise, Odour** | **Climate Change** | **Health** | **Civic engagement** |
| **Waste Prevention (including reuse)** | To give priority to waste prevention, and on more sustainable ways of consuming and producing. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ? |
| | To achieve the annual reduction target of –1.4 per cent through concerted, collective action by the private sector, the public sector, clients, suppliers, business support, social enterprise and the Welsh Government and other relevant stakeholders. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | To ensure that manufacturers, wholesalers, retailers, other businesses (including the construction sector) and the public sector minimise resource use and waste through supply chain initiatives, to reduce, and eliminate where possible waste at all stages of production, distribution, sales and consumption and ultimately disposal, with the ultimate aim of a fair and equitable “One Planet” use of resources. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | To ensure that procurement systems do not result in unnecessary waste. | ✓ | ? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To give priority at the design state to ensure that products (including buildings and other constructed infrastructure) are designed to reduce waste through material optimisation (efficiency in terms of quantities and types of materials used, including extending product life and the design of new business models, (e.g. product leasing and/or take back), and through designing for reuse, refurbishment and/or upgrading. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure that manufacturers, wholesalers, retailers, other businesses (including construction | ✓ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ✓ |

| | | SA/SEA Objectives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Category** | **C&D Sector Plan Objectives** | **Waste Management** | **Waste Infrastructure** | **Landscape, biodiversity & cultural heritage** | **Soil** | **Water** | **Air Quality, Noise, Odour** | **Climate Change** | **Health** | **Civic engagement** |
| | companies) and the public sector 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. | | | | | | | | | |
| | To improve take back or exchange opportunities for unwanted and unused materials by manufacturers, construction companies, retailers, service providers and other businesses. | ✓ | 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure that manufacturers and construction companies adopt lean production models, including maximising the reuse of materials onsite, thereby helping to reduce the environmental impacts associated with transportation of materials and the impacts from waste management activities. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure that the opportunities to achieve waste prevention are maximised under the prevention requirements in permits under the Waste Framework Directive and the Integrated Pollution Prevention and Control Directive 96/61/EC (IPPC). | ✓ | 0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To apply a focus on reducing the consumption and wastage of the key priority materials wood, plastic, metal, insulation & gypsum and hazardous waste. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To reduce the use of hazardous materials in products (including in buildings) in order to reduce the production of hazardous waste on site and at end of life. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| **Preparation for Reuse** | To provide preparation for reuse services in a way that promotes sustainable development and offers the opportunity for lower overall whole system costs. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |
| | To ensure that as far as possible all of the waste that cannot be prevented is prepared for reuse as a priority, and, if this is not possible, for all the remaining waste to be either recycled, composted or anaerobically digested. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To achieve the waste preparation for reuse set in EU Directives (Packaging, WEEE, ELV, Batteries and Waste Framework Directive) and in Towards Zero Waste. | ✓ | ? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ? |
| | To take measures, as appropriate, to promote the reuse of products and preparing for reuse activities, notably by encouraging the establishment and support of reuse and repair networks, together with the use of economic instruments, procurement criteria, quantitative objectives or other measures (including alternative business models). | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

| | | SA/SEA Objectives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Category** | **C&D Sector Plan Objectives** | **Waste Management** | **Waste Infrastructure** | **Landscape, biodiversity & cultural heritage** | **Soil** | **Water** | **Air Quality, Noise, Odour** | **Climate Change** | **Health** | **Civic engagement** |
| | To develop waste collection systems which protect waste products or materials in a way that maximises their potential for preparation for reuse by social enterprises and other companies. This should include enhancing opportunities for architectural salvage / reclamation, including for items of cultural heritage. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |
| | To ensure that preparation for reuse affords opportunities for job creation and training and offers extended opportunities for the third sector to be involved in the waste management infrastructure; | ✓ | ✓ | 0 | 0 | 0 | 0 | 0 | ✓ | ✓ |
| | To ensure a focus on the reuse and recycling of packaging waste, including making packaging more recyclable and increasing recycled content. | ✓ | ? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| **Recycling** | To provide recycling services in a way that promotes sustainable development and offers the opportunity for lower overall whole system costs. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure that as far as possible all of the waste that cannot be prevented is prepared for reuse as a priority, and, if this is not possible, for all the remaining waste to be either recycled, composted or anaerobically digested. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To achieve the waste recycling targets set in EU Directives (Packaging, WEEE, ELV, Batteries and Waste Framework Directive) and in Towards Zero Waste. | ✓ | ? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ? |
| | To ensure that all products (including buildings) only contain materials that can be recycled and are designed to be easily disassembled. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure high quality recycling and, ensure the setting up of separate collections of waste to meet the necessary quality standards for the relevant recycling sectors (with a high priority to closed loop recycling or 'upcycling'), and to ensure that separate collection is set up for at least the following: paper[73], metal, plastic and glass (as required by Article 11 of the Waste Framework Directive). To also encourage the setting up of separate collection systems to include food, wood and card in Wales. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |

[73] Paper does not include card for the purposes of the directive

| | | SA/SEA Objectives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Category** | **C&D Sector Plan Objectives** | **Waste Management** | **Waste Infrastructure** | **Landscape, biodiversity & cultural heritage** | **Soil** | **Water** | **Air Quality, Noise, Odour** | **Climate Change** | **Health** | **Civic engagement** |
| | To ensure the collection and delivery to reprocessors / end users of high quality recyclate meeting relevant end-of-waste criteria (or Quality Protocols) and that the recyclate is used in closed loop applications that maximise the reduction in ecological footprint and carbon footprint, with as much use as possible in Welsh manufacturing operations. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure the source segregation of recyclable wastes by all businesses in Wales, with a focus on food, paper, card, wood, metal, plastic, glass, textiles, WEEE and batteries. | ✓ | ? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure that adequate space for the storage of separate recyclate materials is provided in new buildings, and during the construction phase (for construction wastes). | ✓ | ✓ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | To achieve the separate collection of biowaste with a view to the composting of green waste and digestion of food waste, with a priority given to recycling the treated biowaste by returning it back to the soil, meeting relevant end-of-waste criteria or Quality Protocols. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |
| | To send food waste to anaerobic digestion plants to generate valuable renewable energy and fertiliser. | ✓ | ✓ | ? | ? | ? | ? | ✓ | ✓ | 0 |
| | To encourage businesses to recycle their wastes on site, where feasible, especially in respect of processing recyclable biowastes on site (for example food waste via anaerobic digestion to generate fertiliser and renewable energy). | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure that all waste management companies operating in Wales obtain Green Compass status and provide more accurate reports to customers on the management of their wastes, especially in relation to levels of recycling. | ✓ | ? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure that preparation for reuse affords opportunities for job creation and training and offers extended opportunities for the third sector to be involved in the waste management infrastructure; | ✓ | ✓ | 0 | 0 | 0 | 0 | 0 | ✓ | 0 |
| | To ensure a focus on the reuse and recycling of packaging waste, including making packaging more recyclable and increasing recycled content. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |
| **Other recovery (e.g. energy recovery) and** | To ensure that source separated waste streams that cannot feasibly be recycled are recovered in an environmentally and economically beneficial way. Recovery of source separated waste streams (e.g. treated wood) only takes place where this is | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

| | | SA/SEA Objectives | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Category** | **C&D Sector Plan Objectives** | **Waste Management** | **Waste Infrastructure** | **Landscape, biodiversity & cultural heritage** | **Soil** | **Water** | **Air Quality, Noise, Odour** | **Climate Change** | **Health** | **Civic engagement** |
| **Disposal** | the preferred route for these waste streams taking into account the waste hierarchy and a life cycle approach | | | | | | | | | |
| | To eliminate the landfilling of waste, with a particular focus on biodegradable waste and hazardous waste. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To reduce the amount of residual waste generated. | ✓ | ? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To meet targets capping the level of energy from waste and landfill. | ✓ | ? | ? | ? | ? | ? | ? | ? | 0 |
| | To design out the use of “legacy wastes” that cannot be recycled or recovered and which can only be landfilled. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| | To ensure an adequate collection system for residual waste, including for hazardous waste. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |
| | To secure the development of an integrated and adequate network of sustainable waste management facilities to manage residual waste, ensuring that the necessary sustainable residual waste recovery and disposal infrastructure is made available or accessible for all sectors in Wales to meet the targets set in TZW and proposed in the relevant sector plans. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |
| | To encourage businesses to treat their own residual wastes on site. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |
| | To deliver good carbon reduction outcomes from residual waste treatment plants (e.g. high energy efficiency EfW plants). | ✓ | ✓ | 0 | 0 | 0 | 0 | ✓ | ✓ | 0 |
| | To ensure access to an adequate network of facilities for the treatment and disposal of hazardous waste. | ✓ | ✓ | ? | ? | ? | ? | ? | ? | 0 |
| | To ensure that the planning system facilitates the development of residual waste facilities in the right place at the right time and that local people and businesses understand better why sustainable waste management facilities are in their locality, that they are safe, and that they benefit the community and society as a whole both economically and in environmental terms. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

KEY:

| | |
|---|---|
| ✓ | Compatible |
| x | Not compatible |
| ? | Compatibility depends on detail |
| 0 | No relationship/neutral compatibility |

## 6.2 Screening of C&D Sector Plan Actions

6.2.1 The actions screening process aims to evaluate the need to appraise the sustainability of the C&D Sector Plan actions. The methodology applied followed the steps listed below.

Identification of the C&D Sector Plan actions

6.2.2 The C&D Sector Plan actions were identified and linked to the type of waste material to which they relate, including material for reuse, residual materials, plastic, metal, glass, paper and food waste.

6.2.3 The C&D Sector Plan 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”.

  Within the construction and demolition sector preparing for reuse is more commonly termed reclamation or salvage. This can be further divided into sectors defined by their nature, volume and unit price[74]:

- Recycling. This is any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.
- Other Recovery (e.g. energy from waste) and Disposal. ‘Recovery’ means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Article 12 of the WFD requires Member States to ensure that, where recovery in accordance with Article 10(1) is not undertaken, waste undergoes safe disposal operations in compliance with Article 13 (protection of human health and the environment).

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 the MSP1 SA actions screening. The actions considered omitted for assessment are those which can be described as one of the following:

[74] BioRegional ReClaimed (2006) Reclaimed Building Materials in the Development of the Thames Gateway

- 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;
- Future Plan SA: the action forms part of a future Plan which will be subject of SA; and
- TZW: the action was included in TZW and was already subject to SA.

6.2.5 This Section presents the results of the actions screening; the screening exercise classifies the C&D Sector Plan actions into 2 different categories:

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

Screening exercise and recommendations

6.2.6 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

6.2.7 Table 6.2 below presents the results of C&D Sector Actions screening.

### Table 6.2: Results of the C&D Sector Plan Actions Screening

| Action | Action Type | Screening Summary | Included in C&D SA? Yes/ No |
|---|---|---|---|
| **Waste Prevention** | | | |
| Welsh Government influencing global and EU initiatives | Existing Measure | This action provides a signpost to EU policies and initiatives rather than seeking to implement specific measures. As it is not the purpose of the SA to assess the objectives of other plans and programmes, such action has not been assessed | No |
| Welsh Government working together with the UK Government and other stakeholders at a UK level | Administrative/ Procedural | A joint working between Welsh Government and other public bodies is a procedural measure and this is unlikely to result in the implementation of a specific measure which can be assessed as part of the SA process. | No |
| Transposition of the WFD | Administrative/ Procedural | This action is a joint working between Welsh Government and Defra to ensure the requirements of the revised WFD are transposed into UK law. This joint work is considered to be a procedural/administrative action that, on its own, will not result in the implementation of measures on the ground. Consequently, the action has not been assessed as part of the Sa process. | No |
| Legislation to introduce SWMPs | Existing Measure | This action provides a signpost to an existing legislation rather than seeking to implement specific measures. The Welsh Government is scoping the consultation proposals for SWMPs regulations and aim to issue a consultation by early 2012. As it is not the purpose of the SA to assess other existing actions, this has not been assessed. | No |
| Legislation to introduce charging scheme for SWMPs | Existing Measure | This action provides a signpost to an existing legislation rather than seeking to implement specific measures. The Welsh Government has developed already a Waste Measure, which will permit a levy to be charged on SWMPs. As it is not the purpose of the SA to assess other existing actions, this has not been assessed. | No |
| Consideration of waste hierarchy guidance in respect of construction and demolition waste | Guidance and Education | All producers of waste within the construction and demolition sector will be encouraged to take note of this guidance and in particular the advice on what, in relation to individual waste streams, are the circumstances in which the Welsh Government considers that departures from the Article 4(1) waste hierarchy may be justified by life-cycle thinking. | Yes |
| Sustainable Construction products | Research | This is an action which sets out measures which may be considered in the future following more detailed investigation. The Welsh Government is considering exploring the potential to develop systems to provide information on the components of materials and products used in the construction sector to assist with phasing out of hazardous substances in construction. | No |
| Design solutions for construction products | Research | This is an action which sets out measures which may be considered in the future following more detailed investigation. The Welsh Government is exploring the potential to identify ecodesign solutions to address issues of production inefficiencies, generation of legacy waste and recyclability. The Welsh Government is funding the Ecodesign Centre for Wales to work with construction product manufacturers. This will include investigating the use of standardised sizes for certain materials to help reduce the amount of off-cuts produced on site, and focussing on promotion and development of off-site manufacture (OSM). | No |
| Encourage use of value engineering for large construction projects | Guidance and Education | Construction projects could benefit from applying the principles of Value Engineering and learning from civil engineering. By identifying improvements for various project phases: concept development, preliminary design, final design, procurement and construction significant quantities of waste could be prevented. The Welsh Government will fund Constructing Excellence in Wales to apply the learning from the civil engineer sector to the construction sector by raising awareness of this methodology and encourage its use along with other relevant tools available. | Yes |

| Action | Action Type | Screening Summary | Included in C&D SA? Yes/ No |
|---|---|---|---|
| Designing out waste | Guidance and Education | The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective. | Yes |
| Greening public procurement | Research | This is an action which sets out measures which may be considered in the future following more detailed investigation. The Welsh Government is considering exploring opportunities to develop the Construction Procurement Strategy and include advice on waste prevention within construction projects via the proposed Sustainable Building Portal. This could include signposting to appropriate standards which construction contractors can work towards; guidance on reducing impacts on the environment and human health through the use of non-hazardous materials, and improved opportunities to minimise waste generation and increase opportunities to reuse materials. | No |
| Greening the Welsh Housing Quality Standard Refurbishment | Administrative/ Procedural | The Welsh Government wishes to work with the local authorities and social housing providers to ensure that consideration is given to the life cycle implications of the products and materials they are using as part of the upgrade, in particular the amount and types of waste that the products they are using to upgrade may generate in future housing upgrades. | No |
| Minimising wastage factor | Research | This is an action which sets out measures which may be considered in the future following more detailed investigation. The Welsh Government will investigate the viability of introducing an 80:20% ordering scheme in Wales. The introduction of such a scheme would assist in preventing waste arising and therefore reduce the ecological footprint of C&D waste as well as reduce the environmental impact of managing the waste and preserving our natural resources. | No |
| Waste Reduction Voluntary Agreement | Research | This is an action which sets out measures which may be considered in the future following more detailed investigation. The Welsh Government will explore the potential for establishing a voluntary agreement with the C&D sector in Wales to meet waste prevention targets. If feasible, establish a voluntary agreement with the C&D sector in Wales, with a focus on reducing their reliance on products and materials with a high ecological footprint. Aim to have 50% of all C&D sector businesses in Wales signed up to the agreement by 2014. | No |
| Sustainable Development Charter | Future FMSR Waste Sector Plan | This action formed part of the FMSR Sector Plan, where it has been subject to SA. | No |
| Sustainability clauses for Government grants | Policy | The Welsh Government will develop a set of standard grant conditions to aid companies achieve the TZW reduction and recycling targets in relation to construction projects. | Yes |
| Education and guidance | Guidance and Education | The Welsh Government will develop guidance documents to include, but not limited to, 'By Products Definition' and the impact for Civil Engineering and Construction in relation to the reuse of soils and aggregates. Signpost construction companies to waste prevention guidance already available. | Yes |
| **Reuse** | | | |
| Welsh Government directed support for SME's to reuse surplus materials | Guidance and Education | Through Constructing Excellence in Wales, the Welsh Government will continue to provide, develop and raise awareness of the internet platform for advertising surplus materials for re-use. | Yes |

| Action | Action Type | Screening Summary | Included in C&D SA? Yes/ No |
|---|---|---|---|
| Infrastructure to support the reuse of surplus materials for community benefit | Research | This is an action which sets out measures which may be considered in the future following more detailed investigation. The Welsh Government has tasked Constructing Excellence in Wales to determine the feasibility of establishing a surplus centre to receive donated surplus construction materials and redistribute them to community projects and schemes for reuse. | No |
| Moving the use of demolition wastes up the waste hierarchy | Research | This is an action which sets out measures which may be considered in the future following more detailed investigation. Environment Agency and Constructing Excellence in Wales to work together to investigate how extensive the use of waste exemptions is within the construction and demolition sector, and how to encourage options higher up the waste hierarchy. | No |
| **Preparation for Reuse** | | | |
| Transposition of the WFD | Administrative/ Procedural | This action is a joint working between Welsh Government and Defra to ensure the requirements of the revised WFD are transposed into UK law. This joint work is considered to be a procedural/administrative action that, on its own, will not result in the implementation of measures on the ground. Consequently, the action has not been assessed as part of the SA process. | No |
| Encouraging a reclamation led approach | Market and Infrastructure (Policy) | Constructing Excellence Wales to promote the consideration by construction companies of the deconstruction and demolition of a building at the design and building stages, including the techniques and materials that can be employed which would enable the easier extraction and reuse in the longer term. | Yes |
| Encouraging the implementation of the Demolition Protocol | Guidance and Education | The Welsh Government to raise awareness of the protocol through Constructing Excellence in Wales' work with the C&D sector. Work with Value Wales to include the protocol as a condition for public sector tenders. | Yes |
| Preparation of pre-refurbishment survey | Administrative/ Procedural | A joint working between CEW and the Housing Information Group to develop and disseminate benchmarks for resource efficiency and waste minimisation for WHQS works. So this is a procedural measure and this is unlikely to result in the implementation of a specific measure which can be assessed as part of the SA process. | No |
| Further develop the role of the Third Sector in preparing for reuse | Administrative/ Procedural | The Welsh Government to continue discussion with the social enterprise sector and local government to explore support options for the establishment of more extensive reuse and repair networks. So this is a procedural measure and this is unlikely to result in the implementation of a specific measure which can be assessed as part of the SA process. | No |
| **Recycling** | | | |
| Welsh Government influencing global and EU initiatives | Existing Measure | This action provides a signpost to EU policies and initiatives rather than seeking to implement specific measures. As it is not the purpose of the SA to assess the objectives of other plans and programmes, such action has not been assessed | No |
| Consultation on increasing recycling targets under PRO Regs | Administrative/ Procedural | A joint working between the Welsh Government, Defra and the Scottish Government to consult on increased recycling targets on packaging producers from 2013 to 2017. This joint work is considered to be a procedural/administrative action that, on its own, will not result in the implementation of measures on the ground. Consequently, the action has not been assessed as part of the SA process. | No |
| Encouraging use of alternative substitutes for aggregates | Market and Infrastructure | The Welsh Government will work, through CEW, to encourage the use of alternative, lower carbon embodied materials as substitute for aggregate. | Yes |

| Action | Action Type | Screening Summary | Included in C&D SA? Yes/ No |
|---|---|---|---|
| Environment Agency's Cement Sector Plan | Research | This is an action which sets out measures which may be considered in the future following more detailed investigation. The Welsh Government has asked the Environment Agency to explore the potential for the cement sector plan to act as a mechanism to increase the use of recyclable materials (as aggregates) and other wastes (as fuel) within cement process. | No |
| Waste Protocols Project | Policy | The Welsh Government wishes to ensure that waste quality protocols relevant to the C&D sector are promoted to improve the quality of recycled materials available and to make better use of waste as a resource. | Yes |
| Transposition of the WFD | Administrative/ Procedural | This action is a joint working between Welsh Government and Defra to ensure the requirements of the revised WFD are transposed into UK law. This joint work is considered to be a procedural/administrative action that, on its own, will not result in the implementation of measures on the ground. Consequently, the action has not been assessed as part of the SA process. | No |
| Legislation to introduce SWMPs | Existing Measure | This action provides a signpost to an existing legislation rather than seeking to implement specific measures. The Welsh Government is scoping the consultation proposals for SWMPs regulations and aim to issue a consultation by early 2012. As it is not the purpose of the SA to assess other existing actions, this has not been assessed. | No |
| Legislation to introduce charging scheme for SWMPs | Existing Measure | This action provides a signpost to an existing legislation rather than seeking to implement specific measures. The Welsh Government has developed already a Waste Measure, which will permit a levy to be charged on SWMPs. As it is not the purpose of the SA to assess other existing actions, this has not been assessed. | No |
| Consideration of extended producer responsibility | Research | This action sets out that Welsh Government will explore the potential of introducing extended producer responsibility legislation. As this action relates to additional investigation to be undertaken by Welsh Government rather than the implementation of a specific measure which may have effects in relation to the SA objectives, it has not been assessed as part of the SA process. | No |
| Public procurement contracts | Existing Measure | This action provides a signpost to an existing strategy rather than seeking to implement specific measures. The Welsh Government will continue to promote the use of the Sustainable Procurement Assessment Framework by all public sector organisations. | No |
| Review construction related procurement guidance for private sector | Research | This action sets out that CEW will review the range of guidance and tools available to businesses on construction related procurement and the visibility of these resources. As this action relates to additional investigation to be undertaken by Welsh Government rather than the implementation of a specific measure which may have effects in relation to the SA objectives, it has not been assessed as part of the SA process. | No |
| Increasing recycled content of products and materials used in Government funded projects | Existing Measure | This action provides a signpost to an existing target rather than seeking to implement specific measures. The Welsh Government will review the success of the 10% recycled content target for building materials and products promoted or supported by the Welsh Government or WGSBs. It will also consult whether the target can be increased, or not. As it is not the purpose of the SA to assess other existing actions, this has not been assessed. | No |
| Working with product manufacturers to increase recyclability of products | Market and Infrastructure | The Welsh Government would like to work with manufacturers to develop products which are more sustainable throughout their lifetime – seeking voluntary "extended producer responsibility". The aim is to obtain signed up commitment from the sectors involved. The construction and demolition sector will be encouraged to ensure that these principles are adopted in their supply | Yes |

| Action | Action Type | Screening Summary | Included in C&D SA? Yes/ No |
|---|---|---|---|
| | | chains. | |
| Working with product manufacturers to increase recycled content | Guidance and Education | Welsh Government to deliver technical advice and capital support to 25 Welsh SME businesses wishing to incorporate recycled content or increase the levels of recycled content in their products. | Yes |
| Assessing the current use of secondary aggregates in Wales | Research | This action sets out that Welsh Government will undertake a survey of secondary and recycled aggregate use in Wales, updating the Wales Environment Trust survey 2007. As this action relates to additional investigation for a potential future measure rather than the implementation of a specific measure, it has not been assessed as part of the SA process. | No |
| Mandatory provision of a separate collection for paper, metal, plastic and glass | Existing Measure | This action provides a signpost to a regulation being prepared to be mandatory rather than seeking to implement specific measures. With the implementation of this regulation, the Welsh Government wants to ensure that local authorities and waste companies set up separate collection schemes for paper, glass, metal and plastic from 1 January 2015 onwards. As it is not the purpose of the SA to assess other existing actions, this has not been assessed. | No |
| Potential interventions to secure source segregation of recyclable materials | Research | Study commissioned by the Welsh Government to consider instruments that could facilitate businesses to recycle waste. As this action relates to additional investigation for potential future interventions/measures rather than the implementation of a specific measure, it has not been assessed as part of the SA process. | No |
| Development of Trade Waste Bring Sites | Research | The Welsh Government has tasked Constructing Excellence in Wales to work in conjunction with the Environment Agency Wales to establish a pilot TWBS to trial the concept over a 6 month period. The pilot will be monitored and used to explore the feasibility, determine the regulatory position, and to assess the potential impacts on reducing fly-tipping incidents. As this action relates to additional investigation for potential future measures rather than the implementation of a specific measure, it has not been assessed as part of the SA process. | No |
| Reporting on recycling performance by expanding network of Green Compass accredited sites | Market and Infrastructure | CEW to provide support to Welsh waste management organisations to achieve PAS 402 via the Green Compass Scheme. | Yes |
| Support for the improvement of the recycling infrastructure | Future CIM Sector Plan | This action will form part of the CIM Sector Plan, where it will be subject to SA. | No |
| Allowing businesses to use household waste recycling centres (for recyclate only) | Future CIM Sector Plan | This action will form part of the CIM Sector Plan, where it will be subject to SA. | No |
| Increasing the role of design for recycling (Design for Deconstruction) | Guidance and Education | Through Ecodesign Centre, the Welsh Government will encourage designers/architects to design for the end-of-life of the building. In addition, CEW to work to raise awareness of the importance of designing for end of life and recommend that all designers/architects and construction companies utilise existing systems to assist in meeting these objectives. These systems include: BREEAM, CEEQUAL, D4D, SCRIPT, LEED and LEAN. | Yes |
| Ecodesign of products | Market and Infrastructure | CEW and EDC to work with manufacturers and retailers to seek new opportunities for ecodesign of construction products and materials in Wales. | Yes |
| Increasing awareness and behaviour change towards recycling | Guidance and Education | Extend the awareness raising and behaviour change campaign on the benefits of recycling within the C&D sector. | Yes |
| Support for construction and demolition businesses | Guidance and Education | CEW to provide packages of work to raise awareness of waste issues within the C&D sector and research a variety of technology and infrastructure options to aid the sector in meeting TZW targets. | Yes |

| Action | Action Type | Screening Summary | Included in C&D SA? Yes/ No |
|---|---|---|---|
| Increase awareness about using recycled and reused products | Guidance and Education | An awareness campaign will be initiated to encourage companies to value existing items more and for clients to be encouraged to use materials have been used before, in the same way that antique wood beams are valued. This will form part of the Waste Awareness Wales campaign on reuse. | Yes |
| Green guide to building materials specification | Guidance and Education | CEW to co-ordinate available recycling best practice guidance, identify gaps and raise awareness of best available guidance. | Yes |
| **Other Recovery and Disposal** | | | |
| Reducing reliance on landfill | Guidance and Education | CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses. | Yes |
| Consultation on the introduction of Restrictions on the landfilling of certain wastes | Research | In 2010, the Welsh Government and Defra jointly consulted on the introduction of landfill bans for a variety of wastes including food, paper and card, plastic and metals. The Welsh Government will keep the issue under review and may consult on detailed proposals for the introduction of landfill bans of these or other materials. As this action relates to additional consultation for potential future measures rather than the implementation of a specific measure, it has not been assessed as part of the SA process. | No |
| Biodegradable waste | Research | The Welsh Government to explore opportunities to increase recycling and reuse of C&D biodegradable waste; investigate alternative methods of handling C&D biodegradable wastes; and undertake research into restricting C&D biodegradable waste from landfill. As this action relates to additional investigation for potential future measures rather than the implementation of a specific measure, it has not been assessed as part of the SA process. | No |
| Energy from waste for “difficult” wastes | Future CIM Sector Plan | This action will form part of the CIM Sector Plan, where it will be subject to SA. | No |
| Potential abuse of waste exemptions | Research | Environment Agency to review the use of exemptions within the C&D sector and identify whether any actions are required to prevent abuse. As this action relates to additional investigation for a potential measure rather than the implementation of a specific measure, it has not been assessed as part of the SA process. | No |
| Tackling the fly-tipping of construction and demolition waste | Administrative/ Procedural | The Welsh Government will continue to support Fly-tipping Action Wales and work with the partners to tackle issues specific to C&D waste. As this is a procedural measure, this is unlikely to result in the implementation of a specific measure which can be assessed as part of the SA process. | No |

### 6.3 Summary of findings

6.3.1 The actions screening shows that 38 of the 58 C&D Sector Plan actions are omitted for SA, of which:

- 1 actions has been covered through the FMSR Sector Plan SA/SEA;
- 3 actions have been covered through the CIM Sector Plan SA/SEA;
- 16 actions may be considered in the future following more detailed research;
- 9 actions are Administrative/Procedural;

- 9 actions are Existing Measures within TZW or other existing legislation, strategy, regulation, target and guidance.

6.3.2 The actions that were not screened out were taken forwarded for assessment. As presented in Table 6.2 above, the following 20 actions were assessed in this SA:

**Table 6.3 Actions Assessed in this SA**

| Action | Description of the Actions |
|---|---|
| **Waste Prevention** | |
| Consideration of waste hierarchy guidance in respect of construction and demolition waste | Waste hierarchy guidance is produced and promoted across all sectors, including construction & demolition sector. |
| Encourage use of value engineering for large construction projects | Fund Constructing Excellence in Wales (CEW) to work with the civil engineering sector to raise awareness of this methodology and encourage its use along with other relevant tools available. |
| Designing out waste | Business support organisations to be funded to work with the relevant sub-sectors of the construction & demolition sector to increase awareness about 'designing out waste'. |
| Sustainability clauses for Government grants | Develop a set of standard grant conditions to aid companies achieve the TZW waste reduction and recycling targets in relation to construction projects. |
| Education and guidance | Development of guidance documents to include, but not limited to, 'By Products Definition' and the impact for Civil Engineering and Construction in relation to the reuse of soils and aggregates. Signpost construction companies to waste prevention guidance already available. |
| **Reuse** | |
| Welsh Government directed support for SME's to reuse surplus materials | Through CEW, continue to provide, develop and raise awareness of the internet platform for advertising surplus materials for re-use. |
| **Preparation for Reuse** | |
| Encouraging a reclamation led approach | CEW to promote the consideration by construction companies of the deconstruction and demolition of a building at the design and building stages, including the techniques and materials that can be employed which would enable the easier extraction and reuse in the longer term. |
| Encouraging the implementation of the Demolition Protocol | Raise awareness of the protocol through Constructing Excellence in Wales' work with the C&D sector. Work with Value Wales to include the protocol as a condition for public sector tenders. |
| **Recycling** | |
| Encouraging use of alternative substitutes for aggregates | The Welsh Government to encourage the use of alternative, lower carbon embodied materials as substitute for aggregate. |
| Waste Protocols Project | Waste quality protocols relevant to the C&D sector are promoted to improve the quality of recycled materials available and to make better use of waste as a resource. |
| Working with product manufacturers to increase recyclability of products | Work with manufacturers to develop products which are more sustainable throughout their lifetime. |
| Working with product manufacturers to increase recycled content | Support Welsh SME businesses with up to 30% of the capital costs associated with the incorporation of recycled content or an increase in the levels of recycled content in their products. |
| Reporting on recycling performance by expanding the network of Green Compass accredited sites | CEW to provide support to Welsh waste management organisations to achieve PAS 402 via the Green Compass Scheme. |
| Increasing the role of design for recycling (Design for Deconstruction) | Ecodesign Centre (EDC) to work with designers/architects to design for the end-of-life of the building. CEW to work to raise awareness of the importance of designing for end-of-life. |
| Ecodesign of products | CEW and EDC to work with manufacturers and retailers to seek new opportunities for ecodesign of construction products and materials in Wales. |

| Action | Description of the Actions |
|---|---|
| Increasing awareness and behaviour change towards recycling | Extend the awareness raising and behaviour change campaign on the benefits of recycling within the C&D sector. |
| Support for construction and demolition businesses | CEW to provide packages of work to raise awareness of waste issues within the C&D sector and research a variety of technology and infrastructure options to aid the sector in meeting TZW targets. |
| Increase awareness about using recycled and reused products | Awareness campaign to encourage companies to value existing items more and for clients to be encouraged to use materials which have been used before. |
| Green guide to building materials specification | CEW to co-ordinate available recycling best practice guidance, identify gaps and raise awareness of best available guidance. |
| **Other Recovery and Disposal** | |
| Reducing reliance on landfill | CEW, WRAP etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses. |

### 6.4 Assessment of Actions

6.4.1 For the purposes of the assessment, the actions were considered together in their category groups:

- Waste Prevention (including reuse)
- Preparation for Reuse
- Recycling
- Other Recovery (e.g. energy from waste) and Disposal

6.4.2 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, Mitigation measures have been identified in order 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 C&D Sector Plan for each category of actions. Full details of the assessment are presented in Appendix C.

**Table 6.4 C&D Sector Plan 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 |
|---|---|---|---|---|---|---|---|---|---|
| **Waste Prevention (including reuse)** | | | | | | | | | |
| Education, Guidance and Tools | ✓✓ | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| Design Out Waste | ✓✓ | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| Reuse Surplus Materials | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| **Preparation for Reuse** | | | | | | | | | |
| Education, Guidance and Tools | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| **Recycling** | | | | | | | | | |
| Education, Guidance, Tools and Market | ✓✓ | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |
| **Other Recovery and Disposal** | | | | | | | | | |
| Education and Guidance | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

SCORING KEY:

| | |
|---|---|
| ✓✓ | Strong positive effect |
| ✓ | Positive effect |
| × | Negative effect |
| ×× | Strong negative effect |
| ✓/× | Mixed positive and negative effect |
| ? | Unknown effect |
| 0 | No relationship/neutral effect |

*1. Waste Prevention (including reuse)*

a) Education, Guidance and Tools Actions Assessment

6.4.3 Assessed actions for Waste Prevention (Including Reuse): Education, Guidance and Tools

- Consideration of waste hierarchy guidance in respect of construction and demolition waste
- Encourage use of value engineering principles and tools for large construction projects
- Sustainability clauses for Government grants
- Education and guidance within the C&D Sector

6.4.4 The actions are considered to have a strong positive effect in relation to waste management objective. This is primarily due to an encouragement of waste prevention for C&D companies through the provision of supporting guidance, standards and existing tools. This is a fundamental step in assisting the sector to meet the waste prevention targets and increase sustainable waste management. This is expected to discourage the use of raw materials and materials with legacy waste where appropriate, generating behavioural change towards prevention and reuse within C&D companies 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; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas emissions associated with transportation and reprocessing of waste.

6.4.5 The actions are also likely to have a strong positive effect on the waste infrastructure objective by supporting most of the SA sub-objectives. They promote the use of most appropriate waste minimisation and management techniques available with a view to promoting an improvement of companies' waste management strategy and a potential development of green technologies. Although the actions may indirectly lead to a reduction in supply of marketable recyclates and recycled materials due to promotion and increase of minimisation and reuse of materials and waste, the effect should not be significant as some materials targeted for reuse (i.e. wood) will not be recyclable.

6.4.6 As C&D companies are encouraged to reuse materials and prevent waste, there may be a requirement to manage less residual waste which in turn may result in a reduction in the number of jobs within the sector, should staff affected not be redeployed. It is not expected that any such effect would be significant since 67% of C&D waste produced is currently being reused (Welsh Government, draft C&D Sector Plan, 2011) and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.

6.4.7 Waste materials represent a cost to contractors and the construction industry generally. In addition to waste disposal and transport costs, there are further indirect costs such as the value of lost raw materials and the lost value-added cost of labour and energy. Minimising waste through these actions can therefore provide a reduction in cost for the contractors and promote a more cost-effective sustainable waste management.

6.4.8 The inclusion of sustainability clauses for Government grants will also contribute to the capacity of the C&D companies to achieve TZW waste reduction and recycling

targets in relation to construction and demolition projects (e.g. Demolition Protocol, BREEAM, etc).

6.4.9 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 C&D companies' waste management strategy.

6.4.10 It is anticipated the effects of the actions will be in the short and longer terms and will offer long term benefits.

b) Designing Out Waste Action Assessment

6.4.11 Assessed actions for Waste Prevention (Including Reuse): Designing out Waste:

- The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them to utilise these principles at the commencement of a construction project.

6.4.12 The action is anticipated to have a strong positive effect in supporting both Waste Management and Waste Infrastructure objectives. This is primarily due to an encouragement of waste prevention through the improvement of materials resource efficiency in construction projects by optimising material use and reducing waste, as design decisions directly influence what gets constructed, and how. The potential measures covered under this action are diverse (i.e. policies, guidance and education, infrastructure and market, public procurement clauses, etc) promoting as a whole a more sustainable waste management.

6.4.13 The action is also expected to increase awareness and share best practice amongst client organisations, designers and architects; by discouraging the use of raw materials and materials with legacy waste, it is intended to generate behavioural change toward prevention and reuse and therefore reducing disposal rate and the level of waste requiring management.

6.4.14 Reduced demand for raw materials and increased reuse as a result of the action consequently will generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas (GHG) emissions associated with transportation and reprocessing of waste.

6.4.15 This action may also indirectly reduce demand for marketable recyclates and recycled materials (for example, masonry and bricks, recycling of metals, etc) as a result of promoting minimization and reuse of materials and waste. However some materials whilst targeted for reuse (i.e. wood) will not be recyclable.

6.4.16 The action encourages sustainable design of waste infrastructure and promotes the development of the green technologies sector and sustainable procurement (i.e. design out waste guidance, contractual requirements, mechanism to assist in waste reduction, such as BREEAM, etc).

6.4.17 As construction companies are encouraged to prevent and reuse materials and waste through this action, there is likely to be a reduction in the demand to manage 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

local employment opportunities. It is not expected that any such effect would be significant since 67% of C&D waste produced is currently being reused (Welsh Government, draft C&D Sector Plan, 2011) and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.

6.4.18 It may have a positive effect in reducing the number of fly-tipping events by indirectly putting a value on waste materials.

6.4.19 Implementing this action can also provide significant reduction in cost by preventing waste generation and wasting less material during the design stage. Reducing the volume of disposal waste may generate cost savings also related to the management of such waste. This would have a positive effect on the objective.

6.4.20 The action is also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, soil, water, air quality/noise/odour, climate change and health due to the potential for the action to prevent waste, optimise materials use and reduce reliance on landfill/residual treatment by encouraging 'designing out waste' measures.

6.4.21 It is anticipated the effects of the action will be in the medium/long term and will offer long term benefits.

c) Reuse Surplus Materials Action Assessment

6.4.22 Assessed actions for Waste Prevention (Including Reuse): Reuse Surplus Materials

- Welsh Government directed support for SME's to reuse surplus materials:
  The Welsh Government through Constructing Excellence in Wales has funded the development of an internet platform to enable the construction industry, in particular SME's, to make their surplus materials suitable for re-use visible to potential users.

6.4.23 The action is predicted to have a positive effect in relation to Waste Management and Waste Infrastructure objectives. This is primarily due to a promotion of reuse of surplus materials arising from C&D processes and activities. Through the development of an internet platform for the construction industry to make their surplus materials for reuse available, an increase of awareness of the industry should also be expected. And in turn, it should generate behavioural change toward reuse and therefore reducing disposal waste and the level of waste requiring management.

6.4.24 Encouragement of materials' reuse as a result of the action will also generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing greenhouse gas (GHG) emissions associated with transportation and reprocessing of waste and a reduction in demand for raw materials.

6.4.25 This action may create market opportunities for unused and undamaged materials such as aggregates and wood.

6.4.26 As the construction industry, in particular SME's, are encouraged to reuse, there may be a requirement to manage less residual waste which in turn it 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 local employment opportunities. However, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused (draft C&D Sector Plan, 2011)

and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.

6.4.27 The action is also likely to generate cost savings. Waste materials, regardless of whether they are recycled or sent to landfill, represents a cost to contractors. 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 of labour and energy. Preventing waste through reusing materials can therefore provide reduction in cost and promote a more cost-effective sustainable waste management.

6.4.28 The action is also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, soil/landtake and mineral extraction, water, air quality/noise/odour, climate change and health due to the potential for the action to optimise materials used and reduce reliance on landfill/residual treatment.

6.4.29 It is anticipated the bulk of the effects of the action will be in the medium term but will also offer long term benefits.

*2. Preparation for Reuse*

a) Education, Guidance and Tools Actions Assessment

6.4.30 Assessed actions for Preparation for Reuse: Education, Guidance and Tools

- Encouraging a reclamation led approach
- Encouraging the implementation of the Demolition Protocol

6.4.31 The actions are considered to have a strong positive effect in relation to waste management objective. Giving consideration to the deconstruction and demolition of a building at design stage and promoting the implementation of the Demolition Protocol are actions which encourage reusing wastes arising from C&D activities which have been discarded for disposal (for example wood items such as wood pallets). These types of waste need to be prepared before being used, which means checking, cleaning or repairing recovery operations, by which products that have become waste are prepared so that they can be reused without any other pre-processing. As a whole, this should contribute an increase of sustainable waste management within the C&D sector.

6.4.32 Implementing these actions should also promote an increase of awareness and understanding of designers and contractors of sustainable management and resource efficiency activities. And in turn, it should generate behavioural change toward prevention and reuse and therefore reducing disposal waste and the level of waste requiring management.

6.4.33 Reduced demand for resource and increased reuse as a result of these actions will generate also a number of benefits with respect to the minimisation of Wales' Ecological Footprint; 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.

6.4.34 In terms of waste infrastructure objective, these actions are expected to have a positive effect on it. The actions encourage sustainable design and procurement initiatives through promoting a reclamation led approach and demolition protocol. This in turn may encourage the development and deployment of alternative waste

technologies and R&D. As contractors are encouraged to reuse waste, there may be a requirement to manage less 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 local employment opportunities; however, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused already[75] and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.

6.4.35 By preparing C&D waste to be reused, less waste will be disposed to landfill and this should offer cost benefits for companies. Despite the potential high cost of 'preparing for reuse' equipments and facilities, the costs of sending waste to landfill are increasing, in particular the rising Landfill Tax and the Aggregates Levy. Reducing the volume of disposal waste may therefore generate cost savings related to the management of such waste.

6.4.36 The actions are also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, landtake, soil, water, air quality/noise/odour, climate change and health due to the potential for the actions to optimise materials use (i.e. by conserving limited resources and avoiding the extraction of resources for production of new materials, such as plastics), and reduce reliance on landfill/residual treatment.

6.4.37 It is anticipated the effects of the actions will be in the medium term and will offer long term benefits.

*3. Waste Recycling*

a) Education, Guidance, Tools and Market Actions Assessment

6.4.38 Assessed actions for Waste Recycling: Education, Guidance, Tools and Market

- Encouraging use of alternative substitutes for aggregates
- Waste Protocols Project
- Working with product manufacturers to increase recyclability of products
- Working with product manufacturers to increase recycled content
- Reporting on recycling performance by expanding network of Green Compass accredited sites
- Increasing the role of design for recycling (Design for Deconstruction)
- Ecodesign of products
- Increasing awareness and behaviour change towards recycling
- Support for construction and demolition businesses
- Increase awareness about using recycled and reused products
- Green guide to building materials specification

6.4.39 The actions are considered to have a strong positive effect in relation to waste management and waste infrastructure objectives. This is primarily due to an encouragement of recycling of C&D wastes, through promoting:

- development of substitute and recyclable products and
- the use of campaign, guidance, standards, tools and mechanisms for recycling.

[75] WAG (2010) Draft C&D Waste Sector Plan – Part 1 for Consultation, Towards Zero Waste: The Overarching Waste Strategy Document

6.4.40 Recycling involves recovery operations by which waste materials are reprocessed into products whether for the original or other purposes.

6.4.41 For maximum effectiveness, the actions should be implemented in combination; in isolation they will not have the same level of positive effect predicted in terms of supporting a more sustainable waste management within the C&D Sector.

6.4.42 A number of the actions are focused on raising awareness of key actors, such as C&D industry, manufactures, waste management organisations, designers and architects. This awareness-raising should in turn generate behavioural change toward recycling therefore reducing disposal waste.

6.4.43 Reduced demand for raw materials (as in the case for plastics) and increased recycling as a result of these actions will also generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas emissions associated with transportation and reprocessing of waste. However, in order to maximise the reduction of the Ecological Footprint of C&D waste, it is necessary to concentrate on recycling the materials which will reduce the footprint by the greatest percentage (i.e. Wood (26.6%EF), Plastic (17.5%EF), Insulation & Gypsum (12.5%EF), Hazardous Waste (10%EF) and Metals (9.5%))[76].

6.4.44 The actions as a whole will promote market opportunities for recycling and substitute materials through a range of technical and financial incentives and guidance such as encouraging use of substitutes for aggregates and working with product manufacturers to increase recyclability of products.

6.4.45 They also encourage sustainable design through promoting ecodesign of construction products and boosting the role of design for recycling (Design for Deconstruction).

6.4.46 As recycling of waste is encouraged, there may be a requirement to manage less 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 local employment opportunities; however, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.

6.4.47 As a result of the recycling of C&D waste materials, less waste is disposed to landfill and this can result in cost benefits for companies and other key actors. Despite the high cost of recycling equipments, facilities, implementing protocols, etc the costs of sending waste to landfill are increasing, in particular the rising Landfill Tax and the Aggregates Levy. Reducing the volume of disposal waste may therefore generate cost savings related to the management of such waste.

6.4.48 The actions are also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, soil, water, air quality/noise/odour, climate change and health due to the potential for the actions to optimise materials use (i.e. by conserving limited resources and avoiding the production of virgin materials, such as plastics), and reduce reliance on landfill/residual treatment.

[76] WAG (2010) Draft C&D Waste Sector Plan – Part 1 for Consultation, Towards Zero Waste: The Overarching Waste Strategy Document

6.4.49 It is anticipated the effects of the actions will be in the medium/long term and will offer long term benefits.

*4. Other Recovery and Disposal*

a) Education and Guidance Actions Assessment

6.4.50 Assessed actions for Other Recovery and Disposal: Education and Guidance

- Reducing reliance on landfill
- CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses.

6.4.51 The action is considered to have a strong positive effect in relation to waste management objective, since it seeks to increase awareness and understanding of the landfill tax increase and the role of diverting C&D waste from landfill within the sustainable management of waste. Raising awareness will in turn help encourage behavioural changes within the C&D sector. Although landfill is at the bottom of the waste hierarchy and is, therefore, a last resort option, there may however be occasions when disposal of C&D waste to landfill is unavoidable and may present the best environmental solution for certain materials (i.e. asbestos).

6.4.52 With decreasing landfill space, diversion from landfill relieves pressure on existing depleted land stock. In addition, some C&D materials, for example, wood, degrade over time releasing methane, a greenhouse gas which contributes to global warming. Other materials may leach out over time, also causing negative environmental effects. Avoiding all these environmental effects through landfill tax increase and landfill diversion will contribute to the reduction of Wales' Ecological Footprint.

6.4.53 In terms of waste infrastructure objective, the action is considered to have a positive effect. An indirect effect of diverting more C&D waste from landfill is the encouragement of market opportunities for recyclates and recycled goods although the effect is not expected to be significant as the largest quantities of waste disposed to landfill are currently soils and aggregates, and these are materials targeted for reuse (either on or off site) rather than recycling. Reducing the volume of disposal waste may also generate cost savings related to the management of such residual waste which presents in turn less national risk to Landfill Tax. The action may also have an indirect positive effect in reducing the number of fly-tipping events by encouraging waste prevention, reuse and recycling initiatives.

6.4.54 The action is also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, soil, water, air quality/noise/odour, climate change and health. Minimising the volume to landfill through diversion of C&D waste from landfill will reduce the demand for future landfill, indirectly enabling the protection of existing sites with landscape, historical and/or biodiversity importance. It will also avoid generation of landfill gas and leachate minimising the risk of soil contamination. In terms of water, it will avoid pollution to groundwater, rivers and coastal environments for example due to surface water runoff and leeching. It also encourages a minimisation of emissions to air , including GHG emission, due to a reduction in C&D waste going to landfill and a possible reduction in use of transport. It is assumed that, as a result of a reduction in waste sent to landfill due to landfill diversion, there will also be a reduction in hazards, air and noise pollution and odour associated with the management of waste.

6.4.55 It is anticipated the effects of the actions will be felt from the medium term and will offer long term benefits.

Assumptions and Limitations

6.4.56 TZW sets out a strategic vision for the future management of waste until 2050. Therefore, the temporal scope or timeframe for the C&D Sector Plan actions is the same and focuses on the period up to 2050.

6.4.57 It is assumed that actions scoped out from this SA and linked to other waste sector plans will be subject to SA as part of the SA process of those sector plans.

6.4.58 The C&D Sector Plan does not provide a detail plan for the provision of new waste infrastructure and management facilities and therefore transboundary and spatial/local effects from specific proposals can not 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 Establishment Environmental Assessment Method (BREEAM), etc, and assess their compliance with local and regional development plans.

Conclusions

6.4.59 It is anticipated that the implementation of the C&D Sector Plan will have an overall positive effect. No significant adverse effects have been identified in the assessment of the C&D Sector Plan actions and as a result no mitigation measures are proposed. 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 C&D waste plan together with other past, present or reasonably foreseeable actions. This includes:

- consideration of how the draft C&D waste plan 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 C&D waste plan with other plans, programmes and projects

6.5.2 The cumulative effect of the draft C&D waste plan with other plans, programmes and projects is 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 6 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 C&D waste plan.

6.5.3 The cumulative effects of the draft C&D waste plan 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 C&D plan and other plans and programmes in optimising materials use (i.e. by conserving limited resources 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 C&D plan 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.

6.5.5 The cumulative effects of the draft C&D plan with other plans, programmes and projects on the **health** SA objective is also difficult to predict. At a strategic level, it is more likely that cumulative health effects will be positive.

Combined effect of individual effects of the draft C&D Plan

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 C&D plan is to minimise waste. 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. The emphasis of the draft C&D plan on recycling, reuse and landfill diversion will encourage the development and delivery of infrastructure and facilities for sustainable waste management through a range of actions and initiatives, which a combination of these actions should have positive cumulative effects on the waste infrastructure SA objective.

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 such as plastics) 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 landfilling waste (i.e. leaching, soil contamination, emission, odours etc.). In addition, by encouraging waste prevention, reuse, recycling and landfill diversion, the draft C&D plan 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 draft C&D Plan on the **health** SA objective is likely to be positive since the promotion of waste prevention, reuse/recycling and landfill diversion through the combination of actions will help to achieve higher levels of waste minimisation and a better management of waste. 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/recycling rates and the reduction in movement of HGV transporting waste.

Assumptions and Limitations

6.5.9 The C&D Sector Plan does not provide a detailed plan for the provision or location of new waste infrastructure and management facilities and therefore 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, BREEAM etc. 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 1st Review in 2007[77].

6.5.10 The C&D Sector Plan contains actions linked to other TZW Sector Plans, such as the CIM Sector Plan, the I&C Sector Plan and the Public Sector Plan. This can add in a combined positive effect to 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

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

6.6.2 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.

6.6.3 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 (i.e. Landfill tax remains at current rate for the next few years) 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.

6.6.4 Preferred Option (Option 2) Best Practice – The proposed draft C&D Sector Plan. 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.

6.6.5 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.

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

[77] WAG (2007) Regional Waste Plans (Strategic Framework)– First Review.

**Table 6.5 Description of the alternatives to the C&D Sector Plan**

| 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. |
|---|---|---|---|---|
| **Waste Prevention (Including Reuse)** | Consideration of waste hierarchy guidance in respect of construction and demolition waste | No guidance produced. | Waste hierarchy guidance is produced and promoted across all sectors, including construction & demolition sector. | Introduce legislation to mandate the use of the guidance, with reporting on compliance also required. |
| | Encourage use of value engineering for large construction projects | No action taken | Fund Constructing Excellence in Wales to work with the civil engineering sector to raise awareness of this methodology and encourage its use along with other relevant tools available. | Mandate the Value Engineering approach in public sector procurement projects for construction. |
| | Designing out waste | No action taken | Business support organisations to be funded to work with the relevant sub-sectors of the construction & demolition sector to increase awareness about 'designing out waste'. | Mandate a requirement for "designing out waste" through amending the primary legislation of Site Waste Management Plans. |
| | Sustainability clauses for Government grants | No further action taken | Develop set of standard grant conditions to aid companies achieve the TZW waste reduction and recycling targets in relation to construction projects. | Award of grants is dependent on companies providing proof an active and accredited environmental management system which includes specific waste reduction and recycling targets in line with those set out in Towards Zero Waste. |
| | Education and guidance | No action taken | Development of guidance documents to include, but not limited to, 'By Products Definition' and the impact for Civil Engineering and Construction in relation to the reuse of soils and aggregates. Signpost construction companies to waste prevention guidance already available. | Work with construction trade bodies and CIWM to develop accredited waste management training courses aimed specifically at the construction and demolition sector. |
| | Welsh Government directed support for SME's to reuse surplus materials | No provision of direct support for SMEs to reuse surplus materials. | Through Constructing Excellence in Wales, continue to provide, develop and raise awareness of the internet platform for advertising surplus materials for re-use. | Develop the internet platform to enable collection of data on reuse of specific priority materials. Expand the site to allow use by reclamation companies. Make it a mandatory requirement that construction companies working on public sector construction projects register with the service, as a requirement of contract. |

| 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. |
|---|---|---|---|---|
| **Preparation for Reuse** | Encouraging a reclamation led approach | No action taken | Constructing Excellence Wales to promote the consideration by construction companies of the deconstruction and demolition of a building at the design and building stages, including the techniques and materials that can be employed which would enable the easier extraction and reuse in the longer term. | Mandatory requirement in public sector construction procurement contracts for the deconstruction and demolition of a building to be addressed at the design and building stages, including the techniques and materials that can be employed which would enable the easier extraction and reuse in the longer term. |
| | Encouraging the implementation of the Demolition Protocol | No action taken | Raise awareness of the protocol through Constructing Excellence in Wales' work with the C&D sector. Work with Value Wales to include the protocol as a condition for public sector tenders. | Demolition Protocol to be developed into an accredited standard. |
| **Recycling** | Encouraging use of alternative substitutes for aggregates | No action taken | The Welsh Government will work, through CEW, to encourage the use of alternative, lower carbon embodied materials as substitute for aggregate. | Introduce a statutory ban on the the use of glass and other high embodied recyclable materials as substitute for aggregates in Wales. |
| | Waste Protocols Project | No further action taken | Waste quality protocols relevant to the C&D sector are promoted to improve the quality of recycled materials available and to make better use of waste as a resource. | The Welsh Government will fund the identification and development of waste quality protocols for waste materials which haven't yet been considered |
| | Working with product manufacturers to increase recyclability of products | No action taken | Work with manufacturers to develop products which are more sustainable throughout their lifetime. | Develop a list of accredited sustainable construction products and materials which would be included in the BREEAM standard. Mandate their use in public sector construction projects. |
| | Working with product manufacturers to increase recycled content | No action taken | Support 25 Welsh SME businesses with up to 30% of the capital costs associated with the incorporation of recycled content or an increase in the levels of recycled content in their products. | Expand the REMake project to enable WRAP to support more Welsh SMEs. Promote the use of the products from the supported SMEs. |
| | Reporting on recycling performance by expanding network of Green Compass accredited sites | No further action taken | CEW to provide support to Welsh waste management organisations to achieve PAS 402 via the Green Compass Scheme. | All waste management companies in Wales operating to PAS 402:2009 by 2020 |
| | Increasing the role of design for recycling (Design for | No action taken | Ecodesign Centre to work with designers/architects to design for the end-of-life | All Welsh Government funded construction projects to be designed |

| 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. |
|---|---|---|---|---|
| | Deconstruction) | | of the building. CEW to work to raise awareness of the importance of designing for end-of-life. | to specified end-of-life standards. |
| | Ecodesign of products | No further action taken | CEW and EDC to work with manufacturers and retailers to seek new opportunities for ecodesign of construction products and materials in Wales. | Mandatory requirement for eco-design on construction products used in Wales. |
| | Increasing awareness and behaviour change towards recycling | No action taken | Extend the awareness raising and behaviour change campaign on the benefits of recycling within the C&D sector. | Recycling and its benefits to be included in relevant Continuous Professional Development courses through recognised C&D sector trade associations. Work with CIWM to develop sector specific competency schemes. |
| | Support for construction and demolition businesses | No support provided | CEW to provide packages of work to raise awareness of waste issues within the C&D sector and research a variety of technology and infrastructure options to aid the sector in meeting TZW targets. | Statutory guidance on recycling within the C&D sector produced, the use of which is mandatory for all public sector construction projects. |
| | Increase awareness about using recycled and reused products | No action taken | WAW to initiate awareness campaign to encourage companies to value existing items more and for clients to be encouraged to use materials which have been used before. | Mandatory targets set for use of recycled and reused products within public sector construction projects. |
| | Green guide to building materials specification | No action taken | CEW to co-ordinate available recycling best practice guidance, identify gaps and raise awareness of best available guidance. | Development of mandatory Green specification for all building products and designs used in public sector construction projects. |
| **Other Recovery and Disposal** | Reducing reliance on landfill | Landfill tax remains at current rate for the next few years. | CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses. | Landfill tax to continue to rise beyond 2015 and bans of materials such as biodegradable waste, wood, plastic etc to be introduced. |

Assessment of Alternatives

6.6.7 The sustainability assessment of the alternatives of the actions screened in was undertaken for each category of actions following the approach followed for the assessment of the MSP Sector Plan (Part 1). 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 C&D Sector Plan |
| ↓ | Option likely to have a less positive effect on the objective than that assessed for the draft C&D Sector Plan |
| ↑↓ | Option likely to have a mixed positive and negative effect on the objective than that assessed for the draft C&D Sector Plan |
| ? | Difference in effect on the objective likely to be dependent on detailed application of individual actions and projects |

6.6.8 The assessment of the alternatives/options is provided in Table 6.6 below.

6.6.9 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).

6.6.10 The results of the options assessment against the waste infrastructure and waste management 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, statutory bans, accredited training and increase of landfill tax.

6.6.11 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 and health objectives; Option 3 is likely to have more positive effects on these objectives than the other two options. Actions such as implementation of legislation/policy, mandatory targets, statutory bans and increase of landfill tax will enhance the positive effects of the other two Options within a shorter timeframe.
- The three Options are likely to have very limited effect in terms of increasing broad civic engagement in waste practice as they focus on actions only for key stakeholders within the C&D sector (i.e. client organisations, designers, product manufacturers, contractors, waste management industry, etc).

**Table 6.6 – Assessment of the Draft C&D Sector Plan**

| Objective | Do Minimum Alternative<br>Option 1: Business as Usual (TWZ) | Preferred Option<br>Option 2: Best Practice (draft C&D) | Do Maximum Alternative<br>Option 3: Beyond Best Practice | Commentary |
|---|---|---|---|---|
| **Waste Management** | ↓ | ✓✓ | ↑ | 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.<br><br>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, public procurement requirements, partial funding, etc in order to raise awareness of sustainable waste reduction and encourage behavioural change among the C&D sector and public bodies.<br><br>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 implementation of legislation/policy, mandatory targets and requirements, award of grants, accredited training, statutory bans, increase of landfill tax, 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. However, Option 3 will be more costly than Option 2. |
| **Waste Infrastructure** | ↓ | ✓ | ↑ | 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.<br><br>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 |

| Objective | Do Minimum Alternative<br>Option 1: Business as Usual (TWZ) | Preferred Option<br>Option 2: Best Practice (draft C&D) | Do Maximum Alternative<br>Option 3: Beyond Best Practice | Commentary |
|---|---|---|---|---|
| | | | | available technologies and consumption behaviours. This will also have a less positive effect on this objective than Option 2 as it does not include actions to train/retain workforce.<br><br>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, statutory bans, accredited training, increase of landfill tax, 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. |
| **Landscape, biodiversity and cultural heritage** | ? | ✓ | ↑ | 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 plastics), 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.<br><br>Option 3 has been assessed as having a more positive outcome in terms of these objectives as the proposed actions 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. |
| **Soil** | ? | ✓ | ↑ | |
| **Water** | ? | ✓ | ↑ | |
| **Air quality, noise and odour** | ? | ✓ | ↑ | |

| Objective | Do Minimum Alternative<br>Option 1: Business as Usual (TWZ) | Preferred Option<br>Option 2: Best Practice (draft C&D) | Do Maximum Alternative<br>Option 3: Beyond Best Practice | Commentary |
|---|---|---|---|---|
| **Climate change** | ? | ✓ | ↑ | 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.<br><br>Option 3 will be a more beneficial option compared to the other two for all categories of actions since actions such as implementation of legislation/policy, mandatory targets, statutory bans and increase of landfill tax will enhance the positive effects of the other two Options within a shorter timeframe. |
| **Health** | ? | ✓ | ↑ | 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, reuse/recycling and landfill diversion of C&D waste, the options will help to achieve higher levels of waste minimisation and a better management of waste (i.e. use of quality protocols, etc); 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/recycling rates and the reduction in movement of HGV waste vehicles. The difference is that Option 1 may require more time than |

| Objective | Do Minimum Alternative<br>Option 1: Business as Usual (TWZ) | Preferred Option<br>Option 2: Best Practice (draft C&D) | Do Maximum Alternative<br>Option 3: Beyond Best Practice | Commentary |
|---|---|---|---|---|
| | | | | Option 2 to achieve these benefits and meet TZW targets.<br>The same applies for Option 3, being the effect more positive than the other two options. Actions such as implementation of legislation/policy, mandatory targets, statutory bans and increase of landfill tax will enhance the positive effects of the other two Options within a shorter timeframe. |
| **Civic engagement** | 0 | 0 | 0 | The three Options are likely to have very limited effect in terms of increasing civic engagement in waste practice as they focus on actions only for key stakeholders within the C&D sector (i.e. client organisations, designers, product manufacturers, contractors, waste management industry, etc). |

Assumptions and Limitations

6.6.12 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 C&D Sector Plan alternatives to meet the requirements of waste prevention, preparing for reuse, recycling, recovery and disposal set out in TZW.

6.6.13 TZW sets out a strategic vision for the future management of waste until 2050. The temporal scope or timeframe for the C&D Sector Plan alternatives therefore is the same and focuses on the period up to 2050.

6.6.14 The technical scope for the assessment of the alternatives covers the environmental topics and objectives used in the assessment for the draft C&D Sector Plan.

## 6.7 Mitigation 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 C&D Sector Plan. 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 the undertaking of an Environment Impact Assessment on 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.

6.7.4 The main negative effects identified and mitigations measures proposed are as follows:

Effect on local employment

Possible negative effect in relation to local employment opportunities in residual waste treatment through shift towards reuse and recycling of materials. 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 during construction.

Risk of soil and water pollution

Promotion of reuse and recycling could result in an increased risk of soil and water pollution if stockpiles of materials to be reused and/or waste to be recycled (i.e. aggregates) are not managed adequately. This is most likely to be a short term effect. Potential mitigation could include the consideration of WRAP and EA best practices to handle stockpiles of materials.

Effects on air quality

There may be some increase in emissions as a result of increased use of HGV's to collect bulky waste to prepare to be reused and recycled such as transport to/from waste transfer stations. However there are also 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 reprocessors 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 C&D interventions and/or measures for reducing the need to transport reuse items and waste to prepare to be reused.

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

**Table 6.7 Recommended Mitigation and Enhancement Measures**

| SA Topic | Recommended Mitigation and Enhancement Measures | Category of Actions to which this could be applied |
|---|---|---|
| **Waste Management and Waste Infrastructure** | Incorporate a commitment to include training and upskilling in the use of new tools, protocols, guidance etc and staff to be redeployed. Some limited employment opportunities could potentially be supported by the actions in the longer term, particularly through the management of waste during construction. | Waste Prevention (including Reuse): Education, Guidance and Tools;<br>Waste Prevention (including Reuse): Designing Out<br>Waste Prevention (including Reuse): Reuse Surplus Materials |
| | Include 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. | Preparation for Reuse: Education, Guidance and Tools<br>Waste Recycling: Education, Guidance, Tools and Market |
| | Promote the sustainable and safe/healthy location of new facilities. This includes avoiding areas at flood risk. | Waste Prevention (including Reuse): Education, Guidance and Tools<br>Waste Recycling: Education, Guidance, Tools and Market |
| | Consideration of waste issues through EIA of qualifying C&D interventions/schemes. | Waste Prevention (including Reuse): Education, Guidance and Tools |
| | Specify measures to raise awareness within the C&D sector of the landfill tax increase and the benefits of diverting from landfill. | Other Recovery and Disposal: Education and Guidance |
| **Landscape, Biodiversity and** | Consideration of landscape, biodiversity and cultural heritage issues through EIA of qualifying C&D | Waste Prevention (including Reuse): Education, Guidance and |

| SA Topic | Recommended Mitigation and Enhancement Measures | Category of Actions to which this could be applied |
|---|---|---|
| **Cultural Heritage** | interventions/schemes to protect and enhance urban and rural landscapes and resources. | Tools<br><br>Waste Recycling: Education, Guidance, Tools and Market |
| **Soil** | Consideration of soil issues through EIA of qualifying C&D interventions/schemes to protect and enhance soil resources. | Waste Prevention (including Reuse): Education, Guidance and Tools<br><br>Preparation for Reuse: Education, Guidance and Tools<br><br>Waste Recycling: Education, Guidance, Tools and Market |
| | Encourage the use of WRAP and EA best practices in handling stockpiles of aggregates to reduce the risk of soil pollution on site if stockpiles of materials (i.e. aggregates) are not managed adequately. | Waste Prevention (including Reuse): Education, Guidance and Tools<br><br>Waste Prevention (including Reuse): Reuse Surplus Materials<br><br>Preparation for Reuse: Education, Guidance and Tools |
| **Water** | Consideration of water issues through EIA of qualifying C&D interventions/schemes to protect and enhance the quality and quantity of water resources. | Waste Prevention (including Reuse): Education, Guidance and Tools<br><br>Preparation for Reuse: Education, Guidance and Tools<br><br>Waste Recycling: Education, Guidance, Tools and Market |
| | Encourage the use of WRAP and EA best practices in handling stockpiles of aggregates to reduce the risk of water pollution on site if stockpiles of materials (i.e. aggregates) are not managed adequately. | Waste Prevention (including Reuse): Education, Guidance and Tools<br><br>Waste Prevention (including Reuse): Reuse Surplus Materials<br><br>Preparation for Reuse: Education, Guidance and Tools |
| **Air Quality, Noise and Odour** | Consideration of air quality (including GHG), noise and odour issues through EIA of qualifying C&D interventions/schemes. | Waste Prevention (including Reuse): Education, Guidance and Tools<br><br>Waste Prevention (including Reuse): Reuse Surplus Materials<br><br>Preparation for Reuse: Education, Guidance and Tools<br><br>Waste Recycling: Education, Guidance, Tools and Market |
| | Ensure that new infrastructure minimise transportation distances of reused items and waste to be reused from/to premises for preparation for reuse. | Waste Prevention (including Reuse): Education, Guidance and Tools<br><br>Waste Prevention (including Reuse): Reuse Surplus Materials<br><br>Preparation for Reuse: Education, Guidance and Tools |

| SA Topic | Recommended Mitigation and Enhancement Measures | Category of Actions to which this could be applied |
|---|---|---|
| **Climate Change** | Ensure that qualifying C&D interventions/schemes minimise transport distance of reused items from/to premises for preparation for reuse and of recycled products. | Waste Prevention (including Reuse): Education, Guidance and Tools<br>Waste Prevention (including Reuse): Reuse Surplus Materials<br>Preparation for Reuse: Education, Guidance and Tools<br>Waste Recycling: Education, Guidance, Tools and Market |
| | Promote the use of renewable energy technologies in qualifying C&D interventions/schemes. | Waste Prevention (including Reuse): Education, Guidance and Tools<br>Waste Prevention (including Reuse): Reuse Surplus Materials<br>Preparation for Reuse: Education, Guidance and Tools |
| **Health** | Establishment of health and safety standards for qualifying C&D interventions/schemes where appropriate such as reducing the requirement for manual handling operations. | Waste Prevention (including Reuse): Education, Guidance and Tools<br>Preparation for Reuse: Education, Guidance and Tools<br>Waste Recycling: Education, Guidance, Tools and Market |

## 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[78]' 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.

[78]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

## 7.3 Aims and Objectives of the C&D Sector Plan 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 C&D Sector Plan;
- Generate recommendations which encourage positive health impacts and minimise negative ones;
- Assess the marginal, indirect, unverified and cumulative health inequalities associated with the draft C&D Sector Plan;
- Maximise the health opportunities of the draft C&D Sector Plan;
- 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 conducted upon the C&D Sector 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 C&D Sector 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.

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 An 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 |
| --- |
| • Reduction in resource use and waste generation at the industrial and retail level<br>• Reduction in transportation of waste in terms of both volume and |

| Potential Health Pathways Associated with Waste |
| --- |
| management<br>• Reduction in environmental impacts of treatment and disposal of waste.<br>• Benefits through improved household waste-resource management<br>• Reducing the level of waste sent to landfill<br>• Increase the reuse and recycling of resources diverting waste from disposal<br>• Reduction in waste management emissions to air, water and ground<br>• Need to consider household type and barriers that may limit composting, recycling or storing of recyclates or pose a risk to residents<br>• 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. |

7.5.6 The following socio-economic health pathways were identified:

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

General population

7.5.7 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. However there were likely to be positive health benefits related to better, more sustainable and more integrated waste management and treatment.

Specific Population Groups

7.5.8 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 C&D Sector Plan SA, links were made between the established overarching determinants for health, the sub-objectives of the C&D Sector 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**

| | |
|---|---|
| **Unemployment** | • In 2009 unemployment rate in Wales reached 7.5%<br>• 200,000 (18.3%) working-age people had been receiving a key out-of-work benefit for two years or more.<br>• Almost half of part-time workers in Wales earn less than £7 per hour<br>• 80% of key out-of-work benefits are claimed due to ill-health in Wales<br>• 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<br>• In Wales £7.5800,000 is paid in working age benefits each working day<br>• Two thirds of the long term claimants in Wales are aged 54 or less<br>• A person who has received Incapacity Benefit for 6 months has a 50% chance of remaining on that benefit 4 years later<br>• 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 |
| **Crime** | • Jobless offenders are more likely to re-offend than those who gain work, and are 13 times more likely to have been in care<br>• An offender in Wales can have a heroin addiction needing £150 a day. requiring an annual income of £70,000 |
| **Education** | • 15% of all adults of working age in Wales reported having no qualifications; |
| **Health** | • Unemployed men in Wales are twice as likely to develop mental illness as working men.<br>• Debt, mental health and drug and alcohol abuse are reported as key barriers to work by employment advisers in Wales<br>• 5% of all hospital admissions in Wales are related to alcohol use<br>• 50% of the areas with limiting long-term illness are located in the north of the Valleys.<br>• Rate of premature death is 50% higher for men than for Women in Wales. |
| **Housing** | • Number of homeless families in temporary accommodation in Wales is three times that of 10 years ago.<br>• Overcrowding in accommodation is four times as prevalent in rented |

| | |
|---|---|
| | accommodation as in owner-occupation |
| **Social Cohesion** | • 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.<br>• Three-quarters of social renters do not participate in any organisation compared to half of owner-occupiers.<br>• In 2008 32% of children in Wales were living in Poverty<br>• In Wales half of all children eligible for free school meals attend a fifth of the schools |

Assessment of C&D Sector Plan

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 both 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 plan 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.

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 C&D Sector Plan action.

**7.8 Health Impacts Assessment Summary**

7.8.1 The C&D Sector Plan has proposed measures which seek to specifically prepare the construction and demolition industry to address issues related to waste prevention, reuse, preparation for reuse, recycling as well as treatment and disposal.

7.8.2 Generally, it is the actions which would be applied through mandatory measures that will have a positive health impacts.

7.8.3 The outcome of the non-mandatory actions cannot be confirmed. Therefore, these actions were assessed as potentially having no health impact.

7.8.4 The C&D Sector Plan provides an opportunity for a considerable positive health effect upon economy and employment as it promotes new markets for material reuse and the practise of deconstruction rather than demolition.

7.8.5 A strong association exists between long-term unemployment and poor health. As such, where the C&D Sector Plan generates new employment opportunities it also provides a positive heath impact on the employment itself and the general economy.

7.8.6 Promoting the use of Welsh ecodesign products would have a direct positive health effect upon employment, economy and the environment as ecodesign products would be locally sourced.

7.8.7 A reduction in construction and demolition waste disposal through mandatory measures would result in a reduction in emissions from waste processing and disposal. This will provide direct positive health benefits to both social capital and the environment.

7.8.8 On the other hand, actions involving the establishment of new facilities were assessed as potentially inflicting partially negative health impacts on the local environment and on the social capital and community cohesion. This was due to a potential for increase in pollutant emissions (e.g. dust and combustion products) and to noise disruption to the neighbouring community as a result of new facilities.

7.8.9 Phasing out of hazardous materials has been promoted under ‘Sustainable Construction Products’. This action would directly result in a positive impact upon the environment, should this be successful.

# 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 C&D Sector Plan 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 C&D Sector Plan 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 C&D Sector Plan

8.1.4 This assessment has been based upon preliminary information provided by Welsh Government on the scope of the C&D Sector Plan, the Scope and Objectives are presented in Section 5.

## 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. However 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).

8.2.2 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 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.

8.2.3 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'.*

8.2.4 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...'*

8.2.5 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 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[79] 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

8.5.1 This stage considers whether the C&D Sector Plan 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.

8.5.2 The C&D Sector Plan 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.

## 8.6 Step 2: Description of the C&D Sector Plan

8.6.1 The C&D Sector Plan looks at the developing approaches to meet the milestones and targets for the C&D sector;

- The prevention of waste arising from the C&D sector throughout the life cycle of a construction and the different construction phases (demolition; site clearance, sub-structure, super-structure, fittings and renovations);
- Increasing the reuse and recycling opportunities for C&D wastes by the sector and stakeholders throughout the life cycle of a construction and the different construction phases;
- Increasing, where relevant and appropriate other recovery methods for waste arising from the C&D sector throughout the life cycle of a construction and the different construction phases;
- Reducing the quantities of waste disposed to landfill by the C&D sector;

[79] Further guidance on how to undertake HRAs can be found at: http://www.environment-agency.gov.uk/business/regulation/101795.aspx

- Reducing the quantities of future hazardous and legacy wastes generated by the C&D sector throughout the life cycle of a construction and the different construction phases.

8.6.2 The C&D Sector Plan focuses primarily on measures that aim to facilitate and support changes within the C&D industries in order to assist them in meeting the objectives and targets set for the Sector Plan.

8.6.3 An HRA[80] 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). An 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. The assessment also found that there was some potential for adverse effects on European sites from the development of new waste management infrastructure such as high efficiency EfW plants which may be used to address difficult wastes such as wood and the use of anaerobic digestion (AD) for biodegradable wastes generated by the C&D sector. Such new infrastructure may also have a positive effect on European sites if the energy produced from these plants offsets energy production from conventional energy plants where emissions result in adverse effects on sites.

8.6.4 The promotion of more extensive recycling was recognised as having the potential to require more Materials Recycling Facilities (MRF) and Waste Transfer Stations (WTS) to sort and separate recyclable materials (though the number of these is dependant on the extent of source segregation). Careful siting of such sites will be required where they are located in proximity to Natura 2000 and Ramsar sites to avoid adverse effects. Increased levels of recycling should also result in a reduction in emissions from plants extracting and processing primary raw materials. This could have a positive effect on some Natura 2000 and Ramsar sites depending on the location of the facilities.

8.6.5 Given that the C&D Sector Plan 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 C&D Sector Plan at a high level beyond that of the assessment undertaken previously for TZW HRA.

8.6.6 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

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

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 *(sites need good road/rail access)* |
| Vulnerability to Flooding *(flooding presents unacceptable environmental risk)* |
| Vulnerability to other Natural Disasters *(range of unanticipated environmental impacts)* |
| Proximity to other Industrial Facilities *(cumulative impacts, in particular associated with accidents on nearby facilities)* |
| Proximity to Urban or Residential Areas (*sites likely to be some distance from residential areas but on urban fringes to ensure adequate workforce)* |
| Proximity to Military Activities (*hazards associated with military activities)* |
| Proximity to Designated Sites of Ecological Importance (*development within sites of importance typically prohibited*) |
| Proximity to Areas of Amenity, Cultural and Heritage Importance (*development within such zones may often be restricted*) |
| Proximity to Water Courses and Ground Water Protection Zones (*storage and use of waste substances within sensitive areas generally restricted*) |
| Proximity to Resources required during operation *(treatment facilities likely to be near to point of waste generation within reason)* |

8.6.7 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.

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 C&D Sector Plan. 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.

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

8.7.1 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 C&D Sector Plan. Some of the effects (identified in Table 8.2) may occur as a result of the C&D Sector Plan 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 | • sewage and industrial effluent discharges from new developments<br>• abstraction to secure water supplies for planned growth (housing, industry)<br>• flood and coastal risk management development (for example, implementation of new flood defences) |
| Soil and Geology | • changes in land use, in particular agricultural production |
| Air quality | • increase in atmospheric pollutants (for example, road, rail, airports expansion)<br>• changes in atmospheric pollutants from power generation, in particular change in fossil fuel use<br>• 'cleaner' technologies in industrial and domestic use |
| Disturbance | • construction and operation of new developments (transportation, residential, commercial, industrial)<br>• recreational pressures including trampling from settlements expansion, improved access (for example, national coastal footpaths<br>• infrastructure at height (chimney stacks, wind turbines) |
| Habitat (and species) loss and fragmentation | • direct land take (for example, road, rail, settlements, industrial)<br>• barriers to migration (for example, tidal power, bridge construction) |

8.7.2 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.

## 8.8 Likely Significant effects

8.8.1 The C&D Sector Plan does not contain any spatial elements or significant new information regarding waste infrastructure and does not provide a framework for proposals to achieve planning consent.

8.8.2 Notwithstanding the requirement for further assessment, it is highly likely that within the regulation and permitting of the development of projects to implement the Waste C&D Sector Plan, 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 is required via the Water Framework Directive[81], 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

[81] Water Framework Directive (2000): http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0060:EN:HTML

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.

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

8.8.4 Given the possibility of significant effects associated with the C&D Sector Plan, further detailed assessment is necessary to satisfy the requirements of the Habitats Regulations. This detailed assessment is described as an 'Appropriate Assessment'.

8.8.5 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.

8.8.6 The C&D Sector Plan 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.

8.8.7 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.

8.8.8 Where possible over-arching mitigating statements should be incorporated within the C&D Sector Pan, 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.

8.8.9 Through the HRA screening it has not been possible to categorically demonstrate that C&D Sector Plan will not have any likely significant effects upon Natura 2000 sites, the Natura 2000 network or Ramsar 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.

8.8.10 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 C&D Sector Plan WAG and CCW) to apply in full the key tests as stipulated by the Habitats Directive.

8.8.11 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.

# 9 IMPLEMENTATION AND MONITORING

## 9.1 Links to other Plans and Programmes

9.1.1 The C&D Sector Plan contains actions linked to other TZW Sector Plans, such as the CIM Sector Plan, the I&C Sector Plan and the Public 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 C&D Sector Plan.

9.1.4 A description of the links between the C&D Sector Plan and other TZW Sector Plans is provided below[82].

Collections, Infrastructure and Markets (CIM) Sector Plan

9.1.5 The draft CIM Sector Plan was published for consultation on 10th March 2011. It seeks to create the conditions for a sustainable approach to resource management by ensuring that services are set up in Wales to guarantee the collection of a high volume of clean, source segregated recyclate that can then be delivered to reprocessors based in Wales as far as possible, and that closed loop end markets are developed for the recyclates. The draft plan seeks to retain the economic value of the recyclate within the Welsh economy, as far as possible.

9.1.6 The plan identifies where improvements in recyclate collection are required and where opportunities to develop infrastructure exist. The draft plan aims to facilitate developments in infrastructure by demonstrating need for such investments. It will also help to identify the skills and qualifications required to support the changing nature of the waste management infrastructure.

Industrial and Commercial (I&C) Sector Plan

9.1.7 The Industrial and Commercial Sector Plan is in the process of development and will focus specifically on:

- commercial waste arising from any premises which are used wholly or mainly for trade, business, sport recreation or entertainment (excluding household and industrial);
- industrial waste arising from any factory and from any premises occupied by an industry (excluding mines and quarries);
- products (and associated packaging) produced or sold from the industrial and commercial sector that eventually become waste – in accordance with the principle of extended producer responsibility.

9.1.8 The Plan scope is likely to cover:

- waste prevention – including of wastes produced by the sector, and in relation to producer responsibilities in respect of products produced by the sector (with a focus on eco-design);

[82] Welsh Government, Draft C&D Waste Sector Plan, September 2011

- preparation for reuse;
- source segregation and separate collection of key recyclate streams, including paper, card, metal, glass and plastic;
- eco-design of products and packaging produced and/or sold by the sector in order to increase reuse and recyclability, and increase the recycled content; and
- sustainable management of residual waste.

Public Sector Plan

9.1.9 The Public Sector Plan is in development and will establish how the public sector in Wales will manage resources efficiently, develop sustainable procurement activities and prevent waste production arising from provision of services in relation to healthcare, education, local government, justice administration and emergency response in Wales. It will set out a challenging action plan which will aid the public sector to provide leadership to all other sectors and become a driver of change.

9.1.10 There are strong links between the C&D Sector Plan and the Public Sector Plan as the public sector is a major construction client in Wales. Local government procures some 40% of the construction industry's outputs[83]. Value Wales estimated that in Wales, public construction procurement accounts for approximately 20% of overall annual Welsh public sector procurement spend. Therefore, any proposed actions relating to driving change through procurement of services and materials will need to be cross-referenced and may well be delivered via the Public Sector Plan rather than this one.

## 9.2 Monitoring

9.2.1 A monitoring strategy will be implemented to monitor potential effects of the implementation of the C&D Sector Plan. 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

[83] WRAP – http://www.wrap.org.uk/construction/how_do_I_reduce_waste/sectors/index.html

- 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 B6 of the SA/SEA process).

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

- 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 C&D Sector Plan 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 C&D Sector Plan**

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| **Waste Management**<br>To increase sustainable waste management and reduce Wales' ecological footprint | • Waste arisings and disposal across all sectors<br>• Waste contribution to Ecological Footprint<br>• Resource use – Wales' domestic material consumption<br>• Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources | • Waste arisings by sector in Wales, (kilotonnes per annum)<br>• Waste arisings by disposal (kilotonnes per annum)<br>• Ecological footprint (global hectares per person), Wales and the UK<br>• Resource efficiency - the ratio of carbon dioxide emissions to GVA at current prices<br>• Percentage of electricity generated from renewable sources<br>• Packaging waste recovered or recycled in Wales | • To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;<br>• To increase infrastructural capacity and facilities for sustainable waste management;<br>• To encourage behavioural change and participation amongst household, commercial and industrial operators; and<br>• To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management. | Stocks of Intermediate Level Waste (ILW) and Low Level Radioactive Waste (LLW)<br><br>Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources<br>Resource efficiency<br>State of Environment (SoE) indicators:<br>• Indicator 2a: Ecological footprint<br>• Indicator 6b: Percentage of municipal waste recycled or composted<br>• Indicator 9a: Quantity of municipal waste per person per annum<br>• Indicator 39a: Trends in radioactive discharges from major sources in Wales<br>• Indicator 18a: Proportion of construction and demolition waste reused and recycled<br>• Indicator 12b: Proportion of packaging waste recovered in the UK | • Environment Agency Wales<br>• Environment Agency Waste Data http://www.environment-agency.gov.uk/research/library/data/<br>• www.wastedataflow.org<br>• SoE Report, available at: www.statswales.wales.gov.uk<br>• Nuclear Development Agency http://www.nda.gov.uk/ukinventory/summaries/wales.cfm<br>• Packaging Waste Data http://www.defra.gov.uk/environment/waste/producer/packaging/index.htm<br>• Resource efficiency data, Department of Energy and Climate Change www.decc.gov.uk<br>• 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.<br>• Surveys, or other methods, may be used for business waste. |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | | | • Indicator 12d: Number of Green Dragon certified companies in Wales | |
| **Waste Infrastructure**<br>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this | • Progress on green jobs, skills and training through the Green Jobs Strategy<br>• Employment - percentage of people of working age in work*<br>• Resource efficiency – the ratio of carbon dioxide emissions to GVA at current prices<br>• Resource use – Wales' domestic material consumption | • Packaging waste recovered or recycled in Wales<br>• The number of fly-tipping incidents by type of land<br>• Most common types of fly-tipped waste<br>• Economic output - Gross Value Added (GVA) and GVA per head<br>• Waste arisings by sector in Wales, (kilotonnes per annum)<br>• Waste arisings by disposal (kilotonnes per annum)<br>• Percentage of municipal waste (excluding abandoned vehicles) recycled or composted in Wales<br>• Kilograms per person per annum of municipal waste in Wales<br>• Kilograms per person per annum of household waste in Wales | • To promote markets for recyclates and recycled goods;<br>• To encourage the development and deployment of alternative waste technologies and R&D;<br>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;<br>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;<br>• To support existing and develop new social enterprises focusing on waste as a community resource;<br>• To promote equality and | Stocks of ILW and LLW<br>The number of fly-tipping incidents<br>Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources<br>Resource efficiency<br>State of Environment (SoE) indicators:<br>• Indicator 2a: Ecological footprint<br>• Indicator 6b: Percentage of municipal waste recycled or composted<br>• Indicator 9a: Quantity of municipal waste per person per annum<br>• Indicator 39a: Trends in radioactive discharges from major sources in Wales<br>• Indicator 18a: Proportion of construction and demolition waste reused and recycled<br>• Indicator 12d: Number of Green Dragon certified | • Environment Agency Waste Data http://www.environment-agency.gov.uk/research/library/data/<br>• www.wastedataflow.org<br>• SoE Report, available at:: www.statswales.wales.gov.uk<br>• Nuclear development Agency data: http://www.nda.gov.uk/ukinventory/summaries/wales.cfm<br>• Packaging Waste data: http://www.defra.gov.uk/environment/waste/producer/packaging/index.htm<br>• Resource efficiency statistics available at: www.decc.gov.uk<br>• New waste infrastructure developed<br>• Number of new business within the collection, infrastructure markets |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | • Resource efficiency - the ratio of carbon dioxide emissions to GVA at current prices<br>• Percentage of electricity generated from renewable sources | opportunity to access waste management facilities to prevent instances of fly-typing;<br>• To provide cost-effective and reliable sustainable waste management. | companies in Wales<br>• Indicator 12b: Proportion of packaging waste recovered in the UK<br>• Indicator 28b: Trends in level of fly-tipping | |
| **Landscape, biodiversity and cultural heritage**<br>To protect and enhance urban and rural landscapes and resources, including ecological services and functions | • Resource use – Wales' domestic material consumption<br>• | • Percentage of species in favourable, recovering or unfavourable condition in Wales<br>• Land Cover Map - % of Wales' land cover designated for nature conservation<br>• Trends in Biodiversity Action Plan priority species and habitats in Wales<br>• Short-term abundance of widespread breeding birds in Wales<br>• Long-term changes in the ranges of widespread breeding birds, by major habitat group in Wales | • To protect designated landscapes: environmental, cultural and historic;<br>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;<br>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;<br>• To protect the | • Indicator 19a: Trends in Biodiversity Action Plan species and habitats<br>• Indicator 21: Percentage of features on Natura 2000 sites in favourable or recovering condition<br>• Indicator 26: The number of historic assets deemed to be at risk<br>• Indicator 23: Indicators, measuring quality and diversity, to be developed on completion of Countryside Council for Wales (CCW) landscape characterisation work<br>• Indicator 27b: The | • Countryside Council for Wales (CCW) www.ccw.gov.uk and http://landmap.ccw.gov.uk/.<br>• SoE Report, available at:: www.statswales.wales.gov.uk |

[84] 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 C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | • Existing levels of statutory cultural heritage protection in Wales - Number and condition of scheduled monuments<br>• Percentage of sensitive habitats exceeding critical loads for acidification/ eutrofication in Wales<br>• Accessible Natural Greenspace Standards by local authority<br>• Welsh Outdoor Recreation Survey<br>• Percentage of certified woodland area in Wales and the UK | character and visual identity of landscapes and townscapes, including cultural and historic landscapes;<br>• To promote the use of brownfield land use;<br>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;<br>• To remediate contaminated land. | percentage of the population meeting each of Countryside Council for Wales size/distance criteria for access to natural greenspace.<br>• Indicator 29d: The percentage of adults living in Wales who frequently use the outdoors for informal recreation<br>• Indicator 33j: Area of natural and semi-natural habitat where deposition of acid exceeds critical loads<br>• Indicator 33k: Area of natural and semi-natural habitat where deposition of nitrogen compounds exceeds critical loads<br>• Indicator 20b: Proportion of woodland that is certified<br>• Indicators of the status of ecosystem services[84] (e.g. inputs of nitrogen and phosphorus fertilisers, ocean acidification in terms of GHG and carbon dioxide emissions, sea temperature rise, number of wild fisheries, hedgerows in lowland | |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | | | landscapes, costs of dealing with invasive species) | |
| **Soil**<br>To protect and enhance soil resources | • Resource use – Wales' domestic material consumption | • Estimated total stocks of carbon in Welsh soil (million tonnes)<br>• Contaminated land brought back into beneficial use in Wales (hectares),<br>• LULUCF kilotonnes of carbon dioxide (CO2) equivalent<br>• Variations in the percentage of soil groups in Wales<br>• % of Wales' land cover designated for soil conservation<br>• Carbon stock (tonnes per hectare) in the top 0-15cm of soil in Welsh broad habitats | • To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation;<br>• To protect against contamination to soil;<br>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils. | • 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<br>• Indicator 34: Land affected by contamination brought back into beneficial use<br>• LULUCF net sink of greenhouse gases in Wales<br>• Land Use cover<br>• Indicator 16b: The carbon stock and pH in the top 15cm of soil as recorded by Countryside Survey | • SoE Report, available at:: www.statswales.wales.gov.uk<br>• Countryside Council for Wales (CCW) www.ccw.gov.uk and http://landmap.ccw.gov.uk/ |
| **Water**<br>To protect and promote the sustainable use of water resources | • Resource use – Wales' domestic material consumption<br>• | • Percentage of river lengths of good, fair, poor or bad biological or chemical quality in Wales<br>• Water Framework Directive Classification - ecological status in Wales | • To promote sustainable flood risk management; and<br>• To protect and enhance water quality and quantity in inland, coastal and maritime environments. | • Indicator 35a: River water quality - biological and chemical<br>• Indicator 35c: Compliance with 'good status' under the Water Framework Directive<br>• Indicator 13b: The percentage of | • SoE Report, available at:: www.statswales.wales.gov.uk<br>• Environment Agency |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | • Water Framework Directive Classification - chemical status in Wales<br>• Water Framework Directive Classification - groundwater status in Wales<br>• Percentage of water resource zones meeting target headroom requirements in Wales<br>• Numbers of properties benefiting from flood alleviation schemes in Wales<br>• Number of properties in Wales with a significant, moderate or low risk of flooding from the rivers or sea<br>• Number of properties in Wales with a significant, moderate or low risk of flooding from the rivers or sea, by source<br>• The percentage of bathing waters which satisfy EC mandatory and guideline standards in Wales<br>• Water abstracted from the | | resource zones meeting target headroom requirements<br>• Indicator 13a: Level of leakage as a percentage of water supplied in Wales<br>• Indicator 31a: Annual cost of damage due to flooding<br>• Indicator 31b: Probability of flooding of assets at risk<br>• Indicator 36b: Bathing water quality<br>• Indicator 14b: Volume of water abstracted from the environment | |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | environment (excluding electricity generation) in Wales, gigalitres per year | | | |
| **Air quality, noise and odour**<br>To protect and enhance air quality in local, regional and national context | • Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources<br>• Resource efficiency – the ratio of carbon dioxide emissions to GVA at current prices<br>• Resource use – Wales' domestic material consumption<br>• | • Annual mean measured concentrations of heavy metals in the air as a percentage of objective thresholds in the Air Quality Standards (Wales) Regulations<br>• Percentage of sensitive habitats exceeding critical loads for acidification in Wales<br>• Number of days per year with moderate or higher pollution levels, urban sites in Wales<br>• Number of days per year with moderate or higher pollution levels, urban and rural sites<br>• Number of People Living in 'AQMAs'<br>• Number of waste infrastructure sites built in AQMAs<br>• Number of waste infrastructure sites | • To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;<br>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;<br>• To minimise adverse impacts to noise levels within communities;<br>• To minimise odours arising from waste processing and its impact upon local communities. | • Indicator 33b: Air concentrations of Heavy Metals<br>• Indicator 33a: Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations<br>• Indicator 33c: Number of people living in Air Quality Management Areas<br>• Indicator 33j: Area of natural and semi-natural habitat where deposition of acid exceeds critical loads<br>• Indicator 33e: Level of emissions from Wales of ammonia<br>• Indicator 33f: Level of emissions from Wales of nitrogen oxides<br>• Indicator 33g: Level of emissions from Wales of fine particulates | • SoE Report, available at:: www.statswales.wales.gov.uk<br>• Environment Agency<br>• AQMAs- Defra: http://aqma.defra.gov.uk/maps-wales.php?&la_id=445 |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | built in urban areas | | | |
| **Climate change**<br>To assist with Wales' capacity to adapt to and mitigate against climatic change | • Greenhouse gas emissions<br>• Electricity from renewable sources - percentage of electricity produced in Wales generated from renewable sources<br>• Resource efficiency – the ratio of carbon dioxide emissions to GVA at current prices<br>• Resource use – Wales' domestic material consumption | • Estimated emissions of greenhouse gases in Wales, million tonnes of carbon dioxide equivalent<br>• Estimated carbon dioxide emissions in Wales by source, millions of tonnes<br>• LULUCF is a net sink of greenhouse gases in Wales<br>• Percentage of electricity generated from renewable sources<br>• Percentage of energy generated from AD and EfW plants<br>• Number of waste infrastructure sites built within land at risk of flooding | • To reduce GHG emissions;<br>• To contribute to national, regional and local level carbon abatement strategy/objectives;<br>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;<br>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects. | • Indicator 7a: Annual emissions of basket of greenhouse gases (by sector)<br>• Indicator 30a: Percentage of people whose main mode of travel to work is a) walking b) cycling<br>• Electricity from renewable sources<br>• Energy from AD and EfW plants | • SoE Report, available at:: www.statswales.wales.gov.uk<br>• Resource efficiency and energy statistics are available at: www.decc.gov.uk |
| **Health**<br>To protect and enhance the health and well-being of communities | • Outcomes generated by relevant third sector organisations.<br>• Active community participation - percentage of people volunteering on a formal and informal basis<br>• Benefit dependency -the | • GVA per head<br>• Employment status of those of working age<br>• Percentage of the population in low-income households<br>• Level of emissions of ammonia in Wales by source, kilotonnes<br>• Level of emissions of nitrogen oxides | • To provide safe, secure, mechanisms for civic engagement;<br>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;<br>• To provide opportunities for those with health | • Households below average income NS<br>• Economic output - Gross Value Added (GVA)<br>• Indicator 9a: Quantity of municipal waste per person per annum<br>• Indicator 33e: Level of emissions from Wales of ammonia<br>• Indicator 33f: Level | • SoE Report, available at:: www.statswales.wales.gov.uk<br>• Public Health Wales: http://www2.nphs.wales.nhs.uk:8080/<br>• Local Government Regulation, formerly the Local Authorities Coordinators of Regulatory Services (LACORS): http://www.lacors.gov.uk/lacors/home.aspx<br>• Environment Agency (monitor the number of noise/odour complaints and food waste diverted from landfill)<br>• Food Standards Agency www.food.gov.uk<br>• Food retailers monitoring data<br>• UK National Statistics http://www.statistics.gov.uk/hub/index.html |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | percentage of people of working age on key benefits<br>• Progress on green jobs, skills and training through the Green Jobs Strategy<br>• Employment - percentage of people of working age in work<br>• Resource efficiency – the ratio of carbon dioxide emissions to GVA at current prices | in Wales by source, kilotonnes<br>• Number of odour complaints against waste infrastructure sites<br>• Number of noise complaints with regard to waste infrastructure sites<br>• Number of waste infrastructure sites built in urban areas<br>• Number of green jobs created in the waste sector (non-disposal)<br>• Number of accidents at waste infrastructure sites<br>• Infant mortality Infant, neonatal and perinatal deaths, Wales (year)<br>• Life expectancy male/female<br>• Serious Acquisitive Crime in Wales<br>• Household Crime in Wales<br>• Percentage of respondents feeling safe in the local area in Wales<br>• Serious Acquisitive Crime in Wales,<br>• Household Crime in Wales<br>• Internal Migration | issues to gain suitable and meaningful employment;<br>• To provide safe and healthy working environments for employees within the waste and recycling industries. | of emissions from Wales of nitrogen oxides<br>• Indicator 33g: Level of emissions from Wales of fine particulates<br>• Health inequality - infant mortality Infant, neonatal and perinatal deaths, Wales (year)<br>• Life expectancy male/female<br>• Crime - Police recorded crime and British Crime Survey figures<br>• Welsh Index of Multiple Deprivation<br>• Workless households - working age<br>• Childhood poverty<br>• Pensioner poverty<br>• Average household costs and breakdown of average low income household expenditure<br>• Food waste diverted from landfill<br>• Obesity<br>• Health and Safety incidents in the waste industry | |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | Data<br>• Migration between Wales and the rest of the UK<br>• Number of companies, 50 employees involved in sustainable food clusters.<br>• Number of Health and Safety incidents in the waste industry<br>• Percentage of food waste diverted from landfill<br>• Obesity level | | | |
| **Civic engagement**<br>To increase civic engagement in sustainable waste practice | • Benefit dependency -the percentage of people of working age on key benefits<br>• Outcomes generated by relevant third sector organisations.<br>• Progress on green jobs, skills and training through the Green Jobs Strategy<br>• Employment - percentage of people of working age in work<br>• | • Percentage of rights of way which are easy to use in Wales<br>• 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)<br>• Percentage of respondents volunteering in Wales in last three years<br>• Average SAP ratings for dwellings<br>• Percentage of Key | • To raise awareness and understanding of sustainable waste strategy, objectives and management;<br>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor;<br>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical | • Indicator 30a: Percentage of people whose main mode of travel to work is a) walking b) cycling<br>• Indicator 29a: Percentage of total length of footpaths and other rights of way which were easy to use by the public<br>• Indicator 24c: Percentage of people volunteering formally or informally at least once over the last 3 years<br>• Indicator 24b: Percentage of people who feel safe in the local area - | • SoE Report, available at:: www.statswales.wales.gov.uk<br>• Welsh Government |

| Objective | Sustainable Development Indicators (TZW) | Baseline / Trend Indicators | Sub-objectives | Potential Indicators to Monitor the Effect of the C&D Sector Plan | Potential Source of Information |
|---|---|---|---|---|---|
| | | Stages 1, 2 and 3 assessments in Welsh first language<br>• Key Stage 2 results by subject (LEA, year, gender, level) NS<br>• Percentage of adults aged 19-21 qualified to National Qualification Framework level 2<br>• Qualification levels of working age adults by NQF level, local authority and NUTS2 area (gender, year) NS<br>• Households Below Average Income NS<br>• Workless households - working age | and social barriers to engagement;<br>• To support and provide opportunities for volunteering in the waste and recycling industries;<br>• To ensure all promotional literature is published in Welsh as well as English where appropriate;<br>• To provide community facilities including visitor and educational centres. | from Living in Wales Survey<br>• Welsh language - end of Key Stages 1, 2 and 3 teacher assessments in the subject of Welsh first language<br>• Housing - average energy efficiency (SAP rating)<br>• Welsh language - end of Key Stages 1, 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 C&D Sector Plan are accompanied by updated appraisals.

9.2.7 If adverse effects are found, the C&D Sector Plan 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 C&D Sector Plan and this SA Report, further guidance on developing aims and methods for monitoring will be undertaken to take into account responses received on the C&D Sector Plan and the SA, HRA and HIA. This will be outlined in the Post-adoption Statement that will be published with the adopted C&D Sector Plan.

## 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 effects) . | Section 6 |

| SEA Requirement | SA Report Section |
|---|---|
| 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:<br>- the scope of the environmental report<br>- The environmental report (Art. 6.1, 6.2)<br>- Other EU Members where the implementation of the plan or programme is likely to have significant effects on the environment of the country | <br>Section 1.7<br>Section 6<br>Welsh Government will undertake consultation with relevant EU Member States as appropriate. |

## 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 C&D Sector Plan 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 C&D Sector Plan and this SA Report is open until 31st January 2012.

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 C&D Sector Plan that we have not identified?
- Are there any mitigation and enhancement measures that could be included in the C&D Sector Plan to improve its sustainability?
- Are the monitoring measures set out sufficient to track significant effects that could be associated with the C&D Sector Plan?

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:

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Waste Strategy Branch

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Welsh Government
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Cardiff
CF24 0TP
Email: wastestrategy@wales.gsi.gov.uk
Tel: 02920 466090

### 10.2 Post-Adoption Statement

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

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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.<br>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[85]. |

[85] http://www.nda.gov.uk/ukinventory/glossary/

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|---|---|
| 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[86]. |
| Landspreading | Recovering waste by spreading on land primarily for agricultural benefit[87].<br>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[88]. |
| 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). |
| 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. |

[86] http://www.wao.gov.uk/assets/englishdocuments/Environment_Agency_Wales_Waste_Management_agw_2004.pdf
[87] http://www.wao.gov.uk/assets/englishdocuments/Environment_Agency_Wales_Waste_Management_agw_2004.pdf
[88] http://www.nda.gov.uk/ukinventory/glossary/

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|---|---|
| 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.<br>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". |

## APPENDICES

## 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

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 | Cadw is generally content with its content but suggest the following amendments:<br><br>p.14 Policy/ Plan/ Programme Reviewed<br>UK<br>Insert<br>• Ancient Monuments and Archaeological Areas Act 1979<br>• Town and Country Planning Act 1990<br>• Planning (Listed Building and Conservation Areas) Act 1990<br>• Planning (Hazardous Substances) Act 1990<br><br>National<br>Delete<br>• Welsh Assembly Government (2003) Review of the Historic Environment of Wales: A consultation Document<br><br>Insert<br>• Welsh Assembly Government (2009) The Welsh Historic Environment Strategic Statement<br>• 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 | Amend PPP review as indicated. |
| CCW | See attached letter. | Conference Call to discuss and agree actions held 28 October 2010.<br>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 | HE in England or the sea I am responding to advise you:<br>• there is a reference to RSS in Table 2.1 - the RSSs have been abolished<br>• PPS5, the Marine Plan and MPSs, and the NPSs are not referred to<br>• tables 2.2 and 3.1 refer only to the impact in Wales.<br>• in the absence of the RSS, the LDFs of the local authorities along the border would be important, likewise the HERs. | Review implications following dissolution of the Regional planning documents.<br><br>Review tables 2.2 and 3.1 to identify whether effects in England should be covered. |
| Environment Agency | 1.0 Introduction:<br><br>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.<br><br>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.<br><br>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)).<br><br>2.0 Key Messages<br><br>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.<br><br>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.'<br><br>Our key messages are below and our more detailed recommendations and comments on the consultation questions are in Annex 1. | No action<br><br>No action<br><br>No action<br><br>Noted<br><br>Noted |

| Respondent | Comment | Response/Action |
|---|---|---|
| | We recommend in respect of the proposed SA sustainability objectives:<br><br>1. The main water objective should relate to meeting Water Framework Directive outcomes and not General Quality Assessment.<br>2. The sub-objective of the water objective be reworded to include protection of water "resource" and not just "quality".<br>3. The landscape sub-objectives should include reference to protecting ecological services, not just connectivity.<br>4. The soils objective be amended to include reference to minimising loss of carbon and maintaining carbon storage capacity.<br>5. A "fly-tipping" sustainability objective should be included.<br><br>In line with the above we also recommend specific changes to the environmental information baseline with respect to:<br><br>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).<br>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.).<br>3. Baseline Ecosystem Services (ES) data available for Wales and the UK respectively at http://www.werh.org/nef.php.en and http://uknea.unep-wcmc.org . | <br><br>Review and amend<br>Review and amend<br>Review and amend<br>Review<br>Amendment proposed in relation to CCW comments<br>Review and amend<br><br><br><br>Review<br>Review<br>Review |
| EAW detailed response | **Consultation Question1**: 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?<br><br>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.<br><br>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.<br><br>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 | <br><br><br><br><br><br>Noted<br><br><br><br>Amend<br><br><br><br>Noted |

| Respondent | Comment | Response/Action |
|---|---|---|
| | important to ensure that WFD environmental protection objectives can be met.<br><br>More information can be found on the Agency's website in " See What's In Your Backyard" at :<br><br>http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&textonly=off&lang=_e&topic=wfd_rivers<br><br>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.<br><br>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.<br><br>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 mange 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.<br><br>**Consultation Question 2**: Are there any additional plans, programmes or environmental protection objectives that should be taken into account for this strategic-level environmental assessment?<br><br>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:<br><br>EU:<br><br>• EU Water Framework Directive 2000/60/EC http://ec.europa.eu/environment/water/water-framework/index_en.html<br><br>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 | Or at least ensure no detriment?<br><br>Check<br><br>Apply to MSP, C&D<br><br>possibly also to Retail and C&I<br><br>possibly also to Agriculture<br><br>N/A – this was explained in the scoping report and will be picked up in subsequent SA Reports.<br><br>Objective has already been revised and expanded in response to similar points raised by CCW<br><br>Check and add<br><br>Check and add |

| Respondent | Comment | Response/Action |
|---|---|---|
| | objectives for the SA and not GQA. | |
| | • 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). | Check and add |
| | • 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). | Check and amend |
| | • 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<br><br>UK. | Review |
| | • The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003<br><br>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. | Check and add |
| | • DEFRA/WAG Environmental Permitting (England and Wales) Regulations 2010.<br><br>National. | Add |
| | • WAGs Climate Change Strategy for Wales (Launched 7th Oct 2010) | Add |
| | • WAG (2007-2013) Rural Development Plan Programme (2007-2013) | Review and add |
| | • WAG (2009) Farming Food and Countryside: Building a Secure Future Strategy. | Review and add |
| | • WAG (2010) Food for Wales, Food from Wales 2010-2020 (currently subject to consultation) | Review and add |
| | • 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 | Review and add |
| | • TAN 15 –Development and Flood Risk (2004) | Check and add |
| | • TAN 6 Planning for Sustainable Rural | Check and add |

| Respondent | Comment | Response/Action |
|---|---|---|
| | Communities (includes sustainable agriculture and rural services) July 2010. | Check and add |
| | • TAN 8 Renewable Energy (2005) | |
| | • TAN 21 Waste (2001) this includes development of waste facilities and flood risk and implications for water quality | Check and add |
| | • 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. | Check and add |
| | • 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. | Check and add |
| | • In Wales, the first RBMPs were approved by the Minister in December 2009. See: http://wales.gov.uk/publications/accessinfo/drnewhomepage/environmentdrs2/environmentdrs2009/welshrbmps/?lang=en | Review and add |
| | Wales' 3 RBMPs for Western Wales; Dee; and Severn can be found at: http://www.environment-agency.gov.uk/research/planning/33106.aspx | Review and add |
| | Other plans and programme that may be relevant: | |
| | • 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. | Review and add |
| | • UK Shared Framework on SD | Review and add |
| | • 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). | Amend |
| | Documents currently being developed or imminently to be launched that should also be considered: | |
| | • Natural Environment Framework (currently out to consultation) | |
| | • WAG Welsh Soils Action Plan (consultation closed but final document not yet published). http://wales.gov.uk/consultations/environmentandcountryside/130308welshsoilsactionplan/;jsessionid=sQp3MZKBD2p7m61pdt8Z07rJhfN2nXWSfTp15JyMv1W5QJjVtS23!-42672990?lang=en | Review and add<br>Check and add |
| | 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 | Add Plan |

| Respondent | Comment | Response/Action |
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| | accessing schemes such as Glastir.<br><br>Points to note about Plans and Programme listed<br><br>• Creating Sustainable Places – DE&T – revised/updated 2010<br>• 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.<br><br>Additional comments:<br><br><u>Agriculture Sector Plan</u>.<br><br>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.<br><br>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.<br><br>Ecological Footprint<br><br>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.<br><br>**Consultation question 3**. 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.<br><br>As discussed above:<br><br>• WFD data/ River Basin Management Plans<br>• Fly-tipping data – fly capture (http://www.environment-agency.gov.uk/reserach/library/data/41333.aspx)<br>• The Welsh Index of Multiple Deprivation | Amend<br><br>Noted<br><br>Noted<br><br>Noted<br><br>Review<br><br>Review<br><br>Review |

| Respondent | Comment | Response/Action |
|---|---|---|
| | 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 asses how the plans will help address the issues causing deprivation. | Review |
| | **Consultation question 4**. Is there any important information that has not been addressed in view of the SA/SEA scope?<br><br>As discussed above: | |
| | It will be important to asses 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. | Review |
| | We also believe that data, information and a sustainability objective on Fly-tipping in Wales, are important information missing from the SA/SEA scope. | Review and add |
| | 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. | Review |
| | 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. | Noted |
| | Please see below some examples of where we believe the sector plans could help address fly-tipping:<br><br><u>Markets Sector Plan</u><br><br>Probable key areas of sector plan of relevance:<br>- Waste Collection & Infrastructure<br>- Treating waste and using it as a resource<br><br>Factors that may help alleviate fly-tipping:<br>- Turning waste into a resource so that people don't need or want to fly-tip<br>- Encouraging builders to use recycled materials instead of raw materials – maybe a reward scheme?<br>- Education to ensure waste is segregated properly and managed<br><br><u>Construction and Demolition Sector Plan</u><br><br>Probable key areas of sector plan of relevance: | Noted |

| Respondent | Comment | Response/Action |
|---|---|---|
| | - Small scale construction and demolition waste collection (trade waste sites)<br>- Difficult wastes such as plasterboard and asbestos<br>- Small traders / Builders – Housing repairs<br><br>Factors that may help alleviate fly-tipping:<br>- Making it easier to dispose of small quantities of waste via trade waste sites<br>- Having options for traders to dispose of difficult wastes<br>- Encourage builders to deal with wastes generated on household jobs rather than simply leave with the householder<br><br>We recommend that In Table 3.1 key sustainability issues (Material Assets) or in 5.6.2 (Commercial & Industrial Sector Plan), 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).<br><br>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.<br><br>**Consultation question 5.** Is the range of environmental problems, issues and receptors covered appropriate?<br><br>• 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.<br>• We also believe Fly-Tipping, soil carbon and assessment of the management of VLLW and LLW and hazardous waste should also be included.<br><br>**Consultation question 6**. Are there any major plans or projects that should be included in the assessment of cumulative effects?<br><br>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.<br><br>**Consultation question 7**. Are there any changes | Noted and reviewed as per comments on consultation question 4<br><br>Review |

| Respondent | Comment | Response/Action |
|---|---|---|
| | that should be made to the proposed SA/SEA objectives; including any consolidation of the objectives?<br><br>See comments above in Q 1 and 5, and<br><br>With respect to Table 4.1:<br><br>• 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.<br>• Under Climate Change, we suggest inclusion of the word "efficiency" before "use" in the 3rd bullet about energy.<br><br>**Consultation question 8**. Are there any other SA/SEA objectives, assessment criteria or indicators that should be included?<br><br>See specific points raised above re fly-tipping and soils.<br><br>**Consultation question 9**. Any further suggestions regarding the scope of the SA/SEA and its proposed assessment of the Sector Plans?<br><br>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.<br><br>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. | Amend<br><br>Amend<br><br>Review<br><br>Review |

| Respondent | Comment | Response/Action |
|---|---|---|
| | Baseline data on ecosystem services in Wales are now being collated by the UK National Ecosystems Assessment and will be available on http://www.werh.org/nef.php.en | Review and add |
| | 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. | Noted |
| | 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. | Review and add |
| | Whilst relatively new, various tools are available to undertake ecosystem service assessments. | |
| | Please see information on NEF and Ecosystems Services baseline and briefing guide at http://www.werh.org/nef.php.en and the national UK Ecosystem assessment at http://uknea.unep-wcmc.org | Check |
| Natural England | 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. | Noted. No action required. |
| | | |

## 3 Full consultation responses

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Jennet Holmes
Jennet.holmes@environment-agency.gov.uk

| | |
|---|---|
| Eich cyfeirnod<br>Your reference | |
| Ein cyfeirnod<br>Our reference | A-CAM011-67 |
| Dyddiad<br>Date | 26 October 2010 |
| Llinell uniongyrchol<br>Direct line | 01443 336096 |
| Ebost<br>Email: | Suzanne.whiting@wales.gsi.gov.uk |

Dear Ms Holmes

**TOWARDS ZERO WASTE – WASTE SECTOR PLANS SUSTAINABILITY APPRAISAL SCOPING DOCUMENT**

Thank you for consulting Cadw on the document described above.

Cadw is generally content with its content but suggest the following amendments.

**p.14 Policy/ Plan/ Programme Reviewed**

*UK*

Insert Ancient Monuments and Archaeological Areas Act 1979
Town and Country Planning Act 1990
Planning (Listed Building and Conservation Areas) Act 1990
Planning (Hazardous Substances) Act 1990

*National*

Delete Welsh Assembly Government (2003) Review of the Historic Environment of Wales: A consultation Document

Insert Welsh Assembly Government (2009) The Welsh Historic Environment Strategic Statement
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

Yours sincerely

**Mrs Suzanne Whiting**
Gweinyddu Henebion/Ancient Monuments Administration

CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

CADEIRYDD/CHAIRMAN: MORGAN PARRY PRIF WEITHREDWR/CHIEF EXECUTIVE: ROGER THOMAS
Anfonwch eich ateb at/Please reply to: Keith Davies - Cyfeiriad Isod/Address Below
Llinell Union/Direct Line: 01248 387285 Ffacs/Fax: 01248 385511
Ebost/Email: k.davies@ccw.gov.uk



1st October 2010

Ms Delyth Toghill
Principal Environmental Consultant
Parsons Brinkerhoff
29, Cathedral Road
Cardiff
CF1 9HA

Dear Ms Toghill

**Towards Zero Waste- Waste Sector Plans SEA Scoping Document, Sept 2010**

Thank you for giving the Countryside Council for Wales the opportunity to comment on the scoping document for the Waste Sector Plans SA/SEA. Our comments are made in the light of our responsibilities as a consultant body under the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 and as advisers to the Welsh Assembly Government on the natural heritage of Wales and its coastal waters. Our comments should also be read in conjunction with our comments on the SEA scoping and environmental report for the Wales Waste Plan (Towards Zero Waste) 21st July 2009 and 21st October 2008 and our comments on the SEA environmental report for the Municipal Waste Plan, 7th September 2010.

CCW welcomes and supports the efforts made by the WAG in undertaking the SEA process for Waste Sector Plans. Our specific comments on the scoping document are contained within Annex 1 to this letter. Our general comments follow below.

CCW when responding to both the previous consultations Wales Waste Plan and Municipal Waste Plan provided advice in relation to SEA baselines, objectives and indicators. We are therefore disappointed that full details of baseline information have not been included within this scoping document and that the only information provided is within Table 2.2: Summary of Baseline Review.

In our earlier responses, where some baseline information was provided, CCW commented that overcompartmentalism of baseline information obscured the complex relationships between environmental facets and processes. Given that this scoping document again merely indicates updated trends, it is difficult for CCW to comment as to whether our previous advice regarding previous waste related SEA's baselines have been addressed. In addition, CCW would suggest that baseline information, as forming the basis against which plans are assessed, should include information that is relevant to and reactive to the Plan under scrutiny. CCW would suggest that while the inclusion of social and community information provides a useful context for Wales as a whole, its relevance to waste plans is questionable. In addition, clarification would be welcomed regarding the source information for the

statements that 'the number of BAP species is stable or increasing' and that 'there will be little change to SSSI condition for habitats in the immediate future. CCW looks forward to seeing relevant and specific environmental baselines for all the plans under scrutiny in accordance with the Practical Guide on SEA.

CCW notes the intention to pursue alternatives adopted in MSP1. In our 7th September 2010 response, CCW raised concerns regarding the alternatives selected notably with regard to the lack of 'business as usual alternative' and the heavy emphasis on alternatives based on supply and demand. CCW would also suggest, given the broad scope of the seven plans under scrutiny, that the use of generic alternatives for all seven plans might not be appropriate.

CCW notes and welcomes the projected timetable for production of the suite of waste plans (and their associated SEAs and HRAs) and looks forward to working with WAG on these issues over the next year. Should you have any queries regarding our comments, please contact Alison Brown at our Bangor Headquarters. CCW looks forward to working with WAG on these developing plans

Yours sincerely

**Keith Davies**
**Head of Environment Policy Group**

Annex 1:

**Waste Sector Plans SEA Scoping Document, Sept 2010**

**Executive Summary**

CCW notes the intention to develop a series of seven sector plans to achieve TZW. Clarification is required as to the relationship of the Municipal Sector Plan Part 2 in the light of the recent consultation of the Wales Municipal Sector Plan (Part 1). CCW also notes and welcomes the intention to consider Agricultural Waste, but would welcome some clarification regarding the nature and scope of what is considered 'agricultural waste'.

CCW notes that this scoping report takes account of the SEAs and HRA for TZW and the Municipal Sector Plan (Part I). In our formal responses to the SEA scoping and environmental report for the Wales Waste Plan (Towards Zero Waste) 21st July 2009 and 21st October 2008 and our comments on the SEA environmental report for the Municipal Waste Plan, 7th September 2010, CCW indicated reservations regarding elements of the SEA process and stages- including the review of relevant plans, policies and programmes, selection of objectives and consideration of alternatives. In addition, CCW had concerns regarding the HRA process for these two plans. CCW would recommend that when undertaking HRA for these seven sectoral plans, the adoption of HRA methodologies used for TZW and the Municipal Waste should be carefully considered and that relevant and updated guidance be used (see CCW draft Guidance of HRA of Plans 2009 (revised 2010).

**1.1.17:** CCW welcomes the proposal to proceed with the HRA process for sectoral waste plans and would be happy to discuss HRA screening (test of likely significance) at the earliest possible opportunity.

**1.24:** CCW does not appear to have had sight of the post adoption (SEA) statement for the Towards Zero Waste strategy and would be grateful if a copy could be forwarded for our records.

**Figure 1.1:** Clarification would be welcomed as to how regional waste plans in Wales fit into this waste plan hierarchy.

**1.2.6**: CCW notes and welcomes the intention by WAG to consider CCW's request for 'consideration for funding…to be made conditional on relevant…environmental assessments being undertaken' however clarification would be welcomed as to what is meant by the statement that WAG will consider this issue on a sustainability basis and not solely taking into account environmental issues. It should be stressed that environmental assessments are likely to be required at both the project (EIA, HRA etc) and plan/programme (SEA, HRA) level.

**1.2.7:** In our formal responses to the SEA scoping and environmental report for the Wales Waste Plan (Towards Zero Waste) 21st July 2009 and 21st October 2008 and our comments on the SEA environmental report for the Municipal Waste Plan, 7th September 2010, CCW



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provided advice regarding elements of the SEA process and stages- including the review of relevant plans, policies and programmes, selection of objectives and consideration of alternatives. In addition, CCW had concerns regarding the HRA process for these two plans.

In our response to the SEA scoping for the Wales Plan (Towards Zero Waste) on 21st October 2008, CCW suggested that the following additional documents should be included within the review including,

**International**

UN Millenium Declaration
EU Second Climate Change Programme
EU Sixth Environmental Action Programme
The Ramsar Convention (listed under European within this scoping document)
The UNECE Protocol on SEA
The Bonn Convention on the Conservation of Migratory Species
UN Convention on Biological Diversity

**European**

Bern Convention on the Conservation of European Wildlife and Natural Habitats
Water Framework Directive (2000/60/EC)
Environmental Noise Directive 2002/49/EC
European Community Biodiversity Strategy 2005
Taking Sustainable Use of Resources Forwards: Thematic Strategy on the Prevention and Recycling of Waste 2005
Thematic Strategy for Soil Protection EC 2006
Assessment and Management of Flood Risks Directive 2007/60/EC
Marine Strategy Framework Directive

**UK**

The UK Government Sustainable Development Strategy 2005
Climate Change the UK Programme 2006
Air Quality Strategy for England, Wales and Scotland and Northern Ireland
Conservation of Habitats and Species Regulations 2010-09-30 Relevant Shoreline Management Plans (including those cross border with England)
Relevant River Basin Management Plans (including cross border)
Environmental Protection Act 1990
Natural Environment and Rural Communities Act 2006
Climate Change Act 2008
Environmental Permitting Regulations 2010

**Wales**

Relevant Shoreline Management Plans
Relevant Catchment Flood Management Strategies
Wales Tranquil Areas Maps 2009
AONB Management Plans
National Park Management Plans
TAN 15 Development and Flood Risk
Relevant Water Resource Management Plans (United Utilities, Dwr Cymru, Severn Trent, Dee Valley Water)
Habitats Directive Review of Consents programmes in Wales.
Register of Historic Landscapes in Wales

**2.2.2:** CCW notes that Chapter 5/Annex B of TZW SEA has been used, with the revised baseline in Municipal Waste Plan SEA. CCW also notes that responses received on the consultation on the Municipal Waste Plan have been incorporated within the baseline for this amalgamated SEA process. CCW has previously provided advice regarding the SEA baselines, objectives and indicators in both the context of the Wales Waste Plan and Municipal Waste Plan. It is therefore regrettable that full details of baseline information have, once again, not been included within this scoping document and that the only information provided is within Table 2.2: Summary of Baseline Review.

In our earlier responses, where some baseline information was provided, CCW commented that overcompartmentalism of baseline information obscured the complex relationships between environmental facets and processes. Given that this scoping document again merely indicates updated trends, it is difficult for CCW to comment as to whether our longstanding concerns regarding this SEA's baseline have been addressed. In addition, CCW would suggest that baseline information, as forming the basis against which plans are assessed, should include information that is relevant to and reactive to the Plan under scrutiny. CCW would suggest that while the inclusion of social and community information provides a useful context for Wales as a whole, its relevance to waste plans is questionable. In addition, clarification would be welcomed regarding the source information for the statements that 'the number of BAP species is stable or increasing' and that 'there will be little change to SSSI condition for habitats in the immediate future.

CCW looks forward to seeing relevant and specific environmental baselines for all the plans under scrutiny in accordance with the Practical Guide on SEA.

**3.1.4**: CCW notes the intention to reference and use sustainability issues identified in MSP1. CCW raised a number of concerns regarding the sustainability issues identified by the SEA for MSP1 (our response of Sept 7th 2010), in particular the heavy emphasis on social and economic matters. Given the very short space of time since the submission of our comments on issues in MSP1, clarification would be welcomed as to whether CCW's comments (and those of other consultees to the MSP1) have been taken into account, both in MSP1 itself and within the SEA process for this suite of plans.



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CCW would question, given the broad scope of sectoral waste plans proposed, whether generic sustainability issues can be used in all cases. For example, CCW would expect that sustainability issues relating to agricultural waste might be significantly different than those for municipal waste.

**Table 3.1.**

**Climate Change**
CCW notes the addition of an issue in respect of energy efficiency for waste facilities.

**Material Assets.**

CCW notes that sustainability issues for material assets for this suite of waste plans are exactly the same as those raised for the MSP1. CCW would question, given the broad scope of the seven sectoral waste plans proposed, whether generic sustainability issues can be used in all cases and for all plans.

See also our comments on key sustainability issues for Material Assets contained within our 7th September 2010 response to the environmental report for the Municipal Sector Plan (1).

**Air Quality.**

CCW notes that two sustainability issues contained within the SEA for the MSP1 and relating to health and air quality targets have not been included as issues within this scoping exercise. Explanation is required, particularly in respect of the lack of consideration of air quality targets.

See also our comments on key sustainability issues for Air Quality contained within our 7th September 2010 response to the environmental report for the Municipal Sector Plan (1).

**Biodiversity and Geodiversity**

CCW notes that sustainability issues for biodiversity and geodiversity for this suite of waste plans are exactly the same as those raised for the MSP1. CCW would question, given the broad scope of the seven sectoral waste plans proposed, whether generic sustainability issues can be used in all cases and for all plans.

See also our comments on key sustainability issues for Bio and Geodiversity contained within our 7th September 2010 response to the environmental report for the Municipal Sector Plan (1).

**Water**

CCW notes that sustainability issues for water for this suite of waste plans are exactly the same as those raised for the MSP1. CCW would question, given the broad scope of the seven

sectoral waste plans proposed, whether generic sustainability issues can be used in all cases and for all plans.

See also our comments on key sustainability issues for Water contained within our 7th September 2010 response to the environmental report for the Municipal Sector Plan (1).

**Cultural Heritage.**

CCW notes that sustainability issues for cultural heritage for this suite of waste plans are exactly the same as those raised for the MSP1. CCW would question, given the broad scope of the seven sectoral waste plans proposed, whether generic sustainability issues can be used in all cases and for all plans.

See also our comments on key sustainability issues for cultural heritage contained within our 7th September 2010 response to the environmental report for the Municipal Sector Plan (1).

**Landscape.**

CCW notes that sustainability issues for landscape for this suite of waste plans are exactly the same as those raised for the MSP1. CCW would question, given the broad scope of the seven sectoral waste plans proposed, whether generic sustainability issues can be used in all cases and for all plans.

See also our comments on key sustainability issues for landscape contained within our 7th September 2010 response to the environmental report for the Municipal Sector Plan (1).

**Soil**

CCW notes that the sustainability issue s contained within the SEA for the MSP1 and relating to landfill sites has not been included as issues within this scoping exercise. Explanation is required.

**Table 4.1:**

**Landscape, biodiversity and cultural heritage**
CCW notes and welcomes the inclusion of previously suggested amendments to these objectives however, it should be noted that brownfield land may be of natural heritage and cultural heritage in its own right.



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**Soil**

Soils and soil functions are valuable assets worthy of protection in their own right. CCW would suggest that additional objectives should be devised relating to the need to maintain and enhance soils and soil functions and services

**Water.**

An additional objective in respect of the need to protect, maintain and enhance water resources should be added to this list of objectives.

**Air quality, noise and odour.**

Noise issues should be considered not only in community terms but also in terms of potential disturbance to wildlife (included protected species), and wider tranquillity.

**4.2.3**: CCW notes the intention to pursue alternatives adopted in MSP1. In our 7th September 2010 response, CCW raised concerns regarding the alternatives selected notably with regard to the lack of 'business as usual alternative' and the heavy emphasis on alternatives based on supply and demand. CCW would also suggest, given the broad scope of the seven plans under scrutiny, that the use of generic alternatives for all seven plans might not be appropriate.

**5.8.5:** CCW would suggest that the following additional issue need to be considered within the forthcoming agricultural waste plan including;

- Fuel
- Herbicides and Herbicide containers
- Sheep Dip and Pesticides

FW SASEA Scoping Consultation - Towards Zero Waste Sector Plans.txt

From: AIRD, Pat
Sent: 25 October 2010 17:06
To: Toghill, Delyth
Subject: FW: SA/SEA Scoping Consultation - Towards Zero Waste Sector Plans
Attachments: Scoping Document Issue 20-09-10.pdf

Dear Delyth

Whilst this is unlikely to have a major impact on the HE in England or the sea I am responding to advise you:

* there is a reference to RSS in Table 2.1 - the RSSs have been abolished
* PPS5, the Marine Plan and MPSs, and the NPSs are not referred to
* tables 2.2 and 3.1 refer only to the impact in Wales.
* in the absence of the RSS, the LDFs of the local authorities along the border would be important, likewise the HERs.

Best wishes
Pat

ASIANTAETH YR AMGYLCHEDD CYMRU
ENVIRONMENT AGENCY WALES

# Environment Agency Wales Response to the Welsh Assembly Government Consultation:

# Towards Zero Waste: Waste Sector Plans Sustainability Appraisal Scoping Document September 2010

## 1.0 Introduction:

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.

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.

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)).

## 2.0 Key Messages

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.

We have therefore recommend some changes to help achieve the stated objectives of the SEA, especially to 'consider the environmental implications of the draft programme.'

Our key messages are below and our more detailed recommendations and comments on the consultation questions are in Annex 1.

We recommend in respect of the proposed SA sustainability objectives:

1. The main water objective should relate to meeting Water Framework Directive outcomes and not General Quality Assessment.
2. The sub-objective of the water objective be reworded to include protection of water “resource” and not just “quality”.
3. The landscape sub-objectives should include reference to protecting ecological services, not just connectivity.
4. The soils objective be amended to include reference to minimising loss of carbon and maintaining carbon storage capacity.
5. A “fly-tipping” sustainability objective should be included.

In line with the above we also recommend specific changes to the environmental information baseline with respect to:

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).
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.).
3. Baseline Ecosystem Services (ES) data available for Wales and the UK respectively at http://www.werh.org/nef.php.en and http://uknea.unep-wcmc.org .

## Annex 1.

**Specific consultation questions:**

**Consultation Question1: 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?**

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.

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.

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 important to ensure that WFD environmental protection objectives can be met.

*More information can be found on the Agency's website in " See What's In Your Backyard" at :*

http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&textonly=off&lang=_e&topic=wfd_rivers

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.

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.

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 mange 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.

**Consultation Question 2**: **Are there any additional plans, programmes or environmental protection objectives that should be taken into account for this strategic-level environmental assessment?**

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:

**EU:**

- EU Water Framework Directive 2000/60/EC http://ec.europa.eu/environment/water/water-framework/index_en.html

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 objectives for the SA and not GQA.

- 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).

- 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).

- 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

**UK**.

- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003

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/WAG Environmental Permitting (England and Wales) Regulations 2010.

**National.**

- WAGs Climate Change Strategy for Wales (Launched 7th Oct 2010)

- WAG (2007-2013) Rural Development Plan Programme (2007-2013)
- WAG (2009) Farming Food and Countryside: Building a Secure Future Strategy.
- WAG (2010) Food for Wales, Food from Wales 2010-2020 (currently subject to consultation)

- 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
- TAN 15 –Development and Flood Risk (2004)
- TAN 6 Planning for Sustainable Rural Communities (includes sustainable agriculture and rural services) July 2010.
- TAN 8 Renewable Energy (2005)
- TAN 21 Waste (2001) this includes development of waste facilities and flood risk and implications for water quality
- 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.
- 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.

- In Wales, the first RBMPs were approved by the Minister in December 2009. See: http://wales.gov.uk/publications/accessinfo/drnewhomepage/environmentdrs2/environmentdrs2009/welshrbmps/?lang=en

  Wales' 3 RBMPs for Western Wales; Dee; and Severn can be found at: http://www.environment-agency.gov.uk/research/planning/33106.aspx

**Other plans and programme that may be relevant:**

- 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.

- UK Shared Framework on SD

- 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).

**Documents currently being developed or imminently to be launched that should also be considered:**

- Natural Environment Framework (currently out to consultation)
- WAG Welsh Soils Action Plan (consultation closed but final document not yet published). http://wales.gov.uk/consultations/environmentandcountryside/130308welshsoilsactionplan/;jsessionid=sQp3MZKBD2p7m61pdt8Z07rJhfN2nXWSfTp15JyMv1W5QJjVtS23!-42672990?lang=en

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 accessing schemes such as Glastir.

**Points to note about Plans and Programme listed**

- Creating Sustainable Places – DE&T – revised/updated 2010
- 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.

**Additional comments:**

**Agriculture Sector Plan**.

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.

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.

**Ecological Footprint**

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.

**Consultation question 3. 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.**

As discussed above:

- WFD data/ River Basin Management Plans
- Fly-tipping data – fly capture (http://www.environment-agency.gov.uk/reserach/library/data/41333.aspx)
- The Welsh Index of Multiple Deprivation 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 asses how the plans will help address the issues causing deprivation.

**Consultation question 4. Is there any important information that has not been addressed in view of the SA/SEA scope?**

As discussed above:

It will be important to asses 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.

We also believe that data, information and a sustainability objective on Fly-tipping in Wales, are important information missing from the SA/SEA scope.

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.

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.

Please see below some examples of where we believe the sector plans could help address fly-tipping:

**Markets Sector Plan**

Probable key areas of sector plan of relevance:
- Waste Collection & Infrastructure
- Treating waste and using it as a resource

Factors that may help alleviate fly-tipping:
- Turning waste into a resource so that people don't need or want to fly-tip
- Encouraging builders to use recycled materials instead of raw materials – maybe a reward scheme?
- Education to ensure waste is segregated properly and managed

**Construction and Demolition Sector Plan**

Probable key areas of sector plan of relevance:
- Small scale construction and demolition waste collection (trade waste sites)
- Difficult wastes such as plasterboard and asbestos
- Small traders / Builders – Housing repairs

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

We recommend that In Table 3.1 key sustainability issues (Material Assets) or in 5.6.2 (Commercial & Industrial Sector Plan), 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).

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.

**Consultation question 5. Is the range of environmental problems, issues and receptors covered appropriate?**

- 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.

- We also believe Fly-Tipping, soil carbon and assessment of the management of VLLW and LLW and hazardous waste should also be included.

**Consultation question 6. Are there any major plans or projects that should be included in the assessment of cumulative effects?**

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.

**Consultation question 7. Are there any changes that should be made to the proposed SA/SEA objectives; including any consolidation of the objectives?**

See comments above in Q 1 and 5, and

With respect to Table 4.1:

- 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.
- Under Climate Change, we suggest inclusion of the word "efficiency" before "use" in the 3rd bullet about energy.

**Consultation question 8. Are there any other SA/SEA objectives, assessment criteria or indicators that should be included?**

See specific points raised above re fly-tipping and soils.

**Consultation question 9. Any further suggestions regarding the scope of the SA/SEA and its proposed assessment of the Sector Plans?**

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.

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.

Baseline data on ecosystem services in Wales are now being collated by the UK National Ecosystems Assessment and will be available on http://www.werh.org/nef.php.en

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, indentifying likely ecosystem services impacts of the policy or plan, followed by the scoping stage to show the existing ecosystem services status.

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.

Whilst relatively new, various tools are available to undertake ecosystem service assessments.

Please see information on NEF and Ecosystems Services baseline and briefing guide at http://www.werh.org/nef.php.en and the national UK Ecosystem assessment at http://uknea.unep-wcmc.org

**Further Information**

Further information or background to this response can be obtained from:

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**20 October 2010**

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

# *Minutes*

| | | |
|---|---|---|
| **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 Brinkerhoff |

| **Item** | | **Action and date required** |
|---|---|---|
| **1** | **INTRODUCTIONS & APOLOGIES** | |
| | DT led the call in introductions and apologies. | |
| **2** | **SUMMARY OF TZW WORK AND CURRENT STATUS** | |
| | JH provided a brief summary of the status of Towards Zero Waste and the current Sector Plans. | |
| **3** | **IDENTIFICATION OF CCW'S MAIN CONCERNS** | |
| | AB highlighted the main concerns raised by CCW. These comprise: | |
| | 1. Actions from previous consultation responses<br>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.<br>1.2. CCW were not clear on whether comments made on the recent MSP1 consultation were going to taken on board | |
| | 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 & 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 | *JH* |

| Item | | Action and date required |
|---|---|---|
| | consideration through the SA process.<br>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.<br>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. | *DT*<br><br>*AR* |
| | 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 & Gas work)<br>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. | *DT* |
| | 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.<br>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. | *DT*<br><br>*AR* |
| | 5. Habitats Regulations Assessment<br>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. | *CM & JH* |
| **4** | **RUN THROUGH OF CCW SCOPING RESPONSE (1 OCTOBER 2010)** | |
| | 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. | |
| | Page 1; paragraph 4: comment regarding inclusion of social & community | |

| Item | | Action and date required |
|---|---|---|
| | 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. | *DT* |
| | 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. | *JH & DT* |
| | 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 | *CM* |
| | 1.24 JH will send AB a copy of the TZW Post Adoption Statement | *JH* |
| | 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. | *JH* |
| | 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). | *JH & DT* |
| | 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. | *DT* |
| | Table 4.1:<br><br>It was agreed that the Soil sub objectives would be amended to make retention of natural soil functions more explicit as an objective.<br><br>It was agreed that the Water sub-objectives would be amended to cover protection of water quantity as well as quality.<br><br>It was agreed that the noise sub-objective would be expanded to take into account wildlife and landscape effects. | *DT* |

| 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* |

**DISTRIBUTION**

All participants and apologies; Aida Khalil, Peter Walsh.

Approved by: Date:

Issued by: Date:

## APPENDIX B – POLICIES, PLANS AND PROGRAMMES

**Appendix B: PPP Review**

**Table 1: List of PPP Reviewed in TZW SA**

| Policy/Plan/Programme Reviewed |
|---|
| **SUSTAINABLE DEVELOPMENT** |
| 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 - Consultation on a new Sustainable Development Scheme for Wales (November 2008) |
| 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) |
| **ECONOMY** |
| 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) |
| **POPULATION, HEALTH AND WELL-BEING** |
| EU Directive 2002/49/EC relating to the assessment and management of environmental noise - The Environmental Noise Directive (EU, 2002) |
| TAN 11 - Noise (1997) |

| Policy/Plan/Programme Reviewed |
| --- |
| 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) |
| **CLIMATIC FACTORS** |
| 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) |
| **MATERIAL ASSETS** |
| Waste Framework Directive 2006/12/EC (as amended by Directive 2008/98/EC) |
| EU Waste to Landfill Directive (99/31/EC) |
| 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) |
| Wise About Waste - the National Waste Strategy for Wales (2002) - To be replaced |

| Policy/Plan/Programme Reviewed |
| --- |
| by the WSS |
| 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 |
| **AIR QUALITY** |
| 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) |
| **BIODIVERSITY AND GEODIVERSITY** |
| Ramsar Convention of wetlands of international importance especially as waterfowl habitat (1971) |
| 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) |

| Policy/Plan/Programme Reviewed |
|---|
| 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) |
| **WATER AND FLOOD RISK** |
| 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) |
| **CULTURAL HERITAGE** |
| 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) |
| 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) |

| Policy/Plan/Programme Reviewed |
| --- |
| **LANDSCAPE AND SOIL RESOURCES** |
| 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 2: List of PPP Reviewed in MSP1 SA**

| Policy/Plan/Programme Reviewed |
|---|
| **International** |
| Johannesburg Renewable Energy Coalition (2002) |
| United Nations (2002) Millennium Declaration and Millennium Development Goals |
| Ramsar Convention (1971) The Ramsar List of Wetlands of International Importance |
| **Europe** |
| Council of Europe (2000) European Landscape Convention |
| Council of Europe (2003) European Soils Charter |
| European Union (1976) Dangerous Substances Directive 76/464/EEC |
| European Union (1979) Conservation of Wild Birds Directive 79/409/EEC |
| European Union (1979) Protection of Groundwater against Pollution Caused by Certain Dangerous Substances Directive 80/68/EEC |
| European Union (1991) Protection of Waters Against Pollution Caused by Nitrates From Agricultural Sources Directive 91/676/EEC |
| European Union (1991) Urban Waste Water Treatment Directive 91/271/EEC |
| European Union (1992) Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC |
| European Union (1999) Waste to Landfill Directive 99/31/EC |
| European Union (2000) End of Life Vehicles Directive 2000/53/EC |
| European Union (2000) Waste Incineration Directive 2000/76/EC |
| European Union (2001) Clean Air for Europe Programme |
| European Union (2001) National Emissions Ceilings Directive 2001/81/EC |
| European Union (2001) Large Combustion Plan Directive 2001/80/EC |
| European Union (2002) The Sixth Environment Action Programme of the European Community 2002-2012 |
| European Union (2002) Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC |
| European Union (2004) Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage Directive 2004/35/CE |
| European Union (2005) Biomass Action Plan 3 |
| European Union (2005) Second Climate Change Programme ECCPii |
| European Union (2006) Quality of Freshwaters Needing Protection or Improvement in Order to Support Fish Life Directive 2006/44/EC |
| European Union (2006) Quality Required of Shellfish Waters Directive 2006/113/EC |
| European Union (2006) Sustainable Development Strategy |
| European Union (2007) The Proposal for a Directive on industrial emissions Directive 96/61/EC |
| European Union (2008) The integrated Pollution Prevention and Control Directive 2008/1/EC |
| European Union (2008) Waste Framework Directive 2008/98/EC |
| **UK** |
| The Air Quality (Limit) Values Regulations 2003 |

| Policy/Plan/Programme Reviewed |
| --- |
| Clean Neighbourhoods and Environment Act 2005 |
| Department of Culture Media and Sport/Welsh Assembly Government (2007) Heritage Protection for the 21st Century |
| Department for Energy and Climate Change (2009) Consultation on the Draft Order to implement the Carbon Reduction Commitment |
| Department for Environment, Food and Rural Affairs (1994) UK Biodiversity Action Plan |
| Department for Environment, Food and Rural Affairs (1996) Shoreline Management Plan Guidance |
| Environmental Protection Act 1990 |
| Water Resources Act 1991 (as amended by the Water Act 2003) |
| **National** |
| British Waterways (2003) Waterways for Wales Consultation Draft |
| National Trust (2003) Valuing our Environment: Economic Impact of the Environment of Wales |
| Welsh Assembly Government (Document being revised/updated 2010) Creating Sustainable Places |
| Welsh Assembly Government (2005) Ministerial Planning Interim Planning Policy Statement – Planning for Renewable Energy |
| Welsh Assembly Government (2005) Social Enterprise Strategy for Wales – Reviewed and Refreshed in the Social Enterprise Action Plan 2009 |
| Welsh Assembly Government (2005) Environment Strategy for Wales |
| Welsh Assembly Government (2008) One Wales One Planet |
| Welsh Assembly Government (2008) People, Places, Futures: The Wales Spatial Plan 2008 Update |
| Welsh Assembly Government (2009) Capturing the Potential: A Green Jobs Strategy for Wales |
| Welsh Assembly Government (2009) Ministerial Planning Interim Planning Policy Statement – Sustainable Building Design |
| Welsh Assembly Government (2009) Ministerial Planning Interim Planning Policy Statement – Transport |
| Welsh Assembly Government (2009) One Wales One Planet, A New Sustainable Development Scheme for Wales |
| Welsh Assembly Government (2009) Technical Advice Note 5: Nature Conservation and Planning |
| Welsh Assembly Government (2009) Technical Advice Note 12: Design |
| Welsh Assembly Government (2009) Towards Zero Waste: A Consultation on New Waste Strategy for Wales |
| Welsh Assembly Government (2010) A Low Carbon revolution: The Welsh Assembly Government Energy Policy Statement |
| Welsh Assembly Government (2010) National Transport Plan |
| **Regional - Wales** |
| North Wales Regional Waste Group (2008) North Wales Regional Waste Plan 1st Review Recommended Draft |
| South East Wales Regional Waste Group (2004) South East Wales regional Waste Plan |

| Policy/Plan/Programme Reviewed |
|---|
| South West Wales Regional Waste Group (2008) South West Waste Plan, 1st review (Recommended Draft) |

**Table 3: List of PPP identified for FMSR Sector Plan (including in response to scoping consultation)**

| Policy/Plan/Programme Reviewed |
|---|
| **Europe** |
| EU (2003) CAP Single Payment scheme Cross Compliance Regulation (Annex III Council Reg No.73/2009) |
| EU (2008) Ambient Air and Cleaner Air for Europe Directive 2008/50/EC |
| EU (2006) Registration, Evaluation, Authorisation and Restriction of Chemicals. Regulation (EC) 1907/2006. |
| **UK** |
| Ancient Monuments and Archaeological Areas Act 1979 |
| Town and Country Planning Act 1990 |
| Planning (Listed Building and Conservation Areas) Act 1990 (as amended in 2009) |
| Planning (Hazardous Substances) Act 1990 |
| Department for Communities and Local (2010) PPS5 Planning for the Historic Environment: Historic Environment Planning Practice Guide |
| The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 |
| DEFRA/WAG (2010) Environmental Permitting (England and Wales) Regulations 2010 |
| **Wales** |
| Welsh Assembly Government (2009) The Welsh Historic Environment Strategic Statement Action Plan |
| 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 |
| WAGs Climate Change Strategy for Wales (Launched 7th Oct 2010) |
| WAG (2007-2013) Rural Development Plan Programme (2007-2013) |
| WAG (2009) Farming Food and Countryside: Building a Secure Future Strategy. |
| WAG (2010) Food for Wales, Food from Wales 2010-2020 (currently subject to consultation) |
| Planning Policy Wales (Edition 3, July 2010) |
| TAN 15 –Development and Flood Risk (2004) |
| TAN 6 Planning for Sustainable Rural Communities (includes sustainable agriculture and rural services) July 2010. |
| TAN 8 Renewable Energy (2005) |
| TAN 21 Waste (2001) |
| TAN 18 planning for transport infrastructure (2007) |
| Minerals Planning Policy Wales 2001 |
| Minerals Technical Advice Notes (MTAN) Wales 1 Aggregates (2000) |
| Minerals Technical Advice Notes (MTAN) Wales 2 Coal (2009) |
| Welsh River Basin Management Plans (2009) |
| WAG Economic Renewal Programme: A New Direction 2010 |
| Environment Agency Wales' Corporate Plan -Working Together for a Better Wales (2010-15) |
| Natural Environment Framework (currently out to consultation) |

| Policy/Plan/Programme Reviewed |
| --- |
| WAG, The Welsh Soils Action Plan (consultation closed but final document not yet published) |

**Table 4: Review of relevant policies, plans, programmes and environmental protection objectives for FMSR Sector Plan following October 2010 Scoping response**

| 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 |
|---|---|---|
| EU (2003) CAP Single Payment Scheme Cross Compliance Regulation (Annex III Council Reg No.73/2009) | New horizontal regulation dealing with the common provisions applicable to direct aid schemes for European farmers.<br>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'. | Link to soils management and agricultural waste sector plan |
| EC Directive 2008/50/EC on Ambient Air Quality and Cleaner Air, 2008 | This Directive includes the following key elements:<br>• 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*<br>• New air quality objectives for PM2.5 (fine particles) including the limit value and exposure related objectives – exposure concentration obligation and exposure reduction target<br>• The possibility to discount natural sources of pollution when assessing compliance against limit values<br>• 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.<br>* 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. | 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. |
| EU (2006) 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.<br>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 | The registration requirements may impact on the re-use of some waste streams |

| 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 |
|---|---|---|
| | substances are phased into REACH. | |
| Ancient Monuments and Archaeological Areas Act 1979 | The AMAAA was a law passed by the government to protect the archaeological heritage of Great Britain.<br>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".<br>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. | The waste sector plans should seek to protect and enhance the historic environment in Wales including designated historic assets while developing waste infrastructure |
| Town and Country Planning Act 1990 | The Town and Country Planning Act 1990 is an act of the British Parliament regulating the development of land in England and Wales.<br>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. | 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) | 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.<br>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. | 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 |

| 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 |
|---|---|---|
| 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 | PPS 5 sets out the Government's planning policies on the conservation of the historic environment.<br>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.<br>PPS5 is supported by a Practice Guide endorsed by Communities and Local 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 waste sector plans should seek to protect and enhance the historic environment in Wales while developing waste management initiatives and waste infrastructure. |
| The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 | The regulations are an opportunity to plan and deliver a better water environment, focussing on ecology.<br>They help to protect and enhance the quality of:<br>• surface freshwater (including lakes, streams and rivers)<br>• groundwaters<br>• groundwater dependant ecosystems<br>• estuaries<br>• coastal waters out to one mile from low-water. | 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/WAG (2010) Environmental Permitting (England and Wales) Regulations 2010 | 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.<br>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 | The waste sector plans must seek to promote initiatives and schemes that do not conflict with the objectives of the Regulations. |

| 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 |
|---|---|---|
| | Licensing.<br>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. | |
| Welsh Assembly Government (2009) The Welsh Historic Environment Strategic Statement Action Plan | This Plan outlines the action to be implemented during the life of the 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:<br>1. Conservation and protection of the historic environment<br>• A modern, clear accountable and simple system of heritage protection<br>• Identification, recording and designation of heritage assets<br>• Conservation of properties in State care<br>• Effective management and provision of access to historic environment records<br>• People with the skills and understanding to conserve and regenerate heritage assets.<br>2. Regeneration and sustainable development through heritage<br>• Capturing distinctiveness<br>• Tackle heritage at risk<br>• Ensure that the historic environment contributes to regeneration objectives and the Welsh tourism offer nationally and locally<br>• Sustainable Development<br>3. Public Access and Appreciation<br>• Making heritage sites enjoyable, relevant and stimulating to visit<br>• Understanding and tackling barriers to access<br>• Language and ‘sense of place’<br>• Public participation and volunteering<br>• Public access to information and online service provision | The waste sector plans should seek to protect and enhance the historic environment in Wales while developing waste infrastructure and waste management initiatives |

| 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 |
|---|---|---|
| | 4. Research and Scholarship<br>• Study of Welsh history<br>• Community engagement and participation<br>• Extending understanding of the Welsh historic environment | |
| 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 | The Guide is intended to assist local planning authorities to decide how much 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. | The waste sector plans should seek to protect and 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) | It restates the target of reducing greenhouse gas emissions from Wales by 3% per year from 2011 (excluding heavy industry and power generation)<br>There is a commitment to achieve 40% reduction in all greenhouse gas emissions by 2020 (against 1990 baseline)<br>It specifies targets for minimum emission reductions in each of six sectors: transport, residential, business, agriculture and land use, public sector, waste sector.<br>There is a maximum level for emissions from public sector buildings so government can “lead by example.”<br>And there is a national, co-ordinated approach to ensure that Wales is well placed to adapt to climate change. | The waste sector plans should take account of climate change and should support the Strategy. |
| WAG (2007-2013) Rural Development Plan Programme (2007-2013) | The Rural Development Plan (RDP) for Wales is part of a new European Union programme to promote the economic regeneration of rural areas.<br>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. | The waste sector plans should support the Plan. |
| WAG (2009) Farming Food and Countryside: Building a Secure Future Strategy. | ‘Farming, Food & 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. | 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 |
|---|---|---|
| | The objective of the Strategy is to achieve a sustainable and profitable future for farming families and businesses through the production and 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. | |
| WAG (2010) Food for Wales, Food from Wales 2010-2020 (currently subject to consultation) | 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.<br>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. | 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) | 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.<br>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.<br>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. | 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.<br>It advices on: | The waste sector plans should consider this guidance to promote sustainable flood risk management |

| 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 |
|---|---|---|
| | • Development advice maps;<br>• Nature of development or land use;<br>• Justifying the location of built development;<br>• Assessing flooding consequences;<br>• Surface water run-off from new development;<br>• Action through Development Plans;<br>• Development Control. | |
| TAN 6 Planning for Sustainable Rural Communities (includes sustainable agriculture and rural services) July 2010. | Technical Advice Note (TAN) 6 supports national planning policy on sustainable rural communities. This policy is set out in Planning Policy Wales.<br>This guidance provides advice on:<br>• sustainable rural communities;<br>• sustainable rural economies;<br>• rural affordable housing;<br>• rural enterprise dwellings;<br>• One Planet Developments;<br>• sustainable rural services; and<br>• sustainable agriculture. | The waste sector plans should consider this guidance to promote sustainable rural communities |
| TAN 8 Renewable Energy (2005) | This guidance provides advice on:<br>• Renewable Energy and Planning;<br>• Onshore Renewable Energy Technologies;<br>• Design and Energy;<br>• Implications for Development Plans;<br>• Development Control; and<br>• Monitoring. | The waste sector plans should consider this guidance when it comes to waste management initiatives |
| TAN 21 Waste (2001) | This guidance provides advice on:<br>• Planning framework in Wales<br>• Regional co-ordination in Wales<br>• Principles and techniques<br>• Planning considerations in waste issues<br>• Unitary development plans<br>• Development control<br>• Types of waste | 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) | It describes how to integrate land use and transport planning. Explains how transport impacts should be assessed and mitigated.<br>This guidance provides advice on:<br>• Integration between Land Use Planning and Transport;<br>• Location of Development;<br>• Parking;<br>• Design of Development;<br>• Walking and Cycling; | 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 |
|---|---|---|
| | • Public Transport;<br>• Planning for Transport Infrastructure;<br>• Assessing Impacts and Managing Implementation. | |
| Minerals Planning Policy Wales 2001 | 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.<br>Policy guidance for marine aggregates is not included in this minerals planning policy guidance. | 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) | It supplements Minerals Planning Policy Wales (2000) by topic based<br>This guidance provides advice on:<br>• providing mineral resources to meet society's needs<br>• current Aggregates production<br>• future demand<br>• future supply<br>• protecting areas of importance<br>• reducing the impact of aggregates production<br>• restoration and aftercare<br>• efficiency of use/recycling<br>• annexes on Regional Aggregates Working Parties (RAWPs), Reclamation to Agriculture, Soil, Planting and seeding | 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) | 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.<br>It should be read with Minerals Planning Policy Wales which sets out the general policies for all mineral development. | 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<br>The main aim is to achieve good chemical and ecological status in inland and coastal waters by 2015.<br>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. | The waste sector plans should support this plan to protect and enhance groundwater and river quality in the inland, coastal and maritime environments |

| 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 |
|---|---|---|
| | 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 | |
| WAG Economic Renewal Programme: A New Direction 2010 | 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.<br><br>This approach will create the right environment to encourage entrepreneurship allowing the private sector to flourish rather than directly deliver support to individual businesses.<br><br>The approach is organized by five priorities:<br><br>• Investing in high-quality and sustainable infrastructure<br>• Making Wales a more attractive place to do business<br>• Broadening and deepening the skills base<br>• Encouraging innovation<br>• Targeting the business support we offer | 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. |
| Environment Agency Wales' Corporate Plan - Working Together for a Better Wales (2010-15) | This Corporate Plan sets out what Environment Agency will achieve by 2015 – working in partnership with the Welsh Assembly Government, business and communities to make Welsh environment cleaner and healthier.<br>The main objectives of the plan are:<br>• Act to reduce climate change and its consequences<br>• Improve air, land and water<br>• Working with people and communities to create better places<br>• Working with business and other organisations to use resources wisely | The waste sector plans should support the objectives of this plan. |
| Natural Environment Framework (currently out to consultation) | 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.<br><br>The ecosystems approach to policy development and implementation to be embodied in the NEF was endorsed by | 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; |

| 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 |
|---|---|---|
| | 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. | |
| WAG, The Welsh Soils Action Plan (consultation closed but final document not yet published) | 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. | 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). |

## APPENDIX C – SUSTAINABILITY ASSESSMENT OF THE C&D SECTOR PLAN

## Construction & Demolition Sector Plan – Assessment of Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools

Actions Assessment Matrix

**SCORING KEY:**

| | |
|---|---|
| ✓✓ | Strong Positive Effect |
| ✓ | Positive Effect |
| × | Negative Effect |
| ×× | Strong negative Effect |
| ? | Unknown Effect |
| 0 | No relationship/neutral Effect |

**Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools**

- **Consideration of waste hierarchy guidance in respect of construction and demolition waste**
- **Encourage use of value engineering principles and tools for large construction projects**
- **Sustainability clauses for Government grants**
- **Education and guidance within the C&D Sector**

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Waste Management**<br>To increase sustainable waste management and reduce Wales' ecological footprint | • To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;<br>• To increase infrastructural capacity and facilities for sustainable waste management;<br>• To encourage behavioural change and participation amongst household, commercial and industrial operators;<br>• To contribute to the reduction/ minimisation | ✓✓ | These actions seek to encourage an increase in awareness about waste prevention within the C&D sector 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. 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 C&D companies and therefore reducing disposal rate and the level of waste requiring management.<br>Reduced demand for raw materials and increased reuse as a |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | of Wales' Ecological Footprint and progress self-sufficiency in waste management. | | result of this action consequently will generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas emissions associated with transportation and reprocessing of waste. |
| **Waste Infrastructure**<br>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this | • To promote markets for recyclates and recycled goods;<br>• To encourage the development and deployment of alternative waste technologies and R&D;<br>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;<br>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;<br>• To support existing and develop new social enterprises focusing on waste as a community resource;<br>• To promote equality and opportunity to access waste management facilities to | ✓✓ | The actions may reduce demand for marketable recyclates and recycled materials as a result of promoting minimization and reuse of materials and waste. However the effect is not expected to be significant as some materials targeted for reuse (i.e. wood) will not be recyclable.<br><br>These actions also promote the use of most appropriate waste minimisation and management techniques available encouraging an improvement of companies' waste management strategy and a potential development of green technologies.<br><br>As C&D companies are encouraged to reuse materials and prevent waste, there may be a requirement to manage less 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; however, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused (draft C&D Sector Plan, |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | prevent instances of fly-typing;<br>• To provide cost-effective and reliable sustainable waste management. | | 2011) and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions. 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 during construction.<br><br>Waste materials represent a cost to contractors. 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 provide a reduction in cost for the contractors and promote a more cost-effective sustainable waste management.<br><br>Sustainability clauses for Government grants action will also contribute to the capacity of the C&D companies to achieve TZW waste reduction and recycling targets in relation to construction and demolition projects. |
| **Landscape, biodiversity and cultural heritage**<br>To protect and enhance urban and rural landscapes and resources, including | • To protect designated landscapes: environmental, cultural and historic;<br>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and | ✓ | Encouraging waste prevention measures into C&D companies' waste management strategy will reduce the environmental effect of C&D processes, for example, by saving raw materials, landfield space and energy used. This will have long-term beneficial effects for the natural and |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| ecological services and functions | connectivity;<br>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;<br>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;<br>• To promote the use of brownfield land use;<br>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;<br>• To remediate contaminated land. | | historic environment.<br>Improving natural resource use and reuse will prevent loss of habitats and avoid effects on erosion and terrestrial and marine life (i.e. marine aggregate extraction). 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.<br>There may be also indirect positive effects in terms of reduced levels of fly-tipping during construction and demolition if encouragement of reuse is also raised. In addition, reducing the volume of waste to landfill should also avoid adverse effects in relation to contamination of flora, fauna and habitats. |
| **Soil**<br>To protect and enhance soil resources | • To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation.<br>• To protect against contamination to soil;<br>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils. | ✓ | These actions should have a long term beneficial effect for the soil environment. On the one hand, encouraging prevention and minimisation of waste will reduce the volume of waste going to landfill, which in turn will minimise the capacity demand for landtake. On the other hand, increased reuse and recycling should offset land take associated with mineral extractions.<br>In addition, reducing the volume of waste going to landfill will avoid generation of landfill gas and leachate and minimise, therefore, the risk of soil contamination and thereby helping |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | | | to maintain natural soil functioning and associated ecosystem services. However, it is not expected that this risk would be significant since the majority of the landfill waste from the construction and demolition sector consists on inert materials. In fact, over 75% of the waste going to landfill is clean excavated material, concrete, bricks and timber.<br><br>There could be a risk of soil pollution on site if stockpiles of materials (i.e. aggregates) are not managed adequately. A potential mitigation measure could include the consideration of EA and WRAP best practice/guidance to handle stockpiles of materials. |
| **Water**<br>To protect and promote the sustainable use of water resources | • To promote sustainable flood risk management;<br>• To protect and enhance water quality and quantity in inland, coastal and maritime environments. | ✓ | Similarly, these actions should have a long-term beneficial effect for the water environment.<br><br>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 for example due to surface water runoff and leeching.<br><br>In the short-term, an improvement of companies' waste management strategy at construction site will protect the use of direct water in terms of quality and quantity. |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | | | There could be a risk of water pollution on site if stockpiles of materials to be reused (i.e aggregates) are not managed adequately. A potential mitigation measure could include the consideration of EA and WRAP best practice/guidance to handle stockpiles of materials.<br><br>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. |
| **Air quality, noise and odour**<br>To protect and enhance air quality in local, regional and national context | • To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;<br>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;<br>• To minimise adverse impacts to noise levels within communities, to ;<br>• To minimise odours arising from waste processing and its impact upon local communities. | ✓ | The actions could generate also 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.<br><br>Similarly, these actions may have an overall positive effect on noise levels within communities given an overall reduction in noise related to transport and waste treatment.<br><br>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 |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | | | landfill. |
| **Climate change**<br>To assist with Wales' capacity to adapt to and mitigate against climatic change | • To reduce GHG emissions;<br>• To contribute to national, regional and local level carbon abatement strategy/objectives;<br>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;<br>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects. | ✓ | Encouraging the use of waste management guidance, standards and tools to assist 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.<br>There are also likely to be some positive contributions to carbon abatement strategies/objectives by improving the efficiency of the C&D processes. It is assumed also the use of these guidance, standards and tools in conjunction with other mechanisms will promote and encourage the use of technologies that tackle CO2 emissions (for example, technologies which support fuel switching to lower carbon alternatives such as co-firing of fossil fuel with biomass and/or waste). |
| **Health**<br>To protect and enhance the health and well-being of communities | • To provide safe, secure, mechanisms for civic engagement;<br>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;<br>• To provide opportunities for those with health issues to gain suitable and meaningful employment; | ✓ | The reduction of residual waste requiring treatment as a result of these actions should help to provide a safe and healthy working environment at C&D site. This is with regard to the waste management aspects of processing of material and decommissioning. For example, there will be a reduction in air and noise pollution, odours and hazardous materials associated with the management of waste.<br>Avoiding problematic or hazardous waste at C&D site is also |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | • To provide safe and healthy working environments for employees within the waste and recycling industries | | likely to prevent exposure of members of the public to hazards as a result of the nature of the material. |
| **Civic engagement**<br>To increase civic engagement in sustainable waste practice | • To raise awareness and understanding of sustainable waste strategy, objectives and management<br>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor.<br>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement<br>• To support and provide opportunities for volunteering in the waste and recycling industries;<br>• To ensure all promotional literature is published in Welsh as well as English where appropriate;<br>• To provide community facilities including visitor and educational centres. | 0 | The actions are likely to have very limited effect in terms of increasing broad civic engagement in waste practice as they focus mainly on constructors and suppliers within the C&D sector. |
| **Summary**<br>The actions are considered to have a strong positive effect in relation to waste management objective. This is primarily due to an encouragement of waste | | | |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| prevention for C&D companies through the provision of supporting guidance, standards and existing tools. This is a fundamental step in assisting the sector to meet the waste prevention targets and increase sustainable waste management. 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 C&D companies 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; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas emissions associated with transportation and reprocessing of waste.<br><br>The actions are also likely to have a strong positive effect on the waste infrastructure objective by supporting most of the SA sub-objectives. They promote the use of most appropriate waste minimisation and management techniques available with a view to promoting an improvement of companies' waste management strategy and a potential development of green technologies. Although the actions may indirectly lead to a reduction in supply of marketable recyclates and recycled materials due to promotion and increase of minimisation and reuse of materials and waste, the effect should not be significant as some materials targeted for reuse (i.e. wood) will not be recyclable.<br><br>As C&D companies are encouraged to reuse materials and prevent waste, there may be a requirement to manage less residual waste which in turn may result in a reduction in the number of jobs within the sector, should staff affected not be redeployed. It is not expected that any such effect would be significant since 67% of C&D waste produced is currently being reused (Welsh Government, draft C&D Sector Plan, 2011) and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.<br><br>Waste materials represent a cost to contractors. 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 provide a reduction in cost for the contractors and promote a more cost-effective sustainable waste management.<br><br>The inclusion of sustainability clauses for Government grants will also contribute to the capacity of the C&D companies to achieve TZW waste reduction and recycling targets in relation to construction and demolition projects (e.g. Demolition Protocol, BREEAM, etc).<br><br>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 C&D companies' waste management strategy. | | | |

| Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools<br><br>• Consideration of waste hierarchy guidance in respect of construction and demolition waste<br>• Encourage use of value engineering principles and tools for large construction projects<br>• Sustainability clauses for Government grants<br>• Education and guidance within the C&D Sector | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| It is anticipated the effects of the actions will be in the short and longer terms and will offer long term benefits.<br>The following mitigation and enhancement measures could be considered by Welsh Government when developing the final version of the plan:<br>• Consideration of waste issues through EIA of qualifying C&D interventions/schemes.<br>• Include a commitment to include training and upskilling in the use of new tools, protocols, guidance etc 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 during construction.<br>• Promoting the sustainable and safe/healthy location of new facilities. This includes avoiding areas at flood risk.<br>• Consideration of landscape, biodiversity and cultural heritage issues through EIA of qualifying C&D interventions/schemes to protect and enhance urban and rural landscapes and resources.<br>• Consideration of soil and water issues through EIA of qualifying C&D interventions/schemes to protect and enhance soil and water resources.<br>• Encourage the use of EA and WRAP best practice/guidance in handling stockpiles of materials such as aggregates to reduce the risk of soil and water pollution on site if stockpiles of materials (i.e. aggregates) are not managed adequately.<br>• Consideration of air quality (including GHG), noise and odour issues through EIA of qualifying C&D interventions/schemes.<br>• Reducing the need to transport reuse items and waste to prepare to be reused.<br>• Ensure that qualifying C&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.<br>• Establishment of health and safety standards for qualifying C&D interventions/schemes where appropriate. E.g. reduce the requirement for manual handling operations. | | | |

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 |
|---|---|---|---|---|---|---|---|---|---|
| **Actions for Waste Prevention (Including Reuse): Education, Guidance and Tools** | | | | | | | | | |
| Education, Guidance and Tools | ✓✓ | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

# Construction & Demolition Sector Plan – Assessment of Actions for Waste Prevention (Including Reuse): Designing out Waste

Actions Assessment Matrix

**SCORING KEY:**

| | |
|---|---|
| ✓✓ | Strong Positive Effect |
| ✓ | Positive Effect |
| × | Negative Effect |
| ×× | Strong negative Effect |
| ? | Unknown Effect |
| 0 | No relationship/neutral Effect |

## Actions for Waste Prevention (Including Reuse): Designing out Waste

The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Waste Management**<br>To increase sustainable waste management and reduce Wales' ecological footprint | • To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;<br>• To increase infrastructural capacity and facilities for sustainable waste management;<br>• To encourage behavioural change and participation amongst household, commercial and industrial operators;<br>• To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management. | ✓✓ | The action aims to encourage waste prevention through the improvement of materials resource efficiency in construction projects by optimising material use and reducing waste, as design decisions directly influence what gets constructed, and how. The potential measures covered under this action are diverse (i.e. policies, guidance and education, infrastructure and market, public procurement clauses, etc) promoting as a whole a more sustainable waste management.<br><br>The action is also expected to increase awareness and share best practice amongst client organisations, designers and architects; by discouraging the use of raw materials and materials with legacy waste, it will generate behavioural change toward prevention and reuse and therefore reducing disposal rate and the level of waste requiring management.<br><br>Reduced demand for raw materials and increased reuse as a result of the action consequently will generate a number of benefits with respect to the minimisation of Wales' Ecological |

## Actions for Waste Prevention (Including Reuse): Designing out Waste

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| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | | | Footprint; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas (GHG) emissions associated with transportation and reprocessing of waste. |
| **Waste Infrastructure**<br>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this | • To promote markets for recyclates and recycled goods;<br>• To encourage the development and deployment of alternative waste technologies and R&D;<br>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;<br>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;<br>• To support existing and develop new social enterprises focusing on waste as a community resource;<br>• To promote equality and opportunity to access waste management facilities to prevent instances of fly-typing;<br>• To provide cost-effective and reliable sustainable waste management. | ✓✓ | This action may reduce demand for marketable recyclates and recycled materials (for example, masonry and bricks, recycling of metals, etc) as a result of promoting minimization and reuse of materials and waste. However some materials whilst targeted for reuse (i.e. wood) will not be recyclable.<br><br>The action also encourages sustainable design of waste infrastructure and promotes the development of the green technologies sector and sustainable procurement (i.e. design out waste guidance, contractual requirements, mechanism to assist in waste reduction, such as BREEAM, etc).<br><br>As construction companies are encouraged to prevent and reuse materials and waste through this action, there may be a requirement to manage less 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 local employment opportunities. However, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused (draft C&D Waste Sector Plan, 2011) and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions. Some Potential mitigation measures could include training and upskilling in the use of new tools and staff to be redeployed; employment opportunities could potentially be supported by the action in the longer term, particularly during the design stage.<br><br>It may have a positive effect in reducing the number of fly- |

## Actions for Waste Prevention (Including Reuse): Designing out Waste

The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | | | tipping events by indirectly putting a value of waste materials.<br><br>Implementing this action can provide significant reduction in cost by preventing waste generation and wasting less material during the design stage. Reducing the volume of disposal waste may generate cost savings also related to the management of such waste which presents less national risk to Landfill Tax. This would have a positive effect on the objective. |
| **Landscape, biodiversity and cultural heritage**<br>To protect and enhance urban and rural landscapes and resources, including ecological services and functions | • To protect designated landscapes: environmental, cultural and historic;<br>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;<br>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;<br>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;<br>• To promote the use of brownfield land use;<br>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;<br>• To remediate contaminated land. | ✓ | Increasing awareness about 'designing out waste' could have a long-term beneficial effect for the natural and historic environment. Improving the materials resource efficiency within the C&D sector will help to optimise materials use and reduce waste. This in turn will reduce the extraction of raw materials preventing loss of habitats and avoiding effects on erosion and terrestrial and marine life (i.e. marine aggregate extraction). In addition, reducing the volume to landfill/residual treatment will reduce the need for new landfill developments, encouraging therefore the protection of landscape, historical resource and biodiversity, and it should also avoid adverse effects in relation to contamination of flora, fauna and habitats. |

## Actions for Waste Prevention (Including Reuse): Designing out Waste

The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Soil**<br>To protect and enhance soil resources | • To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation.<br>• To protect against contamination to soil;<br>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils. | ✓ | As above, the action should have a long term beneficial effect for the soil environment. Encouraging prevention and reuse of waste and materials through design out waste measures will reduce the volume of waste going to landfill, which in turn will minimise the capacity demand for land take. On the other hand, increased reuse and recycling should offset land take associated with mineral extractions.<br>In addition, reducing the volume of waste going to landfill will avoid generation of landfill gas and leachate and minimise, therefore, the risk of soil contamination and thereby helping to maintain natural soil functioning and associated ecosystem services. However, it is not expected that this risk would be significant since the majority of the landfill waste from the construction and demolition sector consists on inert materials. |
| **Water**<br>To protect and promote the sustainable use of water resources | • To promote sustainable flood risk management;<br>• To protect and enhance water quality and quantity in inland, coastal and maritime environments. | ✓ | Similarly, the action should have a long-term beneficial effect for the water environment. Optimising materials use through the design will reduce the level of raw material extraction, avoiding effects on water tables and on coastal erosion and maritime environments (i.e. marine aggregates).<br>By encouraging the prevention and reuse of waste and materials through design, the action will help reduce the volume of waste going to landfill, avoiding therefore the risk of pollution to groundwater, rivers and coastal environments for example due to surface water runoff and leeching.<br>No clear link between the action and flood risk management has been identified, although it is assumed that some policies, guidance and contractual clauses will take into account future flood risk. |

## Actions for Waste Prevention (Including Reuse): Designing out Waste

The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Air quality, noise and odour**<br>To protect and enhance air quality in local, regional and national context | • To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;<br>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;<br>• To minimise adverse impacts to noise levels within communities, to ;<br>• To minimise odours arising from waste processing and its impact upon local communities. | ✓ | The action 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, in use of transport (for example to re-processors of raw materials and to place of use) and in reprocessing processes.<br>Similarly, the action may have an overall positive effect on noise levels within communities given an overall reduction in noise related to transport and material and waste treatment.<br>It is assumed that, as a result of a reduction at design stage of residual waste requiring treatment, there will be a reduction in odours arising from waste processing and landfill. |
| **Climate change**<br>To assist with Wales' capacity to adapt to and mitigate against climatic change | • To reduce GHG emissions;<br>• To contribute to national, regional and local level carbon abatement strategy/objectives;<br>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;<br>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects. | ✓ | Improving materials resource efficiency at design stage in construction projects promotes minimization and reuse of materials and waste; this could encourage a reduction of GHG emissions associated for example with transportation (to re-processors of raw materials, 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.<br>There is also likely to be some positive contributions to carbon abatement strategies/objectives, since improving materials resource efficiency at design stage can provide reductions in carbon. The effects can be more significant if the guidance documents, design out waste products, contract requirements, etc promote and encourage the use of technologies that tackle CO2 emissions (i.e. improving the efficiency of existing/developing technologies or technologies which support fuel switching to lower carbon alternatives such as co-firing of |

## Actions for Waste Prevention (Including Reuse): Designing out Waste

The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | | | fossil fuel with biomass and/or waste). |
| **Health**<br>To protect and enhance the health and well-being of communities | • To provide safe, secure, mechanisms for civic engagement;<br>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;<br>• To provide opportunities for those with health issues to gain suitable and meaningful employment;<br>• To provide safe and healthy working environments for employees within the waste and recycling industries | ✓ | The reduction of residual waste requiring treatment as a result of implementing this action should help to provide a safe and healthy working environment with regard to the waste management aspects of processing of material and decommissioning due to a reduction in air and noise pollution, odours and hazardous materials associated with the management of waste.<br>Specifications relating to the types of materials used in construction include limiting the number of hazardous materials and legacy wastes in future; this will avoid problematic or hazardous waste at C&D site and in turn will prevent exposure of member of the public to hazards. |
| **Civic engagement**<br>To increase civic engagement in sustainable waste practice | • To raise awareness and understanding of sustainable waste strategy, objectives and management<br>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor.<br>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement<br>• To support and provide opportunities for volunteering in the waste and recycling industries;<br>• To ensure all promotional literature is published in Welsh as well as English | 0 | The action is likely to have very limited effect in terms of increasing broad civic engagement in waste practice as they focus on design out waste measures for client organisations, designers and architects. |

## Actions for Waste Prevention (Including Reuse): Designing out Waste

The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | where appropriate;<br>• To provide community facilities including visitor and educational centres. | | |

**Summary**

The action is anticipated to have a strong positive effect in supporting both Waste Management and Waste Infrastructure objectives. This is primarily due to an encouragement of waste prevention through the improvement of materials resource efficiency in construction projects by optimising material use and reducing waste, as design decisions directly influence what gets constructed, and how. The potential measures covered under this action are diverse (i.e. policies, guidance and education, infrastructure and market, public procurement clauses, etc) promoting as a whole a more sustainable waste management.

The action is also expected to increase awareness and share best practice amongst client organisations, designers and architects; by discouraging the use of raw materials and materials with legacy waste, it is intended to generate behavioural change toward prevention and reuse and therefore reducing disposal rate and the level of waste requiring management.

Reduced demand for raw materials and increased reuse as a result of the action consequently will generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas (GHG) emissions associated with transportation and reprocessing of waste.

This action may also indirectly reduce demand for marketable recyclates and recycled materials (for example, masonry and bricks, recycling of metals, etc) as a result of promoting minimization and reuse of materials and waste. However some materials whilst targeted for reuse (i.e. wood) will not be recyclable.

The action encourages sustainable design of waste infrastructure and promotes the development of the green technologies sector and sustainable procurement (i.e. design out waste guidance, contractual requirements, mechanism to assist in waste reduction, such as BREEAM, etc).

As construction companies are encouraged to prevent and reuse materials and waste through this action, there is likely to be a reduction in the demand to manage 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 local employment opportunities. It is not expected that any such effect would be significant since 67% of C&D waste produced is currently being reused (Welsh Government, draft C&D Sector Plan, 2011) and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.

It may have a positive effect in reducing the number of fly-tipping events by indirectly putting a value of waste materials.

Implementing this action can also provide significant reduction in cost by preventing waste generation and wasting less material during the design stage. Reducing the volume of disposal waste may generate cost savings also related to the management of such waste. This would have a positive effect on the objective.

| Actions for Waste Prevention (Including Reuse): Designing out Waste | | | |
|---|---|---|---|
| The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective. | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| The action is also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, soil, water, air quality/noise/odour, climate change and health due to the potential for the action to prevent waste, optimise materials use and reduce reliance on landfill/residual treatment by encouraging 'designing out waste' measures.<br>It is anticipated the effects of the action will be in the medium/long term and will offer long term benefits.<br>The following mitigation and enhancement measures could be considered by Welsh Government when developing the final version of the plan:<br>• Include a commitment to include training and upskilling in the use of new tools, protocols, guidance etc 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 during construction. | | | |

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 |
|---|---|---|---|---|---|---|---|---|---|
| **Actions for Waste Prevention (Including Reuse): Designing Out Waste** | | | | | | | | | |
| | ✓✓ | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

## Construction & Demolition Sector Plan – Assessment of Actions for Waste Prevention (Including Reuse): Reuse Surplus Materials

Actions Assessment Matrix

**SCORING KEY:**

| | |
|---|---|
| ✓✓ | Strong Positive Effect |
| ✓ | Positive Effect |
| × | Negative Effect |
| ×× | Strong negative Effect |
| ? | Unknown Effect |
| 0 | No relationship/neutral Effect |

### Actions for Waste Prevention (Including Reuse): Reuse Surplus Materials

- **Welsh Government directed support for SME's to reuse surplus materials.**
  The Welsh Government through Constructing Excellence in Wales has funded the development of an internet platform to enable the construction industry, in particular SME's, to make their surplus materials suitable for re-use visible to potential users. Through Constructing Excellence in Wales, the Welsh Government will continue to provide, develop and raise awareness of this mechanism to facilitate the construction industry, and in particular SME's, to reuse its surplus materials.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Waste Management**<br>To increase sustainable waste management and reduce Wales' ecological footprint | • To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;<br>• To increase infrastructural capacity and facilities for sustainable waste management;<br>• To encourage behavioural change and participation amongst household, commercial and industrial operators; | ✓ | The action seeks to encourage waste prevention through encouraging the reuse of surplus materials arising from C&D processes and activities.<br>Through the development of an internet platform for the construction industry to make their surplus materials for reuse available, an increase of awareness of the industry should be expected. And in turn, it should generate behavioural change toward reuse and therefore reducing disposal waste and the level of waste requiring management. |

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| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | • To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management. | | Encouragement of materials' reuse as a result of the action will also generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing greenhouse gas (GHG) emissions associated with transportation and reprocessing of waste. |
| **Waste Infrastructure**<br>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this | • To promote markets for recyclates and recycled goods;<br>• To encourage the development and deployment of alternative waste technologies and R&D;<br>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;<br>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;<br>• To promote equality and opportunity to access waste management facilities to prevent instances of fly-typing;<br>• To support existing and develop new social enterprises focusing on waste as a | ✓ | This action may create market opportunities for unused and undamaged materials such as aggregates and wood.<br>As the construction industry, in particular SME's, are encouraged to reuse, there may be a requirement to manage less residual waste which in turn it 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 local employment opportunities. Potential mitigation measures could include training and upskilling in the use of new tools and staff to be redeployed; however, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused (draft C&D Sector Plan, 2011) and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.<br>The action is also likely to generate cost savings. Waste materials, regardless of whether they are recycled or sent to landfill, represents a cost to contractors. In addition to waste disposal and transport costs, there are further hidden costs such |

| Actions for Waste Prevention (Including Reuse): Reuse Surplus Materials | | | |
|---|---|---|---|
| • **Welsh Government directed support for SME's to reuse surplus materials.** The Welsh Government through Constructing Excellence in Wales has funded the development of an internet platform to enable the construction industry, in particular SME's, to make their surplus materials suitable for re-use visible to potential users. Through Constructing Excellence in Wales, the Welsh Government will continue to provide, develop and raise awareness of this mechanism to facilitate the construction industry, and in particular SME's, to reuse its surplus materials. | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | community resource;<br>• To provide cost-effective and reliable sustainable waste management. | | as the value of lost raw materials and the value-added cost from labour and energy. Preventing waste through reusing materials can therefore provide a reduction in cost and promote a more cost-effective sustainable waste management. |
| **Landscape, biodiversity and cultural heritage**<br>To protect and enhance urban and rural landscapes and resources, including ecological services and functions | • To protect designated landscapes: environmental, cultural and historic;<br>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;<br>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;<br>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;<br>• To promote the use of brownfield land use;<br>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;<br>• To remediate contaminated land. | ✓ | This action could have a long-term beneficial effect for the natural and historic environment; reusing materials from C&D processes and activities will reduce the volume to landfill/residual treatment, diminishing so the need for new developments, encouraging therefore the protection of landscape, historical resources and biodiversity. There may be also indirect positive effects in terms of reduced levels of fly-tipping. In addition, reducing the volume of waste to landfill should also avoid adverse effects in relation to contamination of flora, fauna and habitats. |

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| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Soil**<br>To protect and enhance soil resources | • To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation.<br>• To protect against contamination to soil;<br>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils. | ✓ | As above, this action should have a long term beneficial effect for the soil environment. On the one hand, encouraging prevention and minimisation of waste will reduce the volume of waste going to landfill, which in turn will minimise the capacity demand for landtake. On the other hand, increased reuse and recycling should offset land take associated with mineral extractions.<br>In addition, reducing the volume of waste going to landfill will avoid generation of landfill gas and leachate and minimise, therefore, the risk of soil contamination and thereby helping to maintain natural soil functioning and associated ecosystem services. However, it is not expected that this risk would be significant since the majority of the landfill waste from the construction and demolition sector consists on inert materials. In fact, over 75% of the waste going to landfill is clean excavated material, concrete, bricks and timber. |
| **Water**<br>To protect and promote the sustainable use of water resources | • To promote sustainable flood risk management;<br>• To protect and enhance water quality and quantity in inland, coastal and maritime environments. | ✓ | Similarly, this action should have a long-term beneficial effect for the water environment.<br>By encouraging the reuse of surplus materials, the action will help reduce the volume of waste going to landfill, avoiding therefore the risk of pollution to groundwater, rivers and coastal environments for example due to surface water runoff and leeching.<br>No clear link between this action and flood risk management has |

| Actions for Waste Prevention (Including Reuse): Reuse Surplus Materials | | | |
|---|---|---|---|
| • **Welsh Government directed support for SME's to reuse surplus materials.** The Welsh Government through Constructing Excellence in Wales has funded the development of an internet platform to enable the construction industry, in particular SME's, to make their surplus materials suitable for re-use visible to potential users. Through Constructing Excellence in Wales, the Welsh Government will continue to provide, develop and raise awareness of this mechanism to facilitate the construction industry, and in particular SME's, to reuse its surplus materials. | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | | | been identified. |
| **Air quality, noise and odour**<br>To protect and enhance air quality in local, regional and national context | • To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;<br>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;<br>• To minimise adverse impacts to noise levels within communities, to ;<br>• To minimise odours arising from waste processing and its impact upon local communities. | ✓ | The reuse of surplus material could also 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, in use of transport (for example to re-processors of raw materials and to place of use) and in reprocessing processes.<br>Similarly, it may have an overall positive effect on noise levels within communities given an overall reduction in noise related to waste treatment.<br>It is assumed that, as a result of a reduction in residual waste requiring treatment due to a materials' reuse, there will be a reduction in odours arising from waste processing and landfill. |
| **Climate change**<br>To assist with Wales' capacity to adapt to and mitigate against climatic change | • To reduce GHG emissions;<br>• To contribute to national, regional and local level carbon abatement strategy/objectives;<br>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;<br>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects. | ✓ | Increased reuse of surplus material and therefore minimising residual waste as a result of this Action could encourage a reduction of GHG emissions associated for example with transportation to landfill and reprocessing activities for waste. This in turn will contribute to mitigate the effects of Climate Change. |

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| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Health**<br>To protect and enhance the health and well-being of communities | • To provide safe, secure, mechanisms for civic engagement;<br>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;<br>• To provide opportunities for those with health issues to gain suitable and meaningful employment;<br>• To provide safe and healthy working environments for employees within the waste and recycling industries | ✓ | The reduction of residual waste requiring treatment as a result of this action should help to provide a safe and healthy working environment. This is with regard to the waste management aspects of processing of material and decommissioning. For example, there will be a reduction in air and noise pollution, odours and hazardous materials associated with the management of waste. |
| **Civic engagement**<br>To increase civic engagement in sustainable waste practice | • To raise awareness and understanding of sustainable waste strategy, objectives and management<br>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor.<br>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement<br>• To support and provide opportunities for | 0 | The action is likely to have very limited effect in terms of increasing broad civic engagement in waste practice as they focus on mechanisms for the construction industry. |

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| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | volunteering in the waste and recycling industries;<br>• To ensure all promotional literature is published in Welsh as well as English where appropriate;<br>• To provide community facilities including visitor and educational centres. | | |

**Summary**

The action is predicted to have a positive effect in relation to Waste Management and Waste Infrastructure objectives. This is primarily due to a promotion of reuse of surplus materials arising from C&D processes and activities. Through the development of an internet platform for the construction industry to make their surplus materials for reuse available, an increase of awareness of the industry should also be expected. And in turn, it should generate behavioural change toward reuse and therefore reducing disposal waste and the level of waste requiring management.

Encouragement of materials' reuse as a result of the action will also generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing greenhouse gas (GHG) emissions associated with transportation and reprocessing of waste and a reduction in demand for raw materials.

This action may create market opportunities for unused and undamaged materials such as aggregates and wood.

As the construction industry, in particular SME's, are encouraged to reuse, there may be a requirement to manage less residual waste which in turn it 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 local employment opportunities. However, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused (draft C&D Sector Plan, 2011) and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.

The action is also likely to generate cost savings. Waste materials, regardless of whether they are recycled or sent to landfill, represents a cost to contractors. 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. Preventing

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- **Welsh Government directed support for SME's to reuse surplus materials.**
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| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|

waste through reusing materials can therefore provide a reduction in cost and promote a more cost-effective sustainable waste management.

The action is also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, soil/landtake and mineral extraction, water, air quality/noise/odour, climate change and health due to the potential for the action to optimise materials use and reduce reliance on landfill/residual treatment.

It is anticipated the bulk of the effects of the action will be in the medium term but will also offer long term benefits.

The following mitigation and enhancement measures could be considered by Welsh Government when developing the final version of the plan:

- Include a commitment to include training and upskilling in the use of new tools, protocols, guidance etc 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 during construction.
- Encourage the use of EA and WRAP best practice/guidance in handling stockpiles of materials such as aggregates to reduce the risk of soil and water pollution on site if stockpiles of materials (i.e. aggregates) are not managed adequately.
- Consideration of air quality (including GHG), noise and odour issues through EIA of qualifying C&D interventions/schemes.
- Reducing the need to transport reuse items and waste to prepare to be reused.
- Ensure that qualifying C&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.

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 |
|---|---|---|---|---|---|---|---|---|---|
| **Actions for Waste Prevention (Including Reuse): Reuse Surplus Materials** | | | | | | | | | |
| Reuse Surplus Materials | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

## Construction & Demolition Sector Plan – Waste Recycling: Education, Guidance, Tools and Market

Actions Assessment Matrix

**SCORING KEY:**

| | |
|---|---|
| ✓✓ | Strong Positive Effect |
| ✓ | Positive Effect |
| × | Negative Effect |
| ×× | Strong negative Effect |
| ? | Unknown Effect |
| 0 | No relationship/neutral Effect |

**Actions for Waste Recycling: Education, Guidance, Tools and Market**

- Encouraging use of alternative substitutes for aggregates
- Waste Protocols Project
- Working with product manufacturers to increase recyclability of products
- Working with product manufacturers to increase recycled content
- Reporting on recycling performance by expanding network of Green Compass accredited sites
- Increasing the role of design for recycling (Design for Deconstruction)
- Ecodesign of products
- Increasing awareness and behaviour change towards recycling
- Support for construction and demolition businesses
- Increase awareness about using recycled and reused products
- Green guide to building materials specification

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Waste Management**<br>To increase sustainable waste management and reduce Wales' ecological footprint | • To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;<br>• To increase infrastructural capacity and facilities for sustainable waste management;<br>• To encourage behavioural change and | ✓✓ | These actions are expected to encourage recycling of C&D waste through promoting i) development of substitute and recyclable products and ii) use of campaign, guidance, standards, tools and mechanisms for recycling. Recycling involves recovery operations by which waste materials are reprocessed into products whether for the original or other purposes. |

| Actions for Waste Recycling: Education, Guidance, Tools and Market | | | |
|---|---|---|---|
| • Encouraging use of alternative substitutes for aggregates<br>• Waste Protocols Project<br>• Working with product manufacturers to increase recyclability of products<br>• Working with product manufacturers to increase recycled content<br>• Reporting on recycling performance by expanding network of Green Compass accredited sites<br>• Increasing the role of design for recycling (Design for Deconstruction)<br>• Ecodesign of products<br>• Increasing awareness and behaviour change towards recycling<br>• Support for construction and demolition businesses<br>• Increase awareness about using recycled and reused products<br>• Green guide to building materials specification | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | participation amongst household, commercial and industrial operators;<br>• To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management. | | For maximum effectiveness, the actions should be implemented in combination; in isolation they will not have the same level of positive effect predicted in terms of supporting a more sustainable waste management within the C&D Sector.<br>Some of the actions are focused on raising awareness of key actors, such as C&D industry, manufactures, waste management organisations, designers and architects. This in turn should generate behavioural change toward recycling therefore reducing disposal waste.<br>Reduced demand for virgin materials (as in the case for plastics) and increased recycling as a result of these actions will also generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas (GHG) emissions associated with transportation and reprocessing of waste. However, in order to reduce the Ecological Footprint of C&D waste, it is necessary to concentrate on recycling the materials which will reduce the footprint by the greatest percentage (i.e. |

**Actions for Waste Recycling: Education, Guidance, Tools and Market**

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- Reporting on recycling performance by expanding network of Green Compass accredited sites
- Increasing the role of design for recycling (Design for Deconstruction)
- Ecodesign of products
- Increasing awareness and behaviour change towards recycling
- Support for construction and demolition businesses
- Increase awareness about using recycled and reused products
- Green guide to building materials specification

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | | | Wood (26.6%EF), Plastic (17.5%EF), Insulation & Gypsum (12.5%EF), Hazardous Waste (10%EF) and Metals (9.5%))[1]. |
| **Waste Infrastructure**<br>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this | • To promote markets for recyclates and recycled goods;<br>• To encourage the development and deployment of alternative waste technologies and R&D;<br>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;<br>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;<br>• To support existing and develop new social enterprises focusing on waste as a | ✓✓ | The actions as a whole will promote market opportunities for recycling and substitute materials through a range of technical and financial incentives and guidance such as encouraging use of substitutes for aggregates and working with product manufacturers to increase recyclability of products.<br>They also encourage sustainable design through promoting ecodesign of construction products and boosting the role of design for recycling (Design for Deconstruction).<br>As recycling of waste is encouraged, there may be a requirement to manage less 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 local employment opportunities; however, it is not expected that this effect would be |

[1] WAG (2010) Draft C&D Waste Sector Plan – Part 1 for Consultation, Towards Zero Waste: The Overarching Waste Strategy Document

| Actions for Waste Recycling: Education, Guidance, Tools and Market | | | |
|---|---|---|---|
| • Encouraging use of alternative substitutes for aggregates<br>• Waste Protocols Project<br>• Working with product manufacturers to increase recyclability of products<br>• Working with product manufacturers to increase recycled content<br>• Reporting on recycling performance by expanding network of Green Compass accredited sites<br>• Increasing the role of design for recycling (Design for Deconstruction)<br>• Ecodesign of products<br>• Increasing awareness and behaviour change towards recycling<br>• Support for construction and demolition businesses<br>• Increase awareness about using recycled and reused products<br>• Green guide to building materials specification | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | community resource;<br>• To promote equality and opportunity to access waste management facilities to prevent instances of fly-typing;<br>• To provide cost-effective and reliable sustainable waste management. | | significant since 67% of C&D waste produced is currently being reused already and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions. Potential mitigation measures could include training and upskilling in the use of new tools and staff to be redeployed.<br>By recycling waste materials, less waste is disposed to landfill and this can be cost benefits for companies and other key actors. Despite the high cost of recycling equipments, facilities, implementing protocols, etc the costs of sending waste to landfill are increasing, in particular the rising Landfill Tax and the Aggregates Levy. Reducing the volume of disposal waste may therefore generate cost savings related to the management of such waste. |
| **Landscape, biodiversity and cultural heritage**<br>To protect and enhance urban and rural landscapes and resources, including ecological services and functions | • To protect designated landscapes: environmental, cultural and historic;<br>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity; | ✓ | These actions could have a long-term beneficial effect for the natural and historic environment; recycling helps conserve limited resources and avoid the production of virgin materials such as plastics. It will also prevent loss of habitats and avoid effects on coastal erosion and marine life (i.e. marine aggregate extraction). |

| Actions for Waste Recycling: Education, Guidance, Tools and Market | | | |
|---|---|---|---|
| • Encouraging use of alternative substitutes for aggregates<br>• Waste Protocols Project<br>• Working with product manufacturers to increase recyclability of products<br>• Working with product manufacturers to increase recycled content<br>• Reporting on recycling performance by expanding network of Green Compass accredited sites<br>• Increasing the role of design for recycling (Design for Deconstruction)<br>• Ecodesign of products<br>• Increasing awareness and behaviour change towards recycling<br>• Support for construction and demolition businesses<br>• Increase awareness about using recycled and reused products<br>• Green guide to building materials specification | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | • To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;<br>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;<br>• To promote the use of brownfield land use;<br>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;<br>• To remediate contaminated land. | | There may be also indirect positive effects in terms of reduced levels of fly-tipping, avoiding as a result, adverse effects on existing flora, fauna and habitats. |
| **Soil**<br>To protect and enhance soil resources | • To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation.<br>• To protect against contamination to soil;<br>• To conserve and treat source segregated organic waste for improving the quality of | ✓ | As above, these actions should have a long term beneficial effect for the soil environment. On the one hand, encouraging prevention and minimisation of waste will reduce the volume of waste going to landfill, which in turn will minimise the capacity demand for landtake. On the other hand, increased reuse and recycling should offset land take associated with mineral extractions. |

| Actions for Waste Recycling: Education, Guidance, Tools and Market | | | |
|---|---|---|---|
| • Encouraging use of alternative substitutes for aggregates<br>• Waste Protocols Project<br>• Working with product manufacturers to increase recyclability of products<br>• Working with product manufacturers to increase recycled content<br>• Reporting on recycling performance by expanding network of Green Compass accredited sites<br>• Increasing the role of design for recycling (Design for Deconstruction)<br>• Ecodesign of products<br>• Increasing awareness and behaviour change towards recycling<br>• Support for construction and demolition businesses<br>• Increase awareness about using recycled and reused products<br>• Green guide to building materials specification | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | Welsh soils. | | In addition, reducing the volume of waste going to landfill will avoid generation of landfill gas and leachate and minimise, therefore, the risk of soil contamination and thereby helping to maintain natural soil functioning and associated ecosystem services. However, it is not expected that this risk would be significant since the majority of the landfill waste from the construction and demolition sector consists on inert materials. In fact, over 75% of the waste going to landfill is clean excavated material, concrete, bricks and timber. |
| **Water**<br>To protect and promote the sustainable use of water resources | • To promote sustainable flood risk management;<br>• To protect and enhance water quality and quantity in inland, coastal and maritime environments. | ✓ | Similarly, these actions should have a long-term beneficial effect for the water environment. Reducing the level of raw material extraction will avoid effects on water tables and on coastal erosion and maritime environments (i.e. marine aggregates).<br>In addition, encouraging the recycling of waste will help reduce the volume of waste going to landfill, contributing to protect the water environment; in fact, avoiding the construction and operation of residual waste facilities such as landfill can result in preventing water pollution to groundwater, rivers and coastal environments for example |

| Actions for Waste Recycling: Education, Guidance, Tools and Market<br>• Encouraging use of alternative substitutes for aggregates<br>• Waste Protocols Project<br>• Working with product manufacturers to increase recyclability of products<br>• Working with product manufacturers to increase recycled content<br>• Reporting on recycling performance by expanding network of Green Compass accredited sites<br>• Increasing the role of design for recycling (Design for Deconstruction)<br>• Ecodesign of products<br>• Increasing awareness and behaviour change towards recycling<br>• Support for construction and demolition businesses<br>• Increase awareness about using recycled and reused products<br>• Green guide to building materials specification | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | | | due to surface water runoff and leeching.<br>No direct link between these actions and flood risk management has been identified, although it is assumed that some of the actions will take into account future flood risk. |
| **Air quality, noise and odour**<br>To protect and enhance air quality in local, regional and national context | • To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;<br>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;<br>• To minimise adverse impacts to noise levels within communities, to ;<br>• To minimise odours arising from waste processing and its impact upon local communities. | ✓ | Again, these actions could generate 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 and a possible reduction in use of transport. However, there may be offset by some increase in emissions as a result of increased use of HGV's to collect bulky waste to be recycled. It is assumed that any such effects would not be of the same magnitude as those above mentioned.<br>Similarly, these actions may have an overall positive indirect effect on noise levels within communities, given an overall reduction in noise related to transport and waste treatment. |
| **Climate change**<br>To assist with Wales' capacity to adapt to and mitigate against | • To reduce GHG emissions;<br>• To contribute to national, regional and local | ✓ | Promoting the recycling of C&D waste will encourage a reduction of GHG emissions associated for example with transportation (to re-processors of raw materials, to place of |

| Actions for Waste Recycling: Education, Guidance, Tools and Market | | | |
|---|---|---|---|
| • Encouraging use of alternative substitutes for aggregates<br>• Waste Protocols Project<br>• Working with product manufacturers to increase recyclability of products<br>• Working with product manufacturers to increase recycled content<br>• Reporting on recycling performance by expanding network of Green Compass accredited sites<br>• Increasing the role of design for recycling (Design for Deconstruction)<br>• Ecodesign of products<br>• Increasing awareness and behaviour change towards recycling<br>• Support for construction and demolition businesses<br>• Increase awareness about using recycled and reused products<br>• Green guide to building materials specification | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| climatic change | level carbon abatement strategy/objectives;<br>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;<br>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects. | | use and to landfill) and reprocessing activities for raw materials. This in turn will contribute to mitigate the effects of Climate Change. |
| **Health**<br>To protect and enhance the health and well-being of communities | • To provide safe, secure, mechanisms for civic engagement;<br>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;<br>• To provide opportunities for those with health issues to gain suitable and meaningful employment;<br>• To provide safe and healthy working environments for employees within the waste and recycling industries | ✓ | By promoting the recycling of C&D waste, these actions will help achieve higher levels of waste minimisation and a better management of waste (i.e. use of quality protocols, etc). This in turn will provide a safer and healthier working environment (for example by reducing air and noise pollution, odours and hazardous materials). |

| Actions for Waste Recycling: Education, Guidance, Tools and Market | | | |
|---|---|---|---|
| • Encouraging use of alternative substitutes for aggregates<br>• Waste Protocols Project<br>• Working with product manufacturers to increase recyclability of products<br>• Working with product manufacturers to increase recycled content<br>• Reporting on recycling performance by expanding network of Green Compass accredited sites<br>• Increasing the role of design for recycling (Design for Deconstruction)<br>• Ecodesign of products<br>• Increasing awareness and behaviour change towards recycling<br>• Support for construction and demolition businesses<br>• Increase awareness about using recycled and reused products<br>• Green guide to building materials specification | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| **Civic engagement**<br>To increase civic engagement in sustainable waste practice | • To raise awareness and understanding of sustainable waste strategy, objectives and management<br>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor.<br>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement<br>• To support and provide opportunities for volunteering in the waste and recycling industries;<br>• To ensure all promotional literature is published in Welsh as well as English where appropriate;<br>• To provide community facilities including visitor and educational centres. | 0 | The actions are likely to have very limited effect in terms of increasing broad civic engagement in waste practice as they focus on actions only for key stakeholders within the C&D sector (i.e. designers, architects, product manufacturers, contractors, waste management industry, etc). |
| **Summary** | | | |

## Actions for Waste Recycling: Education, Guidance, Tools and Market

- Encouraging use of alternative substitutes for aggregates
- Waste Protocols Project
- Working with product manufacturers to increase recyclability of products
- Working with product manufacturers to increase recycled content
- Reporting on recycling performance by expanding network of Green Compass accredited sites
- Increasing the role of design for recycling (Design for Deconstruction)
- Ecodesign of products
- Increasing awareness and behaviour change towards recycling
- Support for construction and demolition businesses
- Increase awareness about using recycled and reused products
- Green guide to building materials specification

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|

The actions are considered to have a strong positive effect in relation to waste management and waste infrastructure objectives. This is primarily due to an encouragement of recycling of C&D wastes, through promoting:

- development of substitute and recyclable products and
- the use of campaign, guidance, standards, tools and mechanisms for recycling.

Recycling involves recovery operations by which waste materials are reprocessed into products whether for the original or other purposes.

For maximum effectiveness, the actions should be implemented in combination; in isolation they will not have the same level of positive effect predicted in terms of supporting a more sustainable waste management within the C&D Sector.

A number of the actions are focused on raising awareness of key actors, such as C&D industry, manufactures, waste management organisations, designers and architects. This awareness-raising should in turn generate behavioural change toward recycling therefore reducing disposal waste.

Reduced demand for raw materials (as in the case for plastics) and increased recycling as a result of these actions will also generate a number of benefits with respect to the minimisation of Wales' Ecological Footprint; for example reducing the loss' rate of finite resource (i.e. mineral extraction) and greenhouse gas emissions associated with transportation and reprocessing of waste. However, in order to maximise the reduction the Ecological Footprint of C&D waste, it is necessary to concentrate on recycling the materials which will reduce the footprint by the greatest percentage (i.e. Wood (26.6%EF), Plastic (17.5%EF), Insulation & Gypsum (12.5%EF), Hazardous Waste (10%EF) and Metals (9.5%))[2].

The actions as a whole will promote market opportunities for recycling and substitute materials through a range of technical and financial incentives and

[2] WAG (2010) Draft C&D Waste Sector Plan – Part 1 for Consultation, Towards Zero Waste: The Overarching Waste Strategy Document

| Actions for Waste Recycling: Education, Guidance, Tools and Market | | | |
|---|---|---|---|
| • Encouraging use of alternative substitutes for aggregates<br>• Waste Protocols Project<br>• Working with product manufacturers to increase recyclability of products<br>• Working with product manufacturers to increase recycled content<br>• Reporting on recycling performance by expanding network of Green Compass accredited sites<br>• Increasing the role of design for recycling (Design for Deconstruction)<br>• Ecodesign of products<br>• Increasing awareness and behaviour change towards recycling<br>• Support for construction and demolition businesses<br>• Increase awareness about using recycled and reused products<br>• Green guide to building materials specification | | | |
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| guidance such as encouraging use of substitutes for aggregates and working with product manufacturers to increase recyclability of products.<br><br>They also encourage sustainable design through promoting ecodesign of construction products and boosting the role of design for recycling (Design for Deconstruction).<br><br>As recycling of waste is encouraged, there may be a requirement to manage less 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 local employment opportunities; however, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.<br><br>As a result of the recycling of C&D waste materials, less waste is disposed to landfill and this can be cost benefits for companies and other key actors. Despite the high cost of recycling equipments, facilities, implementing protocols, etc the costs of sending waste to landfill are increasing, in particular the rising Landfill Tax and the Aggregates Levy. Reducing the volume of disposal waste may therefore generate cost savings related to the management of such waste.<br><br>The actions are also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, soil, water, air quality/noise/odour, climate change and health due to the potential for the actions to optimise materials use (i.e. by conserving limited resources and avoiding the production of virgin materials, such as plastics), and reduce reliance on landfill/residual treatment.<br><br>It is anticipated the effects of the actions will be in the medium/long term and will offer long term benefits.<br><br>The following mitigation and enhancement measures could be considered by Welsh Government when developing the final version of the plan:<br>• Include 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.<br>• Promoting the sustainable and safe/healthy location of new recycling facilities. This includes avoiding areas at flood risk. | | | |

**Actions for Waste Recycling: Education, Guidance, Tools and Market**

- Encouraging use of alternative substitutes for aggregates
- Waste Protocols Project
- Working with product manufacturers to increase recyclability of products
- Working with product manufacturers to increase recycled content
- Reporting on recycling performance by expanding network of Green Compass accredited sites
- Increasing the role of design for recycling (Design for Deconstruction)
- Ecodesign of products
- Increasing awareness and behaviour change towards recycling
- Support for construction and demolition businesses
- Increase awareness about using recycled and reused products
- Green guide to building materials specification

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| • Consideration of landscape, biodiversity and cultural heritage issues through EIA of qualifying C&D recycling interventions/schemes to protect and enhance urban and rural landscapes and resources.<br>• Consideration of soil and water issues through EIA of qualifying C&D recycling interventions/schemes to protect and enhance soil and water resources.<br>• Consideration of air quality (including GHG), noise and odour issues through EIA of qualifying C&D recycling interventions/schemes.<br>• Ensure that qualifying C&D interventions/schemes minimise transport distance of recycled and reused products from/to premises.<br>• Establishment of health and safety standards for qualifying C&D recycling interventions/schemes where appropriate. E.g. reduce the requirement for manual handling operations. | | | |

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 |
|---|---|---|---|---|---|---|---|---|---|
| **Actions for Waste Recycling: Education, Guidance, Tools and Market** | | | | | | | | | |
| Education, Guidance, Tools and Market | ✓✓ | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

## Construction & Demolition Sector Plan – Assessment of Actions for Preparation for Reuse

Actions Assessment Matrix

**SCORING KEY:**

| | |
|---|---|
| ✓✓ | Strong Positive Effect |
| ✓ | Positive Effect |
| × | Negative Effect |
| ×× | Strong negative Effect |
| ? | Unknown Effect |
| 0 | No relationship/neutral Effect |

| **Actions for Preparation for Reuse: Education, Guidance and Tools**<br>• **Encouraging a reclamation led approach**<br>• **Encouraging the implementation of the Demolition Protocol** | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| **Waste Management**<br>To increase sustainable waste management and reduce Wales' ecological footprint | • To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;<br>• To increase infrastructural capacity and facilities for sustainable waste management;<br>• To encourage behavioural change and participation amongst household, commercial and industrial operators;<br>• To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management. | ✓✓ | Giving consideration to the deconstruction and demolition of a building at design stage and promoting the implementation of the Demolition Protocol are actions which encourage reusing wastes arising from C&D activities which have been discarded for disposal (for example wood items such as wood pallets). These types of waste need to be prepared before being used, which means checking, cleaning or repairing recovery operations, by which products that have become waste are prepared so that they can be reused without any other pre-processing. As a whole, this could contribute an increase of sustainable waste management within the C&D sector.<br>Implementing these actions should also promote an increase of awareness and understanding of designers and contractors of sustainable management and resource efficiency activities. And in turn, it should generate behavioural change toward prevention and reuse and therefore reducing disposal waste and the level of |

| Actions for Preparation for Reuse: Education, Guidance and Tools<br>• Encouraging a reclamation led approach<br>• Encouraging the implementation of the Demolition Protocol | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | | | waste requiring management.<br><br>Reduced demand for resource and increased reuse as a result of these actions will generate also a number of benefits with respect to the minimisation of Wales' Ecological Footprint; 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. |
| **Waste Infrastructure**<br>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this | • To promote markets for recyclates and recycled goods;<br>• To encourage the development and deployment of alternative waste technologies and R&D;<br>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;<br>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;<br>• To support existing and develop new social enterprises focusing on waste as a community resource;<br>• To promote equality and opportunity to access waste management facilities to | ✓ | The actions encourage sustainable design and procurement initiatives through promoting reclamation led approach and demolition protocol. This in turn may encourage the development and deployment of alternatives waste technologies and R&D.<br><br>As contractors are encouraged to reuse waste materials, there may be a requirement to manage less 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 local employment opportunities; however, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused already[1] and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions. Potential mitigation measures could include training and upskilling in the use of new tools and staff to be redeployed.<br><br>By preparing C&D waste to be reused, less waste is disposed to landfill and this can be cost benefits for companies. Despite the |

[1] Welsh Government (2010) Draft C&D Sector Plan – Part 1 for Consultation, Towards Zero Waste: The Overarching Waste Strategy Document

| Actions for Preparation for Reuse: Education, Guidance and Tools<br>• Encouraging a reclamation led approach<br>• Encouraging the implementation of the Demolition Protocol | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | prevent instances of fly-typing;<br>• To provide cost-effective and reliable sustainable waste management. | | high cost of 'preparing for reuse' equipments and facilities, the costs of sending waste to landfill are increasing, in particular the rising Landfill Tax and the Aggregates Levy. Reducing the volume of disposal waste may therefore generate cost savings related to the management of such waste. |
| **Landscape, biodiversity and cultural heritage**<br>To protect and enhance urban and rural landscapes and resources, including ecological services and functions | • To protect designated landscapes: environmental, cultural and historic;<br>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;<br>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;<br>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;<br>• To promote the use of brownfield land use;<br>• To ensure the provision of recycling facilities in all new developments and improve capacity in existing built infrastructure;<br>• To remediate contaminated land. | ✓ | These actions could have a long-term beneficial effect for the natural and historic environment; reuse helps conserve limited resources. It will also prevent loss of habitats and avoid effects on erosion and terrestrial and marine life (i.e. marine aggregate extraction). In addition, minimising the volume to landfill/residual treatment will reduce the need for new developments, encouraging therefore the protection of landscape, historical resources and biodiversity.<br>There may be also indirect positive effects in terms of reduced levels of fly-tipping, avoiding in turn, adverse effects on existing flora, fauna and habitats. |
| **Soil**<br>To protect and enhance soil resources | • To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation. | ✓ | These actions should have a long term beneficial effect for the soil environment. Again, encouraging the reuse of C&D materials will reduce the volume of waste going to landfill, reducing future land demand, and avoiding generation of landfill |

| Actions for Preparation for Reuse: Education, Guidance and Tools<br>• Encouraging a reclamation led approach<br>• Encouraging the implementation of the Demolition Protocol | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | • To protect against contamination to soil;<br>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils. | | gas and leachate. As a result this will in turn reduce the future risk of soil contamination and thereby helping to maintain natural soil functioning and associated ecosystem services. However, it is not expected that this risk would be significant since the majority of the landfill waste from the C&D sector consists on inert materials. In fact, over 75% of the waste going to landfill is clean excavated material, concrete, bricks and timber. |
| **Water**<br>To protect and promote the sustainable use of water resources | • To promote sustainable flood risk management;<br>• To protect and enhance water quality and quantity in inland, coastal and maritime environments. | ✓ | Similarly, the actions should have a long-term beneficial effect for the water environment. Reducing the level of raw material extraction will avoid effects on water tables and on coastal erosion and maritime environments (i.e. marine aggregates).<br>By encouraging the reuse of waste and materials, the action will help reduce the volume of waste going to landfill, avoiding therefore the risk of pollution to groundwater, rivers and coastal environments for example due to surface water runoff and leeching.<br>No clear link between the actions and flood risk management has been identified, although it is assumed that some policies, guidance and contractual clauses will take into account future flood risk. |
| **Air quality, noise and odour**<br>To protect and enhance air quality in local, regional and national context | • To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;<br>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;<br>• To minimise adverse impacts to noise levels | ✓ | The actions could generate 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. However, there may be some increase in emissions as a result of increased use of HGV's to collect bulky waste to prepare to be reused and recycled, although it has been assumed that any such effects |

| Actions for Preparation for Reuse: Education, Guidance and Tools<br>• Encouraging a reclamation led approach<br>• Encouraging the implementation of the Demolition Protocol | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | within communities, to ;<br>• To minimise odours arising from waste processing and its impact upon local communities. | | would not be of the same magnitude as those above mentioned.<br>Similarly, these actions may have an overall positive indirect effect on noise levels within communities, given an overall reduction in noise related to transport and waste treatment.<br>It is assumed that, as a result of a reduction in residual waste requiring treatment, there will be a reduction in odours arising from waste processing and landfill. |
| **Climate change**<br>To assist with Wales' capacity to adapt to and mitigate against climatic change | • To reduce GHG emissions;<br>• To contribute to national, regional and local level carbon abatement strategy/objectives;<br>• To promote the efficient use of on site renewable energy and energy from waste where appropriate;<br>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects. | ✓ | Promoting the reuse of C&D materials through these actions will encourage a reduction of GHG emissions associated for example with transportation (to re-processors of raw materials, to place of use and to landfill) and reprocessing activities (for raw materials and recycling). This in turn will contribute to mitigate the effects of Climate Change. |
| **Health**<br>To protect and enhance the health and well-being of communities | • To provide safe, secure, mechanisms for civic engagement;<br>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;<br>• To provide opportunities for those with health issues to gain suitable and meaningful employment;<br>• To provide safe and healthy working environments for employees within the waste | ✓ | By promoting the reuse of C&D waste, these policies will help companies to achieve higher levels of waste minimisation and a better management of waste. This in turn will provide a safer and healthier working environment (for example by reducing air and noise pollution, odours and hazardous materials and a potential reduction in fly tipping). |

| Actions for Preparation for Reuse: Education, Guidance and Tools<br>• Encouraging a reclamation led approach<br>• Encouraging the implementation of the Demolition Protocol | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | and recycling industries | | |
| **Civic engagement**<br>To increase civic engagement in sustainable waste practice | • To raise awareness and understanding of sustainable waste strategy, objectives and management<br>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor.<br>• To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement<br>• To support and provide opportunities for volunteering in the waste and recycling industries;<br>• To ensure all promotional literature is published in Welsh as well as English where appropriate;<br>• To provide community facilities including visitor and educational centres. | 0 | The actions are likely to have very limited effect in terms of increasing broad civic engagement in waste practice as they are focused on actions for waste's reuse within the C&D sector. |

**Summary**

The actions are considered to have a strong positive effect in relation to waste management objective. Giving consideration to the deconstruction and demolition of a building at design stage and promoting the implementation of the Demolition Protocol are actions which encourage reusing wastes arising from C&D activities which have been discarded for disposal (for example wood items such as wood pallets). These types of waste need to be prepared before being used, which means checking, cleaning or repairing recovery operations, by which products that have become waste are prepared so that they can be reused without any other pre-processing. As a whole, this should contribute an increase of sustainable waste management within the C&D sector.

Implementing these actions should also promote an increase of awareness and understanding of designers and contractors of sustainable management and resource efficiency activities. And in turn, it should generate behavioural change toward prevention and reuse and therefore reducing disposal waste and the level of waste

| Actions for Preparation for Reuse: Education, Guidance and Tools<br>• Encouraging a reclamation led approach<br>• Encouraging the implementation of the Demolition Protocol | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |

requiring management.

Reduced demand for resource and increased reuse as a result of these actions will generate also a number of benefits with respect to the minimisation of Wales' Ecological Footprint; 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.

In terms of waste infrastructure objective, these actions are expected to have a positive effect on it. The actions encourage sustainable design and procurement initiatives through promoting reclamation led approach and demolition protocol. This in turn may encourage the development and deployment of alternatives waste technologies and R&D. As contractors are encouraged to reuse of waste, there may be a requirement to manage less 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 local employment opportunities; however, it is not expected that this effect would be significant since 67% of C&D waste produced is currently being reused already[2] and the opportunity for employment associated with material recovery and reuse will itself mitigate against any job reductions.

By preparing C&D waste to be reused, less waste will be disposed to landfill and this should offer cost benefits for companies. Despite the potential high cost of 'preparing for reuse' equipments and facilities, the costs of sending waste to landfill are increasing, in particular the rising Landfill Tax and the Aggregates Levy. Reducing the volume of disposal waste may therefore generate cost savings related to the management of such waste.

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 optimise materials use (i.e. by conserving limited resources and avoiding the extraction of resources for production of new materials, such as plastics), and reduce reliance on landfill/residual treatment.

It is anticipated the effects of the actions will be in the medium term and will offer long term benefits.

The following mitigation and enhancement measures could be considered by Welsh Government when developing the final version of the plan:

- Include 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.
- Consideration of soil and water issues through EIA of qualifying C&D interventions/schemes to protect and enhance soil and water resources.
- Encourage the use of EA and WRAP best practice/guidance in handling stockpiles of materials such as aggregates to reduce the risk of soil and water pollution on site if stockpiles of materials (i.e. aggregates) are not managed adequately.
- Consideration of air quality (including GHG), noise and odour issues through EIA of qualifying C&D interventions/schemes.

[2] Welsh Government (2010) Draft C&D Waste Sector Plan – Part 1 for Consultation, Towards Zero Waste: The Overarching Waste Strategy Document

| Actions for Preparation for Reuse: Education, Guidance and Tools<br>• Encouraging a reclamation led approach<br>• Encouraging the implementation of the Demolition Protocol | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| • Reducing the need to transport reuse items and waste to prepare to be reused.<br>• Ensure that qualifying C&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.<br>• Establishment of health and safety standards for qualifying C&D interventions/schemes where appropriate. E.g. reduce the requirement for manual handling operations. | | | |

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 |
|---|---|---|---|---|---|---|---|---|---|
| **Actions for Preparation for Reuse: Education, Guidance and Tools** | | | | | | | | | |
| Education, Guidance and Tools | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

## Construction & Demolition Sector Plan – Assessment of Actions for Other Recovery and Disposal: Education and Guidance

Actions Assessment Matrix

**SCORING KEY:**

| | |
|---|---|
| ✓✓ | Strong Positive Effect |
| ✓ | Positive Effect |
| × | Negative Effect |
| ×× | Strong negative Effect |
| ? | Unknown Effect |
| 0 | No relationship/neutral Effect |

### Actions for Other Recovery and Disposal: Education and Guidance

- **Reducing reliance on landfill**

CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| **Waste Management**<br>To increase sustainable waste management and reduce Wales' ecological footprint | • To raise awareness and understanding of sustainable waste reduction and management and encourage resource efficiency and sustainable consumption;<br>• To increase infrastructural capacity and facilities for sustainable waste management;<br>• To encourage behavioural change and participation amongst household, commercial | ✓✓ | The action seeks to increase awareness and understanding of the landfill tax increase and the role of diverting C&D waste from landfill within the sustainable management of waste. Raising awareness will in turn help encourage behavioural changes within the C&D sector. Although landfill is at the bottom of the waste hierarchy and is, therefore, a last resort option, there may however be occasions when disposal of C&D waste to landfill is unavoidable and may present the best environmental solution for certain materials |

## Actions for Other Recovery and Disposal: Education and Guidance

- **Reducing reliance on landfill**

CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | and industrial operators;<br>• To contribute to the reduction/ minimisation of Wales' Ecological Footprint and progress self-sufficiency in waste management. | | (i.e. asbestos).<br>With decreasing landfill space, diversion from landfill relieves pressure on existing depleted land stock. In addition, some C&D materials, for example, wood, degrade over time releasing methane, a greenhouse gas which contributes to global warming. Other materials may leach out over time, also causing negative environmental effects. Avoiding all these environmental effects through landfill tax increase and landfill diversion will contribute to the reduction of Wales' Ecological Footprint. |
| **Waste Infrastructure**<br>To increase the infrastructure and facilities for sustainable waste management and the capacity of people to create and capitalise upon opportunities arising from this | • To promote markets for recyclates and recycled goods;<br>• To encourage the development and deployment of alternative waste technologies and R&D;<br>• To encourage sustainable design of waste infrastructure and promote the development of the green technologies sector and sustainable procurement;<br>• To promote equality of opportunity and access to local employment, training and upskilling and volunteering;<br>• To support existing and develop new social | ✓ | An indirect effect of diverting more C&D waste from landfill is the encouragement of market opportunities for recyclates and recycled goods although the effect is not expected to be significant as the largest quantities of waste disposed to landfill are currently soils and aggregates, and these are materials targeted for reuse (either on or off site) not for being recycled.<br>Reducing the volume of disposal waste may generate cost savings related to the management of such residual waste which presents in turn less national risk to Landfill Tax.<br>It may have an indirect positive effect in reducing the number of fly-tipping events by indirectly encouraging waste prevention, reuse and recycling initiatives. |

## Actions for Other Recovery and Disposal: Education and Guidance

- **Reducing reliance on landfill**

CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | enterprises focusing on waste as a community resource;<br>• To promote equality and opportunity to access waste management facilities to prevent instances of fly-typing;<br>• To provide cost-effective and reliable sustainable waste management. | | |
| **Landscape, biodiversity and cultural heritage**<br>To protect and enhance urban and rural landscapes and resources, including ecological services and functions | • To protect designated landscapes: environmental, cultural and historic;<br>• To protect and enhance biodiversity, geodiversity, flora and fauna including biodiversity and ecological services and connectivity;<br>• To protect designated and undesignated historic assets and their settings, including listed buildings, scheduled ancient monuments, and historic parks and gardens;<br>• To protect the character and visual identity of landscapes and townscapes, including cultural and historic landscapes;<br>• To promote the use of brownfield land use;<br>• To ensure the provision of recycling facilities | ✓ | The action could have a long-term beneficial effect for the natural and historic environment. Minimising the volume to landfill through diversion of C&D waste from landfill will reduce the need for future landfill capacity, encouraging therefore the protection of existing sites with landscape, historical and/or biodiversity importance.<br>There may be also indirect positive effects in terms of reduced levels of fly-tipping, avoiding as a result, adverse effects on existing flora, fauna and habitats. |

| Actions for Other Recovery and Disposal: Education and Guidance<br><br>• **Reducing reliance on landfill**<br><br>CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses. | | | |
|---|---|---|---|
| **Objective** | **Sub-objectives** | **Score** | **Commentary** |
| | in all new developments and improve capacity in existing built infrastructure;<br>• To remediate contaminated land. | | |
| **Soil**<br>To protect and enhance soil resources | • To protect natural soil functions and ecosystems, preserving ecosystem services such as nutrient cycling, carbon storage and flood attenuation.<br>• To protect against contamination to soil;<br>• To conserve and treat source segregated organic waste for improving the quality of Welsh soils. | ✓ | The action should have a long term beneficial effect for the soil environment. Diversion of C&D waste from landfill will reduce the volume of waste going to landfill, reducing future land demand, and avoiding generation of landfill gas and leachate. As a result this will in turn reduce the future risk of soil contamination and thereby helping to maintain natural soil functioning and associated ecosystem services. However, it is not expected that this risk would be significant since the majority of the landfill waste from the C&D sector consists on inert materials. In fact, over 75% of the waste going to landfill is clean excavated material, concrete, bricks and timber. |
| **Water**<br>To protect and promote the sustainable use of water resources | • To promote sustainable flood risk management;<br>• To protect and enhance water quality and quantity in inland, coastal and maritime environments. | ✓ | Similarly, the action should have a long-term beneficial effect for the water environment. The construction and operation of residual waste facilities such as landfill can result in pollution to groundwater, rivers and coastal environments for example due to surface water runoff and leeching. Encouraging landfill diversion of C&D waste will help reduce the volume of waste going to landfill, protecting therefore the water environment. However, as mentioned above, it is not expected that this effect would be significant since the |

## Actions for Other Recovery and Disposal: Education and Guidance

- **Reducing reliance on landfill**

CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | | | majority of the residual waste from the C&D sector consists on inert materials.<br>No direct link between these actions and flood risk management has been identified. |
| **Air quality, noise and odour**<br>To protect and enhance air quality in local, regional and national context | • To promote proximity of facilities to local settlements and sustainable transport modes/practices to serve such facilities with preferences given to walking and cycling;<br>• To minimise adverse impacts to air quality arising directly from facilities or transportation of materials to and from facilities;<br>• To minimise adverse impacts to noise levels within communities, to ;<br>• To minimise odours arising from waste processing and its impact upon local communities. | ✓ | Again, the action could generate long-term positive indirect effects in relation to air quality by encouraging a minimisation of emissions to air due to a reduction in C&D waste going to landfill and a reduction in emissions associated with transport and disposal. Conversely, this may be offset to a degree by some increase in emissions as a result of increased use of HGV's to collect bulky waste to be recycled and reused although it has been assumed that any such effects would not be of the same magnitude as those above mentioned.<br>Similarly, the action may have an overall positive effect on noise and odour levels within communities given an overall reduction in noise and odour related to transport and landfill disposal. |
| **Climate change**<br>To assist with Wales' capacity to adapt to and mitigate against climatic change | • To reduce GHG emissions;<br>• To contribute to national, regional and local level carbon abatement strategy/objectives;<br>• To promote the efficient use of on site renewable energy and energy from waste | ✓ | Landfill diversion of C&D waste will encourage a reduction of GHG emissions associated for example with transportation to landfill sites and reduction of methane release caused by materials' degradation (i.e. wood). This in turn will contribute to mitigate the effects of Climate Change. |

## Actions for Other Recovery and Disposal: Education and Guidance

- **Reducing reliance on landfill**

CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | where appropriate;<br>• To be adaptable to predicted climate change effects including fluvial and maritime flooding and extreme weather effects. | | |
| **Health**<br>To protect and enhance the health and well-being of communities | • To provide safe, secure, mechanisms for civic engagement;<br>• To prevent the exposure of members of the public to hazards, noise and odour arising from waste;<br>• To provide opportunities for those with health issues to gain suitable and meaningful employment;<br>• To provide safe and healthy working environments for employees within the waste and recycling industries | ✓ | It is assumed that, as a result of a reduction in waste sent to landfill due to landfill diversion, there will also be a reduction in hazards, air and noise pollution and odour associated with the management of waste. |
| **Civic engagement**<br>To increase civic engagement in sustainable waste practice | • To raise awareness and understanding of sustainable waste strategy, objectives and management<br>• To increase participation in more sustainable waste practice for all members of society, including socially disadvantaged groups and the poor. | 0 | The action is likely to have very limited effect in terms of increasing broad civic engagement in waste practice as they focus on raise awareness within the C&D sector. |

## Actions for Other Recovery and Disposal: Education and Guidance

- **Reducing reliance on landfill**

CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|
| | • To increase accessibility to sustainable waste facilities and infrastructure and tackle physical and social barriers to engagement<br>• To support and provide opportunities for volunteering in the waste and recycling industries;<br>• To ensure all promotional literature is published in Welsh as well as English where appropriate;<br>• To provide community facilities including visitor and educational centres. | | |

**Summary**

The action is considered to have a strong positive effect in relation to waste management objective, since it seeks to increase awareness and understanding of the landfill tax increase and the role of diverting C&D waste from landfill within the sustainable management of waste. Raising awareness will in turn help encourage behavioural changes within the C&D sector. Although landfill is at the bottom of the waste hierarchy and is, therefore, a last resort option, there may however be occasions when disposal of C&D waste to landfill is unavoidable and may present the best environmental solution for certain materials (i.e. asbestos).

With decreasing landfill space, diversion from landfill relieves pressure on existing depleted land stock. In addition, some C&D materials, for example, wood, degrade over time releasing methane, a greenhouse gas which contributes to global warming. Other materials may leach out over time, also causing negative environmental effects. Avoiding all these environmental effects through landfill tax increase and landfill diversion will contribute to the reduction of Wales' Ecological Footprint.

In terms of waste infrastructure objective, the action is considered to have a positive effect. An indirect effect of diverting more C&D waste from landfill is

## Actions for Other Recovery and Disposal: Education and Guidance

- **Reducing reliance on landfill**

  CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses.

| Objective | Sub-objectives | Score | Commentary |
|---|---|---|---|

the encouragement of market opportunities for recyclates and recycled goods although the effect is not expected to be significant as the largest quantities of waste disposed to landfill are currently soils and aggregates, and these are materials targeted for reuse (either on or off site) rather than recycling. Reducing the volume of disposal waste may also generate cost savings related to the management of such residual waste which presents in turn less national risk to Landfill Tax. The action may also have an indirect positive effect in reducing the number of fly-tipping events by encouraging waste prevention, reuse and recycling initiatives.

The action is also expected to have a positive effect on objectives relating to landscape/biodiversity/cultural heritage, soil, water, air quality/noise/odour, climate change and health. Minimising the volume to landfill through diversion of C&D waste from landfill will reduce the demand for future landfill, indirectly enabling the protection of existing sites with landscape, historical and/or biodiversity importance. It will also avoid generation of landfill gas and leachate minimising the risk of soil contamination. In terms of water, it will avoid pollution to groundwater, rivers and coastal environments for example due to surface water runoff and leeching. It also encourage a minimisation of emissions to air , including GHG emission, due to a reduction in C&D waste going to landfill and a possible reduction in use of transport. It is assumed that, as a result of a reduction in waste sent to landfill due to landfill diversion, there will also be a reduction in hazards, air and noise pollution and odour associated with the management of waste.

It is anticipated the effects of the actions will be felt from the medium term and will offer long term benefits.

The following mitigation and enhancement measures could be considered by Welsh Government when developing the final version of the plan:

- Specify measures to raise awareness within the C&D sector of the landfill tax increase and the benefits of diverting from landfill.

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 |
|---|---|---|---|---|---|---|---|---|---|
| **Actions for Other Recovery and Disposal: Education and Guidance** | | | | | | | | | |
| Education and Guidance | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 0 |

## APPENDIX D – HEALTH IMPACT ASSESSMENT OF THE C&D SECTOR PLAN

## Appendix D - Health Impact Assessment of the C&D Waste Sector Plan

NB:

- Non-mandatory actions within the C&D Waste Sector Plan were assessed as being optional and, as such, their outcome is not confirmed. These are indicated by 'uncertain' in the table below.

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| **Waste Prevention** | | | | |
| **Legislation to introduce Site Waste Management Plans** | | | | |
| Option 1: Business as usual | Legislation isn't introduced & SWMPs remain voluntary | Uncertain | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention | Legislation is introduced - SWMP's become a mandatory requirement for specified construction projects | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy. | Ensure that small businesses are included in the development of SWMPs. Create opportunities for small businesses.<br>SWMPs are mandatory in England for works over £300,000[1] | http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |
| Option 3: Beyond best practice - high level intervention | Welsh Government seeks changes to primary legislation to give further powers to specify content of SWMP's, including a requirement to follow the waste hierarchy and for SWMPs to also address the design stage. To include a requirement to report on the implementation of the plan | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.<br>Positive health impact on social capital through the reduction in crime from | Potentially positive, provided that SWMPs are audited.<br>Enable small businesses to receive specific training and support. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |

[1] http://www.netregs.gov.uk/netregs/businesses/construction/62359.aspx

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | reduced fly tipping. | | |
| **Legislation to introduce a charging scheme for Site Waste Management Plans** | | | | |
| Option 1: Business as usual | Legislation isn't introduced & SWMPs remain voluntary. | Uncertain | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Legislation is introduced - SWMPs become a mandatory requirement for specified construction projects. | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.<br>Negative health impact upon economy and employment through enforcement and financial penalties of small/ less prepared construction companies who failed to implement SWMPs. | Ensure that small businesses are included in the development of SWMPs. Create opportunities for small businesses.<br>SWMPs are mandatory in England for works over £300,000[2]. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |
| Option 3: Beyond best practice - high level intervention. | Welsh Government seeks changes to the Waste Measure to give further powers to specify content of SWMPs. | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.<br>Positive health impact on social capital through the reduction in crime from reduced fly tipping.<br>Negative health impact upon economy and employment through enforcement | Potentially positive: provided that SWMP's are audited.<br>Enable small businesses to receive specific training and support. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |

[2] http://www.netregs.gov.uk/netregs/businesses/construction/62359.aspx

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | and financial penalties of small/ less prepared construction companies who failed to implement SWMPs. | | |
| **Consideration of waste hierarchy guidance in respect of construction and demolition waste** | | | | |
| Option 1: Business as usual | No guidance produced. | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Waste hierarchy guidance is produced and promoted across all sectors, including construction & demolition sector. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Introduce legislation to mandate the use of the guidance, with reporting on compliance also required. | Positive health impact upon economy and employment through increased resource efficiency.<br>Negative health impact on social capital and crime through the potential increase in incidents of fly tipping from construction sites exceeding their waste limits.<br>Negative health impact upon economy and employment through enforcement and financial penalties of small/ less prepared construction companies who failed to fall inside their maximum waste compliance limits. | Setup comprehensive database and targets to encourage businesses to be competitive in reducing waste. | http://www.epa.gov/epawaste/conserve/rrr/imr/cdm/success.htm |
| **Sustainable Construction products** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Explore existing systems, such as the BASTA system developed in Sweden, and assess potential for the development of a similar system for application in Wales. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Initiate a system in Wales which specifies 'safe' materials and products for | Positive health impact upon the Environment through a decrease in | Setup framework to enable local suppliers to be registered with a | http://www.uniformreuse.co.uk/pdf/product_labelling_for_eol_ |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | mandatory use by the construction sector to assist with the phasing out of hazardous substances in construction. | occupational exposure of construction and waste workers to hazardous materials. | green label. Help businesses to identify sustainable label materials and source them easily<br><br>At present, the construction industry purchasers have only a limited amount of information to determine the ethical or environmental 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. [i3] | management.pdf (Page 18)<br><br>Existing labelling standards ISO 14020, ISO 14021, ISO 14024,<br><br>Sustainable supply network management techniques (Young and Kielkiewicz-Young (2001)) |
| **Design solutions for construction products** | | | | |
| Option 1: Business as usual | No action taken. | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Case studies examples produced and disseminated on eco-design of construction products. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Mandatory ecodesign requirement for all main construction products used in Wales. | Positive health impact upon economy and employment through increased resourcing of recovered and sustainable materials sourced in the UK.<br><br>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 green label. Help businesses to identify sustainable label materials and source them easily<br><br>At present, the construction industry purchasers have only a limited amount of information to determine the ethical | http://www.uniformreuse.co.uk/pdf/product_labelling_for_eol_management.pdf (Page 18)<br><br>Existing labelling standards ISO 14020, ISO 14021, ISO 14024,<br><br>Sustainable supply network management techniques |

[3] COBRA The International Construction Research Conference of the Royal Institution of Chartered Surveyors 7-8th September 2004

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | | 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. [ii 4] | (Young and Kielkiewicz-Young (2001)) |
| **Encourage use of value engineering for large construction projects** | | | | |
| Option 1: Business as usual | No action taken | No effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Fund Constructing Excellence in Wales to work with the civil engineering sector to raise awareness of this methodology and encourage its use along with other relevant tools available. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Mandate the Value Engineering approach in public sector procurement projects for construction. | Positive health impact upon economy and employment through increased resource efficiency and creation of new employment through recovered/ recycled construction materials.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy. | Create innovative opportunities for waste management companies and construction companies to create joint ventures seeking new markets for recovered materials. | http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html |
| **Designing out waste -** The Welsh Government will seek to increase awareness about 'designing out waste' amongst clients, designers and architects and encourage them utilise these principles at the commencement of a construction project. The Welsh Government will work with business support organisations like Constructing Excellence in Wales and WRAP Cymru to achieve this objective | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |

[4] COBRA The International Construction Research Conference of the Royal Institution of Chartered Surveyors 7-8th September 2004

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Business support organisations to be funded to work with the relevant sub-sectors of the construction & demolition sector to increase awareness about 'designing out waste'. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill. record-setters" in C&D materials reduction and recovery | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |
| Option 3: Beyond best practice - high level intervention. | Mandate a requirement for "designing out waste" through amending the primary legislation of Site Waste Management Plans. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill. record-setters" in C&D materials reduction and recovery | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |
| **Greening public procurement** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Explore opportunities to develop the Construction Procurement Strategy and include advice on waste prevention within public sector-funded construction projects via the proposed Sustainable Building Portal | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Develop mandatory standards for sustainable construction for the public sector including specific targets for waste prevention and reused / reclaimed materials. | Positive health impact on social capital, community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | Opportunity to specify types of materials based upon health impacts and the hazardous nature of their manufacture and use, e.g. many building | |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | | materials and cleaning/maintenance products emit toxic gases, such as VOC's and formaldehyde. These gases can have a detrimental impact on occupants' health and productivity as well. Avoiding these products will increase a building's IEQ. | |
| **Greening the Welsh Housing Quality Standard** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Work with local authorities and social housing providers to ensure that consideration is given to the life cycle implications of the products and materials used in upgrades. | Positive health impact upon employment and economy and as well as accommodation through improved efficiency of the construction of social housing. | | |
| Option 3: Beyond best practice - high level intervention. | Set mandatory targets for resource efficiency with the Welsh Housing Quality Standard. | Positive health impact upon employment and economy as well as Housing and accommodation through improved efficiency of house construction. | | |
| **Minimising the wastage factor** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Investigate viability of introducing an 80:20% ordering scheme in Wales, to reduce the amount of waste created through over-ordering. | Positive health impact upon employment and economy acting as a “Hedge” against price increases.<br>Negative health impact upon employment and economy when lead time of materials is not managed effectively.<br>Negative health impact upon employment and economy when materials holding costs are passed onto the client.<br>Negative health impact upon environment | Develop a framework and pilot projects so that businesses can ‘buy-in’ to the procurement model. | http://www.referenceforbusiness.com/management/Int-Loc/Inventory-Management |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | where additional transport is required for remaining 20% materials delivery. | | |
| Option 3: Beyond best practice - high level intervention. | Initiate an 80:20% ordering scheme across Wales, available through all major builders merchants. The scheme would be mandatory for all public sector-funded construction projects and potentially for all projects requiring SWMP's, over a set threshold | Positive health impact upon employment and economy acting as a “Hedge” against price increases.<br>Negative health impact upon employment and economy when lead time of materials is not managed effectively.<br>Negative health impact upon employment and economy when materials holding costs are passed onto the client.<br>Negative health impact upon environment where additional transport is required for remaining 20% materials delivery. | Develop a framework and pilot projects so that businesses can ‘buy-in’ to the procurement model. | http://www.referenceforbusiness.com/management/Int-Loc/Inventory-Management |
| **Waste Reduction Voluntary Agreement** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Explore the potential for establishing a voluntary agreement with the C&D sector in Wales to meet waste prevention targets. If feasible, establish a voluntary agreement with the C&D sector in Wales, with a focus on reducing their reliance on products and materials with a high ecological footprint. Aim to have 50% of all C&D sector businesses in Wales signed up to the agreement by 2014. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill. record-setters" in C&D materials reduction and recovery | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |
| Option 3: Beyond best practice - high level intervention. | Set mandatory waste reduction targets for the C&D sector in Wales, with a focus on reducing their reliance on products and materials with a high ecological footprint. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill. record-setters" in C&D materials reduction and | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | | recovery | |
| **Sustainable Development Charter** | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Continue to raise awareness of the Sustainable Development Charter and encourage all businesses within the C&D sector community to sign up. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Sign up to the Sustainable Development Charter is mandatory for all public sector organisations, WGSBs, and any businesses receiving direct support from the Welsh Government or their delivery support organisations. Should be a requirement in all tenders issued by the Welsh Government. | Positive health impact on social capital and community cohesion and environment through the anticipated decrease in emissions to atmosphere and reduction in waste resulting in a decrease in movement of HGV waste vehicles | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill. record-setters" in C&D materials reduction and recovery | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |
| **Sustainability clauses for Government grants** | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Develop set of standard grant conditions to aid companies achieve the Towards Zero Waste reduction and recycling targets in relation to construction projects. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Award of grants is dependent on companies providing proof an active and accredited environmental management system which includes specific waste reduction and recycling targets in line with those set out in Towards Zero | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.cewales.org.uk/was |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | Waste. | | excavation waste sent to landfill. record-setters" in C&D materials reduction and recovery | te/tips-to-reduce-waste/ |
| **Education and guidance** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Development of guidance documents to include, but not limited to, 'By Products Definition' and the impact for Civil Engineering and Construction in relation to the reuse of soils and aggregates. Signpost construction companies to waste prevention guidance already available. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles. | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill "record-setters"[5] in C&D materials reduction and recovery[6] | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/publications/guidance_notes/index.html |
| Option 3: Beyond best practice - high level intervention. | Work with construction trade bodies and CIWM to develop accredited waste management training courses aimed specifically at the construction and demolition sector. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles. | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill "record-setters"[7] in C&D materials reduction and recovery[8] | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/publications/guidance_notes/index.html |
| **Reuse** | | | | |
| **Welsh Government directed support for SMEs to reuse surplus materials** | | | | |

[5] http://www.ilsr.org/recycling/recordsetters/index.html
[6] http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_10-2-2009-10-36-36
[7] http://www.ilsr.org/recycling/recordsetters/index.html
[8] http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_10-2-2009-10-36-36

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Option 1: Business as usual | No provision of direct support for SMEs to reuse surplus materials. | No effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Through Constructing Excellence in Wales, continue to provide, develop and raise awareness of the internet platform for advertising surplus materials for re-use. | Positive health impact on the economy and employment through creation of new business opportunities. | Workshops and exhibitions to show how the site works and encourage people to use it.<br>Introduce at trade fairs, and training colleges. Get endorsement from large and small firms to increase site traffic. | http://builderscrap.com/searches?location_id=9&page=3&query=<br>http://www.cewales.org.uk/cew/wp-content/uploads/Presentation19.pdf |
| Option 3: Beyond best practice - high level intervention. | Develop the internet platform to enable collection of data on reuse of specific priority materials. Expand the site to allow use by reclamation companies. Make it a mandatory requirement that construction companies working on public sector construction projects register with the service, as a requirement of contract. | 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. | http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html |
| **Infrastructure to support the reuse of surplus materials for community benefit** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Investigate feasibility of establishing a surplus centre to receive donated surplus construction materials and redistribute them to community projects and schemes for reuse. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Develop a network of surplus centres across Wales and explore the potential for a voluntary agreement with builders merchants and construction companies in Wales to donate surplus supplies to these centres. Make it a mandatory requirement that construction companies working on public sector construction projects register with the service, as a | Positive health impact upon economy and employment through increased resource efficiency a through recovered/ recycled construction materials.<br>Positive health impact on economy and employment and through creation of new business opportunities.<br>Potential negative health impact on environment from noise and air quality | Ensure that surplus centre sites are situated away from residential properties and that dust control measures are in place. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/<br>http://www.cewales.org.uk/cew/wp-content/uploads/Presentation19.pdf<br>UK waste industry reported between 4,100 to 4,300 accidents per year, with overall |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | requirement of contract. | issues from dust produced at surplus centre sites.<br>Negative health impact on transport and connectivity with increased traffic at surplus centre sites.<br>Negative health impact on economy and employment through health and safety issues where suitable handling provisions are not created for small scale constrained sites.<br>Negative impact on the environmental where dust produced from surplus centre sites may have adverse affect on air quality.<br>Negative impact upon employment and economy where a projected increase in the recycling industry could result in an increase in workplace accidents. | | accident rates at four times the national average; around 2,500 per 100,000 workers9<br>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[10] |
| **Moving the use of demolition wastes up the waste hierarchy** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Environment Agency and Constructing Excellence in Wales to work together to investigate how extensive the use of waste exemptions is within the construction and demolition sector, and how to encourage options higher up the waste hierarchy. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Review and revision of Environmental Permitting Regulations waste exemptions to encourage options higher up the waste hierarchy. | Uncertain | | |

[9] Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

[10] 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,

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| **Preparation for reuse** | | | | |
| **Encouraging a reclamation led approach** | | | | |
| Option 1: Business as usual | No action taken | | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Constructing Excellence Wales to promote the consideration by construction companies of the deconstruction and demolition of a building at the design and building stages, including the techniques and materials that can be employed which would enable the easier extraction and reuse in the longer term. | Positive health impact upon economy and employment through increased resource efficiency.. | Create innovative opportunities for joint ventures between waste management and construction companies to offer new bespoke deconstruction and demolition designs. | http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html |
| Option 3: Beyond best practice - high level intervention. | Mandatory requirement in public sector construction procurement contracts for the deconstruction and demolition of a building to be addressed at the design and building stages, including the techniques and materials that can be employed which would enable the easier extraction and reuse in the longer term. | Positive health impact upon economy and employment through increased resource efficiency. | Create innovative opportunities for joint ventures between waste management and construction companies to offer new bespoke deconstruction and demolition designs. | http://aggregain.wrap.org.uk/demolition/the_ice_demolition_protocol/index.html |
| **Encouraging the implementation of the Demolition Protocol** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Raise awareness of the protocol through Constructing Excellence in Wales' work with the C&D sector. Work with Value Wales to include the protocol as a condition for public sector tenders. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Demolition Protocol to be developed into an accredited standard. | Uncertain | | |
| **Preparation of pre-refurbishment survey** | | | | |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | CEW will work with the Housing Information Group develop and disseminate benchmarks for resource efficiency and waste minimisation for WHQS works. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | All contractors working with local authorities and housing associations are required as part of the contract to monitor and report on waste arisings. All such works will also require a Site Waste Management Plan, regardless of whether they fall under the definition of project set out by the Regulations. | Uncertain | | |
| **Further develop the role of the Third Sector in preparing for reuse** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Continue discussions with the social enterprise sector and local government to explore support options for the establishment of more extensive reuse and repair networks. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Wales-wide network of Third sector reuse and repair projects / organisations established through Welsh Government funding support. All projects / organisations are included in public sector procurement frameworks. | Uncertain | | |
| **Recycling** | | | | |
| **International Panel on Sustainable Resource Management** | | | | |
| **EU Thematic Strategy on Waste Prevention and Recycling** | | | | |
| **European PVC Industry Initiative** | | | | |
| **European Standards for concrete, cements, aggregates and concrete repair** | | | | |
| **Transposition of the Waste Framework Directive** | | | | |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| **Consultation on increasing recycling targets under Producer Responsibility Obligations (Packaging Waste) Regulations** | | | | |
| Option 1: Business as usual | No consultation undertaken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Welsh Government, Defra and the Scottish Government consult on increased recycling targets on packaging producers from 2013 to 2017. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Recycling targets on packaging producers from 2013 to 2017 to increase further. | 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. Adverse health impacts upon economy and employment through commercial competition from EU suppliers who comply with Regulations to a minimum standard with reduced packaging costs. | Review target performance against threat from EU competition. | In 2007 the UK imported £12 Bn of building materials and only exported £6 Bn.[115] |
| **Encouraging use of alternative substitutes for aggregates** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | The Welsh Government will work, through CEW, to encourage the use of alternative, lower carbon embodied materials as substitute for aggregate. | Uncertain | | |

[11] Monthly Statistics of Building Materials and Components, BERR, No 405, 2008

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Option 3: Beyond best practice - high level intervention. | Introduce a statutory ban on the use of glass and other high embodied recyclable materials as substitute for aggregates in Wales. | Positive health impact on economy and employment and through creation of new business opportunities.<br>Negative impact on the environmental where noise and dust produced from recycled aggregate may have adverse affect on air quality and amenity. | Ensure that recycled aggregate sites are situated away from residential properties and that dust control measures are in place. | 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 outcomes12<br>http://www.cewales.org.uk/waste/tips-to-reduce-waste/<br>http://www.cewales.org.uk/cew/wp-content/uploads/Presentation19.pdf |
| **Environment Agency's Cement Sector** | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Environment Agency asked to explore the potential for the cement sector plan to act as a mechanism to increase the use of recyclable materials (as aggregates) and other wastes (as fuel) within cement process. | Positive health impact on economy and employment and through creation of new business opportunities.<br>Potential negative health impact on environment from noise and air quality issues from dust produced at recycling sites.<br>Negative health impact on transport and connectivity with increased traffic at local recycling sites.<br>Negative health impact on economy and employment through health and safety issues where suitable handling provisions are not created for small scale | Ensure that sites are situated away from residential properties and that dust control measures are in place. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/<br>http://www.cewales.org.uk/cew/wp-content/uploads/Presentation19.pdf<br>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 workers13<br>Unemployed more likely than employed people to visit |

[12] 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,

[13] Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | constrained sites.<br>Negative impact upon employment and economy where a projected increase in the recycling industry could result in an increase in workplace accidents. | | physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes14 |
| Option 3: Beyond best practice - high level intervention. | Work with the cement industry to set mandatory targets for % of recyclable materials used as aggregates and other waste used as fuel within the cement process. | Negative impact on environment and social cohesion through increased emissions to air from use of waste as fuel.<br>Positive health impact on economy and employment and through creation of new business opportunities.<br>Potential negative health impact on environment from noise and air quality issues from dust produced at recycling sites.<br>Negative health impact on transport and connectivity with increased traffic at local recycling sites.<br>Negative health impact on economy and employment through health and safety issues where suitable handling provisions are not created for small scale constrained sites.<br>Negative impact upon employment and economy where a projected increase in the recycling industry could result in an increase in workplace accidents. | Compliance with EU Waste incineration emissions Directive standards is required.<br>Ensure that sites are situated away from residential properties and that dust control measures are in place. | Cement kilns have lower regulatory standards than incinerators.<br>'Sector report for the cement industry', Environment Agency 2005.<br>http://europa.eu/legislation_summaries/environment/waste_management/l28072_en.htm<br>http://www.cewales.org.uk/waste/tips-to-reduce-waste/<br>http://www.cewales.org.uk/cew/wp-content/uploads/Presentation19.pdf<br>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 workers15<br>Unemployed more likely than employed people to visit |

[14] 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,

[15] Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | | | physicians, take medications or be admitted to general hospitals. Strong, positive association between unemployment and adverse health outcomes16 |
| **Waste Protocols Project** - The Welsh Government wishes to ensure that the relevant waste protocols are promoted within the construction & demolition sector community, to improve the quality of recycled materials available and to make better use of waste as a resource | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Waste quality protocols relevant to the C&D sector are promoted to improve the quality of recycled materials available and to make better use of waste as a resource. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | The Welsh Government will fund the identification and development of waste quality protocols for waste materials which haven't yet been considered. | Uncertain | | |
| **Legislation to introduce Site Waste Management Plans** - The purpose of a SWMP in relation to preparation for reuse and recycling is to ensure that:<br>• Recycling and re-use of materials, reduce demand for primary materials and increase take-up of secondary/recycled C&D materials;<br>• Building materials are managed efficiently, and<br>• Waste is disposed of legally | | | | |
| Option 1: Business as usual | Legislation isn't introduced & SWMP's remain voluntary. | Uncertain | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Legislation is introduced - SWMP's become a mandatory requirement for specified construction projects. | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a | Ensure that small businesses are included in the developing SWMPs. Create opportunities for small businesses. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/<br><br>SWMPs are mandatory in England for works over £300,000[17] |

[16] 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,

[17] http://www.netregs.gov.uk/netregs/businesses/construction/62359.aspx

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | larger benefit upon wider social cohesion and economy. | | |
| Option 3: Beyond best practice - high level intervention. | Welsh Government seeks changes to primary legislation to give further powers to specify content of SWMP's, including a requirement to follow the waste hierarchy and for SWMPs to also address the design stage. To include a requirement to report on the implementation of the plan. | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.<br>Positive health impact on social capital through the reduction in crime from reduced fly tipping. | Potentially positive: provided that SWMP's are audited.<br>Enable small businesses to receive specific training and support. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |
| **Legislation to introduce a charging scheme for Site Waste Management Plans** | | | | |
| Option 1: Business as usual | Legislation isn't introduced & SWMP's remain voluntary. | Uncertain | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Legislation is introduced - SWMP's become a mandatory requirement for specified construction projects. | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.<br>Negative health impact upon economy and employment through enforcement and financial penalties of small/ less prepared construction companies who failed to implement SWMPs. | Ensure that small businesses are included in the developing SWMPs. Create opportunities for small businesses. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/<br>SWMPs are mandatory in England for works over £300,000[18] |
| Option 3: Beyond best practice - high level intervention. | Welsh Government seeks changes to the Waste Measure to give further powers to | Positive health impact upon economy and employment through increased resource | Potentially positive: provided | http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |

[18] http://www.netregs.gov.uk/netregs/businesses/construction/62359.aspx

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | specify content of SWMP's. | efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.<br>Positive health impact on social capital through the reduction in crime from reduced fly tipping.<br>Negative health impact upon economy and employment through enforcement and financial penalties of small/ less prepared construction companies who failed to implement SWMPs. | that SWMP's are audited.<br>Enable small businesses to receive specific training and support. | |
| **Consideration of extended producer responsibility** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | The Welsh Government will seek a voluntary approach to extended producer responsibility. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | The Welsh Government introduces extended producer responsibility legislation with the aim of delivering a life cycle approach to building development, resulting in more recycling. | 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.<br>Potential positive impact on health through improved air quality.<br><br>Risk that the projected increase in the recycling industry could result in an increase in workplace accidents. | | Reduction in releases from waste processing facilities, incineration/ landfill. Reduction in exposure emissions from energy.<br><br>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[19]. |

[19] Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | | Opportunity to draw links between improved air quality and recycling.<br><br>Improve safety within the recycling industry | Refuse collection is the highest risk activity in the waste industry[20] |
| **Public procurement** | | | | |
| Option 1: Business as usual | Legislation isn't introduced & SWMP's remain voluntary. | Uncertain | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Legislation is introduced - SWMP's become a mandatory requirement for specified construction projects. | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.<br>Positive health impact on social capital through the reduction in crime from reduced fly tipping. | Potentially positive: provided that SWMP's are audited.<br>Enable small businesses to receive specific training and support. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |
| Option 3: Beyond best practice - high level intervention. | Welsh Government seeks changes to primary legislation to give further powers to specify content of SWMP's, including a requirement to follow the waste hierarchy and for SWMPs to also address the design stage. To include a requirement to report on the implementation of the plan. | Positive health impact upon economy and employment through increased resource efficiency.<br>Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy.<br>Positive health impact on social capital | Potentially positive: provided that SWMP's are audited.<br>Enable small businesses to receive specific training and support. | http://www.cewales.org.uk/waste/tips-to-reduce-waste/ |

[20] Update to mapping health and safety standards in the UK waste industry, HSE, 2009

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | through the reduction in crime from reduced fly tipping. | | |
| **Review construction related procurement guidance for the private sector** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | The Welsh Government will seek a voluntary approach to extended producer responsibility. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | The Welsh Government introduces extended producer responsibility legislation with the aim of delivering a life cycle approach to building development, resulting in more recycling. | 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.<br><br>Risk that the projected increase in the recycling industry could result in an increase in workplace accidents. | Opportunity to draw links between improved air quality and recycling.<br><br>Improve safety within the recycling industry | Reduction in releases from waste processing facilities, incineration/ landfill. Reduction in exposure emissions from energy.<br><br>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[21]. Refuse collection is the highest risk activity in the waste industry[22] |
| **Increasing recycled content of products and materials used in Government funded projects** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). | Welsh Government to review the success of the 10% recycled content target for | Uncertain | | |

[21] Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009
[22] Update to mapping health and safety standards in the UK waste industry, HSE, 2009

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Medium level intervention. | building materials and products promoted or supported by the WG or WGSBs. | | | |
| Option 3: Beyond best practice - high level intervention. | Target for recycled content of products and materials used in Government funded projects is increased. | Uncertain | | |
| **Working with product manufacturers to increase recyclability of products** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Work with manufacturers to develop products which are more sustainable throughout their lifetime. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Develop a list of accredited sustainable construction products and materials which would be included in the BREEAM standard. Mandate their use in public sector construction projects. | Positive health impact upon economy and employment through increased resourcing of recovered and sustainable materials sourced in the UK.<br>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 green label. Help businesses to identify sustainable label materials and source them easily<br>At present, the construction industry purchasers 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. [iii] [23] | http://www.uniformreuse.co.uk/pdf/product_labelling_for_eol_management.pdf (Page 18)<br>Existing labelling standards ISO 14020, ISO 14021, ISO 14024,<br>Sustainable supply network management techniques (Young and Kielkiewicz-Young (2001)) |
| **Working with product manufacturers to increase recycled content** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). | Welsh Government to review the success of the 10% recycled content target for | Uncertain | | |

[23] COBRA The International Construction Research Conference of the Royal Institution of Chartered Surveyors 7-8th September 2004

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Medium level intervention. | building materials and products promoted or supported by the WG or WGSBs. | | | |
| Option 3: Beyond best practice - high level intervention. | Target for recycled content of products and materials used in Government funded projects is increased. | Uncertain | | |
| **Assessing the current use of secondary aggregates in Wales** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | The Welsh Government will work with partners to develop a new survey. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Make reporting of secondary aggregate use a mandatory requirement in Wales. | Uncertain | | |
| **Mandatory provision of a separate collection for paper, metal, plastic and glass** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Implement the regulations to ensure that local authorities and waste companies set up separate collection schemes for paper, glass, metal and plastic from 1 January 2015 onwards. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles. | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill "record-setters"[24] in C&D materials reduction and recovery[25] | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/publications/guidance_notes/index.html |
| Option 3: Beyond best practice - high level intervention. | Implement the regulations to ensure that local authorities and waste companies set up separate collection schemes for paper, glass, metal and plastic from 1 January 2015 onwards. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles. | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.wrap.org.uk/local_a |

[24] http://www.ilsr.org/recycling/recordsetters/index.html
[25] http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_10-2-2009-10-36-36

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | | excavation waste sent to landfill "record-setters"[26] in C&D materials reduction and recovery[27] | uthorities/support_funding/trade_waste_recycling/publications/guidance_notes/index.html |
| **Potential interventions to secure greater source segregation of recyclable materials** | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Study commissioned to consider instruments that could facilitate businesses to recycle waste. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Requirement placed on waste producers to keep recyclable materials separate at source to facilitate collection. Introduce landfill bans for specific materials. Introduce energy-from-waste bans for specific materials. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles. | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill "record-setters"[28] in C&D materials reduction and recovery[29] | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/publications/guidance_notes/index.html |
| **Development of Trade Waste Bring Sites** | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | CEW to work in conjunction with Environment Agency Wales to establish a pilot TWBS to trial the concept over a 6 month period. | Positive health impact upon social capital and environment through the reduction of fly tipping.<br>Negative health impact upon environment resulting from an increase in traffic movement around TWBS.<br>Negative health impact upon social capital through the increased risk of health and | TWBS not to handle hazardous waste.<br>TWBS sites should be located in existing industrial trading estates to reduce loss of amenity of neighbours.<br>Pedestrian areas and vehicles need to be kept separate to | http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/local_authority_projects/case_studies/trade_bring_sites/<br>http://www.wrap.org.uk/downloads/Setting_up_a_bring_site.4377be54.8724.pdf |

[26] http://www.ilsr.org/recycling/recordsetters/index.html
[27] http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_10-2-2009-10-36-36
[28] http://www.ilsr.org/recycling/recordsetters/index.html
[29] http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_10-2-2009-10-36-36

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | safety issues with both bulky items and hazardous materials.<br>Potential negative health impact upon economy through the risk that there is a projected increase in workplace accidents.<br>Potential negative health impact upon economy through the increased risk of health impact of dust from the movement of dust from construction materials. | avoid collisions with vehicles.<br>TWBS operators must adhere to a strict H&S regime, with a 'zero harm' culture. | http://www.environment-agency.gov.uk/research/library/data/97400.aspx<br>http://www.wrap.org.uk/downloads/Lessons_learnt_-_how_to_set_up_a_trade_bring_site.0f30c510.8694.pdf<br>http://www.wrap.org.uk/downloads/Bath_and_North_East_Somerset_Council.882dbdeb.8693.pdf<br>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[30]<br>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[31] |
| Option 3: Beyond best practice - high level intervention. | Establish a network of Trade Waste Bring Sites across Wales. | Positive health impact upon social capital and environment through the reduction of fly tipping.<br>Negative health impact upon environment resulting from an increase in traffic | TWBS not to handle hazardous waste.<br>TWBS sites should be located in existing industrial trading estates to reduce loss of | http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/local_authority_projects/case_studies/trade_bring_sites/ |

[30] Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

[31] 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,

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | movement around TWBS.<br>Potential negative health impact upon economy through the risk that there is a projected increase in workplace accidents.<br>Potential negative health impact upon economy through the increased risk of health impact of dust from the movement of dust from construction materials.<br>Potential negative health impact upon economy through the increased risk of health impact of dust from the movement of dust from construction materials.<br>Risk that the projected increase in the recycling industry could result in an increase in workplace accidents. | amenity of neighbours.<br>Pedestrian areas and vehicles need to be kept separate to avoid collisions with vehicles.<br>TWBS operators must adhere to a strict H&S regime, with a 'zero harm' culture. | http://www.wrap.org.uk/downloads/Setting_up_a_bring_site.4377be54.8724.pdf<br>http://www.environment-agency.gov.uk/research/library/data/97400.aspx<br>http://www.wrap.org.uk/downloads/Lessons_learnt_-_how_to_set_up_a_trade_bring_site.0f30c510.8694.pdf<br>http://www.wrap.org.uk/downloads/Bath_and_North_East_Somerset_Council.882dbdeb.8693.pdf<br>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[32]<br>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[33] |
| **Reporting on recycling performance by expanding the network of Waste Management Organisations inspected to PAS402:2009 via Green Compass Scheme** | | | | |
| Option 1: Business as usual | Existing ad hoc approach continues. | Uncertain | | |
| Option 2: As proposed in the | Local Authorities encouraged to allow all | Uncertain | | |

[32] Recycling and Health the Evidence - Health of Workers in the Recycling Industry, 2009

[33] 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,

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Sector Plan (best practice). Medium level intervention. | their CA sites to be used by businesses to deposit their recyclate. WRAP to provide advice to Local Authorities. | | | |
| Option 3: Beyond best practice - high level intervention. | Mandatory requirement for Local Authorities to allow all their CA sites to be used by businesses to deposit their recyclate. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates.<br><br>Negative impact on the environment through increased emissions from vehicle movements around CA sites.. | WRAP (Waste & Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill "record-setters"[34] in C&D materials reduction and recovery[35] | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf<br><br>http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/publications/guidance_notes/index.html |
| **Support for the improvement of the recycling** | | | | |
| Option 1: Business as usual | Do not continue existing grant support schemes. | Uncertain | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Existing support mechanisms maintained and promoted more widely. New WRAP Convergence project to support recycling businesses. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Additional funding support provided beyond current provisions. | Uncertain | | |
| **Allowing businesses to use household waste recycling centres (for recyclate only)** | | | | |
| Option 1: Business as usual | Existing ad hoc approach continues. | Uncertain | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Local Authorities encouraged to allow all their CA sites to be used by businesses to deposit their recyclate. WRAP to provide advice to Local Authorities. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Mandatory requirement for Local Authorities to allow all their CA sites to be used by businesses to deposit their | Positive health impact on social capital and community cohesion and environment through the anticipated increase in | WRAP (Waste & Resources Action Programme) voluntary agreement through which | http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North |

[34] http://www.ilsr.org/recycling/recordsetters/index.html
[35] http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_10-2-2009-10-36-36

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | recyclate. | recycling rates.<br><br>Negative impact on the environment through increased emissions from vehicle movements around CA sites.. | organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill "record-setters"[36] in C&D materials reduction and recovery[37] | h_Wales.pdf<br><br>http://www.wrap.org.uk/local_authorities/support_funding/trade_waste_recycling/publications/guidance_notes/index.html |
| **Increasing the role of design for recycling** | | | | |
| Option 1: Business as usual | No action taken | No effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Ecodesign Centre to work with designers/architects to design for the end-of-life of the building. CEW to work to raise awareness of the importance of designing for end-of-life. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | Increase scoring for reducing waste and using recycled materials.[38][39] | |
| Option 3: Beyond best practice - high level intervention. | All Welsh Government funded construction projects to be designed to specified end-of-life standards. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | Increase scoring for reducing waste and using recycled materials.[40][41]<br>Create new opportunities for knowledge sharing between BREEAM and CEEQUAL practitioners. | |
| **Ecodesign of products** | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | CEW and EDC to work with manufacturers and retailers to seek new opportunities for ecodesign of construction products and materials in Wales. | Uncertain | | |

[36] http://www.ilsr.org/recycling/recordsetters/index.html
[37] http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_10-2-2009-10-36-36
[38] http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf
[39] CEEQUAL Assessment Manual Projects in UK & Ireland (Page 72 – 91)
[40] http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf
[41] CEEQUAL Assessment Manual Projects in UK & Ireland (Page 72 – 91)

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Option 3: Beyond best practice - high level intervention. | Mandatory requirement for eco-design on construction products used in Wales. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | Increase scoring for reducing waste and using recycled materials.[42][43]<br>Create new opportunities for knowledge sharing between BREEAM and CEEQUAL practitioners. | |
| **Increasing awareness and behaviour change towards** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Extend the awareness raising and behaviour change campaign on the benefits of recycling within the C&D sector. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Recycling and its benefits to be included in relevant Continuous Professional Development courses through recognised C&D sector trade associations. Work with CIWM to develop sector specific competency schemes. | Indirect positive health impact upon social capital and community cohesion through educated workforce, education having a larger benefit upon wider social cohesion and economy. | | |
| **Support for construction and demolition** | | | | |
| Option 1: Business as usual | No support provided | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | CEW to provide packages of work to raise awareness of waste issues within the C&D sector and research a variety of technology and infrastructure options to aid the sector in meeting TZW targets. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Statutory guidance on recycling within the C&D sector produced, the use of which is mandatory for all public sector | Positive health impact on social capital and community cohesion and environment through the anticipated increase in | Increase scoring for reducing waste and using recycled materials.[44][45] | |

[42] http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf
[43] CEEQUAL Assessment Manual Projects in UK & Ireland (Page 72 – 91)
[44] http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf
[45] CEEQUAL Assessment Manual Projects in UK & Ireland (Page 72 – 91)

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | construction projects. | recycling rates and the reduction in movement of HGV waste vehicles | Create new opportunities for knowledge sharing between BREEAM and CEEQUAL practitioners. | |
| **Increase awareness of using recycled and reused products** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | WAW to initiate awareness campaign to encourage companies to value existing items more and for clients to be encouraged to use materials which have been used before. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Mandatory targets set for use of recycled and reused products within public sector construction projects. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | Increase scoring for reducing waste and using recycled materials.[46][47] Create new opportunities for knowledge sharing between BREEAM and CEEQUAL practitioners. | |
| **Green guide to building materials specification** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | CEW to co-ordinate available recycling best practice guidance, identify gaps and raise awareness of best available guidance. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Development of mandatory Green specification for all building products and designs used in public sector construction projects. | Positive health impact on social capital and community cohesion and environment through the anticipated increase in recycling rates and the reduction in movement of HGV waste vehicles | Increase scoring for reducing waste and using recycled materials.[48][49] Create new opportunities for knowledge sharing between | |

[46] http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf
[47] CEEQUAL Assessment Manual Projects in UK & Ireland (Page 72 – 91)
[48] http://www.constructingexcellence.org.uk/pdf/Wales/080304_CEEQUAL_presentation_North_Wales.pdf
[49] CEEQUAL Assessment Manual Projects in UK & Ireland (Page 72 – 91)

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| | | | BREEAM and CEEQUAL practitioners. | |
| **Other recovery and disposal** | | | | |
| Option 1: Business as usual | Landfill tax remains at current rate for the next few years. | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | CEW, WRAP, WAW etc to raise awareness of the landfill tax increase and the benefits of diverting from landfill through day-to-day work with businesses. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Landfill tax to continue to rise beyond 2015 and bans of materials such as biodegradable waste, wood, plastic etc to be introduced. | Negative impact on environment, social capital and community, as well as crime and safety through an increase in flytipping.<br><br>Positive impact on employment and economy through the promotion of new employment opportunities in the recycling and waste sectors. | Infrastructural investment and incentives required to improve on-site source segregation and reduced benefit of fly-tipping. | |
| **Consultation on the introduction of restriction on the landfilling of certain wastes** | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Welsh Government to keep issue of restriction of certain wastes to landfill under review. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Welsh Government implements ban on biodegradable waste and priority materials (wood, plastic, metals etc) to landfill. | Negative health impact upon environment and social capital resulting from loss of amenity as a result of increase in fly-tipping.<br><br>Positive impact on employment and economy through the promotion of new employment opportunities in the recycling and waste sectors. | Infrastructural investment and incentives required to improve on-site source segregation and reduced benefit of fly-tipping. | |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| **Biodegradable waste** | | | | |
| Option 1: Business as usual | No further action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Explore opportunities to increase recycling and reuse of C&D biodegradable waste; investigate alternative methods of handling C&D biodegradable wastes; undertake research into restricting C&D biodegradable waste from landfill. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | All C&D biodegradable waste to be banned from landfill. 50% of all C&D biodegradable waste to be reused or recycled by 2020 with remainder being sent to energy from waste. | Negative health impact upon environment and social capital resulting from loss of amenity as a result of increase in fly-tipping.<br><br>Positive impact on employment and economy through the promotion of new employment opportunities in the recycling and waste sectors. | Infrastructural investment and incentives required to improve on-site source segregation and reduced benefit of fly-tipping. | |
| **Energy from waste for "difficult" Wastes** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Welsh Government to support the development of appropriate energy from waste routes for separated wastes where this is the best practicable environmental option. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Mandatory requirement on the construction and demolition sector to divert all suitable non-recyclable materials from landfill to energy from waste | Negative impact on environment through increased emissions to air from combustion of inappropriate residue waste. | Pre-sort waste to exclude waste with high potential of toxic emissions. | |
| **Potential abuse of waste** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the | Environment Agency to review the use of | Uncertain | | |

| Options | Actions | Health Impact | Recommendation | Evidence |
|---|---|---|---|---|
| Sector Plan (best practice). Medium level intervention. | exemptions within the C&D sector and identify whether any actions are required to prevent abuse. | | | |
| Option 3: Beyond best practice - high level intervention. | All C&D companies and waste management companies receiving C&D waste currently working under exemptions, required to register with the Green Compass Scheme and provide data of waste used / treated / stored under the exemption on a quarterly basis. | Uncertain | | |
| **Tackling the fly-tipping of construction and demolition waste** | | | | |
| Option 1: Business as usual | No action taken | No Effect | | |
| Option 2: As proposed in the Sector Plan (best practice). Medium level intervention. | Welsh Government to continue to support Fly-tipping Action Wales and work with the partners to tackle issues specific to C&D waste. | Uncertain | | |
| Option 3: Beyond best practice - high level intervention. | Enhanced funding for a greater level of intelligence gathering on fly-tipping activity, over a wider geographic area. | Positive impact on environment, social capital and community cohesion as well as crime and safety. | | |