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Non-statutory guidance for site waste management plans

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1. Introduction

This guidance is for anyone planning and/or carrying out construction work and for officials monitoring compliance with Site Waste Management Plans (SWMPs). It explains the purpose behind the plans, the legal duty to write and implement one and how, by completing one, construction project costs can be significantly cut. Above all it demonstrates that SWMPs are only part of the story; that by addressing materials resource efficiency at the earliest stage in the design process savings can be maximised and construction made more sustainable.

1.1 The purpose of SWMPs

SWMPs aim to address two key issues:

1. **improving materials resource efficiency**, by promoting the economic use of construction materials and methods so that waste is minimised and any waste that is produced can be re-used, recycled or recovered in other ways before disposal options are explored; and

2. **reducing fly-tipping**, by restricting the opportunities available for the illegal disposal of waste by ensuring compliance with existing legal controls and providing a full audit trail of any waste that is removed from the construction site.

Although it is a legal requirement to write and implement a SWMP, the greatest cost savings are likely to be achieved as a result of the consideration of materials resource efficiency which will be a necessary part of the preparation, before the SWMP is drafted. The flowchart below shows how this might work during the various stages in a construction project.

1.2 For the client and construction industry

As a client, you will need a SWMP if the construction work you are planning will cost more than £300,000. SWMPs can save you money, but only if you use them to challenge the way you use your resources. By thinking about minimising waste from the outset you can save money on materials, disposal costs and labour and make a real difference to your bottom line. They should also make tracking your waste more straightforward as you will keep or log all waste paperwork in one document. This will help you to comply with the waste duty of care and reduce the risk of fly-tipping. Details of how to write and implement a plan are given in **Part 2** of this guide. Advice on improving materials resource efficiency and securing greater savings through the SWMP process is provided in **Part 4**.

1.3 For the regulator

Although SWMPs will save the construction industry money it is important to ensure that all projects produce suitable plans to maintain a level playing field. As well as minimising waste, SWMPs will record how waste is disposed of, re-used, recycled or recovered in other ways. Recovery or disposal must be in compliance with the waste management licensing system, the waste duty of care and waste carrier legislation, and it is expected that SWMPs will help to improve awareness and compliance with these existing legal provisions. SWMPs should thereby reduce the amount of construction and demolition waste that is illegally dumped or fly-tipped, resulting in cost savings to local authorities, the Environment Agency and landowners in clearing and investigating illegal waste activity. **Part 3** of this guide provides information on enforcement responsibilities and recommended practices.

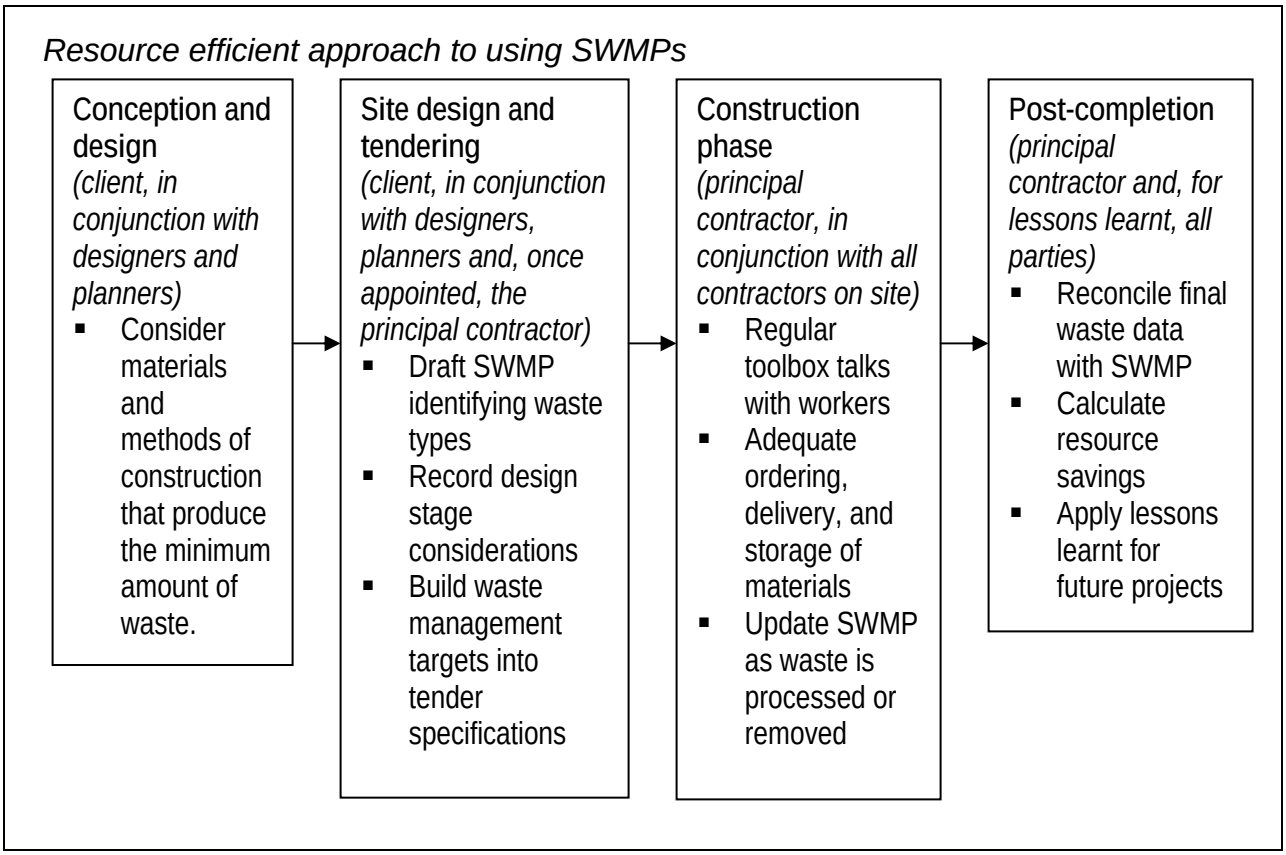
1.4 Do SWMPs apply to all demolition and excavation work?

SWMPs apply to all aspects of construction work including preparatory work such as demolition and excavation. They are required for civil engineering and engineering projects as well as projects involving the maintenance, alteration and decoration of existing structures. The installation, maintenance or removal of all related services such as electrical, gas, water, sewage and telecommunications are also subject to this requirement. Routine maintenance operations such as gully cleaning or grass cutting, as opposed to maintenance of a structure, do not fall within this scope. A full description of the range of activities to which this measure applies is provided in the SWMP Regulations.

1.5 Exclusions

The SWMP Regulations do not apply to construction works taking place at a Part A installation under the Environmental Permitting (England and Wales) Regulations 2007 since these sites must already meet pollution prevention controls that include waste minimisation.

Where a nuclear licensed site has an Integrated Waste Strategy (IWS) in place that includes waste from construction activities, a separate SWMP is not required, provided that all the obligations set out in the SWMP Regulations are included in the strategy and its supporting documents.



2. How to write and implement a SWMP

2.1 Your legal duty

The requirement to prepare, update and implement a SWMP is set out in the Site Waste Management Plans Regulations 2008 *(SI 2008 no.314 http://www.opsi.gov.uk/si/si2008/uksi_20080314_en_1)* which came into effect on 6 April 2008. In accordance with these Regulations any client intending to carry out a construction project on one site[1] with an estimated cost greater than £300,000 must, before work begins, prepare a SWMP. Under the transitional arrangements, if a project is planned before 6 April 2008 and the construction work begins before 1 July 2008 then the requirement to prepare and implement a plan does not apply. Evidence of a 'planned project' may include planning consent, building regulations approval or relevant contract documents.

The cost of the construction project is the price agreed by the contractor and the client in the accepted tender. If there is no tender, the cost must include labour, plant and materials, overheads and profit, but VAT is excluded (cost of

[1] There is no legal requirement for a project of contract value greater than £300,000 but undertaken over multiple sites (clearly geographically separate) to undertake a SWMP although the client/contractor may decide that it is in their interests to do so.

consultants need not be included). Standard costings for these different elements are readily available from sources such as the British Cost Information Service (BCIS). Since the plan must be in place before work begins, if the cost of the project is less than £300,000 at the start, but subsequently increases, there is no legal requirement to produce one retrospectively. However, as a tool for minimising waste and ensuring compliance with the waste controls, construction companies may find it helpful to use the SWMP process to manage later changes to the project, especially where this affects the use of materials or handling of waste on-site.

The plan must be implemented and then updated as construction proceeds, with a greater level of detail for projects that cost more than £500,000. All waste transactions must be recorded or referenced in the plan to prevent the likelihood of fly-tipping. Finally, once the project is completed, the plan should be reviewed and must record the reason for any deviation from the planned arrangements.

An example Site Waste Management Plan template is provided at Annex A. However, as long as all the information requirements in the Regulations are included, the layout of the plan can be varied to suit existing site management records. For example, some of the required information may already be held in other documents such as the health and safety file. Such information may simply be 'cut and paste' across, otherwise copied into, or adequately referenced in, the SWMP.

In the plan you will need to describe a set of waste management estimates against which you will compare performance as the construction project progresses. First you will need to forecast how much waste is likely to be produced on site and then for each **type of waste** (see box below), the proportion that will be re-used or recycled on site, or removed from the construction site for re-use, recycling, recovery or disposal elsewhere.

Types of waste

"Waste" is defined in Article 1(1)(a) of the Waste Framework Directive (2006/12/EC) and means "..any substance or object…which the holder discards or intends or is required to discard". All waste that falls within the scope of this definition should be recorded in the Site Waste Management Plan. "Holder" means "the producer of the waste or the natural or legal person who is in possession of it". It rests, in the first place, with the producer or holder of a substance or object to decide whether it is being discarded and is waste. There is now a substantial body of case law by the European Court of Justice (ECJ) on the interpretation of the definition of waste and the meaning of "discard". A summary of the ECJ's judgments on the definition of waste is available on Defra's website at http://www.defra.gov.uk/environment/waste/topics/pdf/ecj-definition.pdf.

In a Site Waste Management Plan, as a minimum, you will need to classify any waste produced on the site as either **inert, non-hazardous**, or **hazardous**[2].

Hazardous waste
If the construction project is producing hazardous waste, before allowing any waste to be removed you must first notify the Environment Agency that you are a hazardous waste producer. For additional guidance on handling hazardous waste, please go to section 6.1 below.

During the construction phase the principal contractor must update the plan as waste is disposed of, re-used, recycled, or otherwise recovered. In this way the SWMP should become a 'living' document that describes the current state of progress against the waste management forecasts contained in the plan.

When waste is removed from the site you, as principal contractor, must show in the SWMP that you are complying with the waste management licensing, waste duty of care and waste carrier registration regimes. The duty of care requires you to take care of your waste while it is in your control, check that the person to whom you give your waste is authorised to receive it, complete, exchange and keep waste transfer notes when the waste is handed over and take all reasonable steps to prevent unauthorised handling or disposal by others. For higher cost projects, all registration and waste transfer documents should be kept in the SWMP or referenced in the plan.

Persons authorised to remove or receive waste may include council waste collectors, registered waste carriers, holders of a waste management licence or pollution prevention and control permit or holders of an exemption from the need for such a licence or permit. Checks should be carried out on sub-contractors before they come on-site to ensure they are legally compliant.

Waste duty of care

The waste Duty of Care is a legal requirement under Section 34 of the Environmental Protection Act 1990. Detailed requirements for waste transfer notes are set out in the Environmental Protection (Duty of Care) Regulations 1991. A guide to these duties entitled 'Waste Management – the Duty of Care Code of Practice' was published by the Government in March 1996 and is available on the Defra website www.defra.gov.uk

In order to secure longer term improvements in materials resource efficiency, you should review performance against the SWMP following completion of the project. For projects between £300,000 and £500,000 you should describe in the

[2] Hazardous waste is defined in Regulation 6 of the Hazardous Waste Regulations 2005 (SI 2005/894).

plan any deviation between the first draft of the SWMP and the final outcome. For projects that cost more than £500,000 a more detailed analysis is required, both confirming that the plan has been periodically updated, and calculating the difference between proposed waste management and actual performance. You should also estimate the cost savings that you have achieved through the SWMP process.

2.2 Who should write and implement a SWMP?

The client is responsible for ensuring that the plan is prepared before construction work begins. For many projects it will be appropriate for the designer to write the SWMP on behalf of the client, as this will assist in recording any decisions that have been taken at the design stage.

The plan should then be passed to the principal contractor, who must update it as work progresses and ensure that workers on the site are aware of the plan and co-operate with it. This will include providing suitable site induction, information and training. Contractors will in turn need to engage their employees and sub-contractors to ensure that any waste management objectives in the SWMP are understood and achieved.

The roles of client and principal contractor are already well-established in the Construction (Design and Management) Regulations 2007. It is the responsibility of the client to appoint a principal contractor for the purposes of the SWMP Regulations if one or more contractors are working on the project[3]. Where a project does not use a contractor, responsibility for updating the plan remains with the client.

It is important to remember that responsibility for compliance with the SWMP Regulations rests not solely with an individual but ultimately with the client or principal contractor company. If there is a change of personnel during the course of the project, the details of those responsible for the plan must be kept up-to-date.

Responsibility for carrying out the waste management tasks in the SWMP should fall to the relevant contractors and sub-contractors. Such tasks should be written into the terms of contracts to ensure understanding and accountability at all levels. This is consistent with recent changes in waste legislation that have removed the defence of acting under the instructions of an employer. It makes good business sense to make payments for waste disposal only when evidence of delivery to an authorised site has been provided. Periodic checks and audits will also help to minimise the risk of fly-tipping.
Although the principal contractor is responsible for updating the SWMP and ensuring compliance and co-operation amongst the workers, the client will

[3] Clients are, in any case, required to appoint a principal contractor for all notifiable projects under the CDM Regulations 2007.

continue to have a role in ensuring its effective implementation. The client must give any reasonable direction to contractors that is necessary to ensure compliance, for example, in setting contractual obligations. A SWMP needs to be a working document which is comprehensible to all users. As a result, it needs to be both accurate and clear.

Both the client and the principal contractor are responsible for reviewing, revising and refining the SWMP as necessary, in particular, to ensure that roles and responsibilities are clear as the project progresses. They must also ensure that adequate security measures are put in place to help avoid waste being disposed of illegally at the site.

2.3 What should be recorded in a SWMP?

A SWMP will need to forecast how much of each type of waste will be produced on site and how it will be managed. But before this, decisions may already have been taken on the design, construction method and materials that will reduce the amount of waste. Such decisions should be recorded in the plan before addressing the waste that cannot be avoided. For this residual waste, explore the options for reusing or recycling on-site before you consider any off-site possibilities for re-use, recycling, other types of recovery or disposal.

The plan also needs to identify the location of the site and the individuals responsible for preparing and implementing it. A summary of the details required in the first draft of the plan is set out below:

Responsibilities
1. The client
2. The principal contractor
3. The person who drafted the plan

Description of the Construction Works
4. The location of the construction site
5. The estimated cost of the project

Materials Resource Efficiency
6. Any decision taken before the SWMP was drafted to minimise the quantity of waste produced on site.

This statement should provide information on any consideration given to materials resource efficiency in designing and planning the construction. This may include design specifications, the choice of materials used or method of construction, such as pre-fabrication. Preliminary records of decisions taken on materials resource efficiency may begin at the earliest stages of the project, and copies of related documentation can be used to help complete this section of the SWMP.

Waste Management
7. Describe each waste type expected to be produced during the project
8. For each waste type estimate the quantity of waste that will be produced
9. For each waste type identify the waste management action proposed (including re-use, recycling, other types of recovery and disposal)

As a minimum the description of waste types should be recorded as inert, non-hazardous or hazardous, with further identification of individual waste streams allowing the proposed waste management route to be determined for each. The European Waste Catalogue system can assist with this process, and a table of the most common waste types generated on construction sites and their EWC codes is provided at Annex B. The quantity of waste should usually be specified either in m3 or tonnes. Tools are available to help in estimating waste volumes (see references in Part 4 of this document).

Proposed waste management actions

"Recovery" is defined in Article 1(1)(f) of the Waste Framework Directive (2006/12/EC) as meaning any of the operations provided for in Annex IIB to the Directive. However, the list in Annex IIB is not exhaustive and the ECJ has ruled that "…the essential characteristic of a waste recovery operation is that its principal objective is that the waste serve a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources". "Re-use" and "recycling" are forms of waste recovery.

"Disposal" is defined in Article 1(1)(e) of the Waste Framework Directive as meaning any of the operations provided for in Annex IIA to the Directive.

Waste Controls and Handling
10. A declaration that all waste produced on the site is dealt with in accordance with the waste duty of care.[4]
11. A declaration that materials will be handled efficiently and waste managed appropriately.

Both the client and principal contractor are specified in these declarations which must be written into the plan, confirming that both parties are responsible for ensuring the effective management and handling of materials and waste on site and that any waste disposal is carried out legitimately. Section 2.1 of this guidance outlines the requirements of the waste duty of care, and by completing the SWMP and following the recommendations and advice in this guidance, clients and principal contractors will be able to demonstrate that they have taken reasonable steps to ensure compliance.

[4] Section 34 of the Environmental Protection Act 1990 and the Duty of Care Regulations 1991.

Appropriate management of waste will include ensuring that other legislative requirements are complied with, in particular, the need to provide 'basic characterisation' of any wastes destined for landfill, proposals to meet the obligation for the pre-treatment of wastes prior to landfilling, securing any necessary waste management licences or exemptions, and compliance with the hazardous waste controls. Information about agreed practices for the handling and storage of materials should also be included in the plan.

Under landfill legislation each type of waste to be accepted at a landfill shall be characterised to ensure all information necessary for the safe disposal of the waste in the long tem is available. The information needed for basic characterisation includes, but is not limited to, the information that needs to be recorded on the waste description, including fulfilment of the Duty of Care. *[add link here to EPP Landfill Directive guidance when available].*

Also under the Landfill Directive only waste that is subject to treatment may be landfilled. Treatment means a physical, thermal, chemical or biological process, including sorting, that changes the characteristics of the waste in order to reduce its volume, or hazardous nature, facilitate its handling or enhance recovery. The treatment requirement may not apply to inert waste for which treatment is not technically feasible. *[Add link to EPP Landfill Directive Guidance once available].* The EA has also produced 'Your waste - your responsibility' guidance for businesses - see www.environment-agency.gov.uk

The requirements of the Hazardous Waste Regulations include the notification of premises producing hazardous waste to the Environment Agency, the completion of consignment notes to accompany the movement of the waste, the keeping of records and a prohibition on mixing waste. For additional guidance on hazardous waste, please go to section 6.1 below.

2.4 When should a SWMP be updated?

A SWMP should be updated as often as necessary to give a current picture of how work is progressing against the waste estimates contained in the plan. So for waste that is re-used or recycled on site, the SWMP should be updated to describe how much of the estimated volume or tonnage has been processed. For waste that is removed from the site the SWMP must be updated to record the identity of the person removing the waste, the type (and quantity) of waste and the site to which it has been taken.

For lower value projects between £300,000 and £500,000 you will only need to provide summary information, whereas for projects over £500,000 more detail will be required. The level of detail in SWMP updates for lower and higher cost projects is set out below:

Projects between £300,000 and £500,000

Whenever waste is removed from the site the principal contractor (or client, if there is no principal contractor) must record on the plan the identity of the person removing the waste, the type of waste and the site to which it is being taken. The 'person' will usually be the waste management contractor appointed to deal with that waste, and the name of the company should be recorded.

Projects over £500,000

For higher cost projects, whenever waste is removed from the site the principal contractor (or client, if there is no principal contractor) must record on the plan the identity of the person removing the waste, the waste carrier registration number of the waste carrier and a copy of, or reference to, the written description of the waste. The written description will either be a waste transfer note or for hazardous waste, a hazardous waste consignment note. The site that the waste is being taken to and whether it is a licensed or exempt site must also be recorded.

Further detail is then required on the actual waste management actions. The plan must be updated at least every 6 months to record the types and quantities of waste that are:

(i) re-used (and whether on or off-site)
(ii) re-cycled (and whether on or off-site)
(iii) sent for another form of recovery (and whether on or off-site)
(iv) sent to landfill
(v) otherwise disposed of

Figures on the amount of re-use and recycling, and whether this takes place on or off-site, should be provided wherever possible. Category (iii) should then be used to record waste that is sent for any other type of recovery, for example, this may include:

- physical sorting (where this results in recovery of one or more components of the sorted waste)
- chemical or biological treatment
- composting
- incineration with energy recovery
- remedial treatment of soil

Category (v) should be used for any other type of disposal, including burning without recovery and where it is not possible to record known quantities of mixed waste that are destined for options (i)-(iv).

If significant changes are made during the course of the project, or the plan requires substantial revision, the Regulations allow for a further plan to be produced.

2.5 What happens once the project is completed?

At the end of the project the completed SWMP with records of all waste management actions needs to be reconciled against what was planned before work began. Regular updating during the construction phase should make this a relatively straightforward process. This final review will also allow the construction company to identify where forecasts were exceeded or missed, and to learn lessons for the next project. Companies might also use this opportunity to estimate the level of cost savings achieved, and this is required for higher cost projects.

For projects between £300,000 and £500,000 in cost the following information must be added within three months of the work being completed:

1. confirmation that the SWMP has been monitored on a regular basis to ensure that work is progressing according to the plan and that the plan was updated appropriately; and

2. an explanation of any differences between the first draft of the SWMP and actual performance.

For projects over £500,000 in cost as well as the information above, the following information must be added within three months of the work being completed:

3. an estimate of the cost savings that have been achieved by completing and implementing a SWMP.

There is no requirement for firms to produce an action plan for each project detailing how lessons learnt may be addressed in future, however, drawing on such learning can help maximise the benefits and savings to be gained from SWMPs. Clients, principal contractors, designers and others involved in the planning and execution of projects may therefore wish to consider the most appropriate way of integrating the outcome of SWMPs into further construction work. It may be helpful, for example, to undertake a regular audit or review process of company SWMPs involving all key players, or to produce an over-arching action plan building on the findings of a number of projects.

2.6 Keeping SWMPs

You must keep your SWMP somewhere where it is accessible by anyone carrying out a regulatory compliance check.

During construction you must keep the SWMP at the site office, or where there is no site office, at an appropriate place on the construction site (electronically or on

paper). You must ensure that every contractor knows where it is kept and must make it available to any contractor carrying out work described in the plan. For practical reasons it might be advisable to make multiple copies of the planned waste management actions, but if you do, make sure that there remains just one master copy and that all duplicates are dated and updated accordingly.

In line with other waste management legislation, you are required to keep the SWMP for two years[5] after completion of the project at the principal place of business or the site of the project.

3. Regulating SWMPs

3.1 The purpose of regulation

The cost benefits from adopting the SWMP approach to resource planning should promote this measure to the construction industry, ensuring a high level of uptake. Increasingly, SWMPs are being incorporated within environmental management systems and Corporate Social Responsibility. The CLG Code for Sustainable Homes[6] includes SWMPs as a mandatory component, and a rating against this code will be required for all new homes from April 2008. Therefore, a range of other initiatives already promote and encourage the use of SWMPs as an environmentally responsible measure.

However, in order to accelerate benefits to all players, and to comply with this legal instrument, a degree of regulation will be necessary. It will be a matter for the enforcing authorities to determine the extent to which this work is prioritised, but compliance with SWMPs is likely to reduce fly-tipping, resulting in savings for functions otherwise involved in clear-up and enforcement work.

3.2 Who is responsible for enforcement

Enforcement powers are given to local authorities (this includes Waste Disposal Authorities, Waste Collection Authorities and Waste Planning Authorities) and the Environment Agency. These bodies already have a range of powers available to help tackle the illegal disposal of waste, therefore, SWMPs should be added to existing local enforcement strategies as an additional tool for dealing with fly-tipping.

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[5] Producers, holders, consignors and carriers of hazardous waste must also keep in a register all records of hazardous waste produced and/or transported. The register, must contain a copy of any consignment note used. These records must be kept at the notified premises for at least three years. If a construction project is of significant duration that it is broken down into stages each with separate SWMPs, an individual plan need only be kept for two years after completion of that particular stage.

[6] See http://www.planningportal.gov.uk/england/professionals/en/1115314116927.html

The allocation of these powers to both the Agency and local authorities enables them to be exercised in accordance with the national fly-tipping protocol, with the Agency generally focusing on larger, more serious incidents, perhaps those involving hazardous waste. However, the Agency is likely to only use the new powers during existing investigations into illegal waste disposal incidents.

It is for the enforcing authorities to determine those officers they consider most appropriate to undertake this work. It is expected that in most cases local environmental quality, environmental health or trading standards enforcement teams will be best placed to do so within local authorities, as they will have the necessary knowledge and training to carry out checks of waste documentation and to undertake further investigative work, pursuing prosecutions if necessary. Existing Flycapture enforcement training for local authorities will be expanded to include SWMPs. This is a national training programme to assist local authorities in dealing with illegal waste disposal and courses can be arranged on a bespoke basis. Further information is available on the Encams website at www.encams.org/events/main.asp?sub=11&pageid=223

Some local authorities, through Supplementary Planning Documents which support policies in their Development Plan Documents, already require SWMPs and may authorise officers to carry out basic inspections and checks when they are on-site for other reasons, such as case officer site visits. This can be used to flag any issues of concern internally, for further investigation, and can help to increase compliance by encouraging consideration of waste minimisation and management early on in the process. SWMPs are now included on the supplementary list of information that may be required by the local planning authority before they validate a planning application.

3.3 Phased approach to enforcement

Experience of writing and implementing SWMPs will vary considerably across the construction sector, therefore a phased approach to enforcement should be adopted over the first few years of the Regulation coming into force. For some companies the process of site waste management planning may require a significant change in practices therefore enforcement authorities will need to be involved in advising companies of the Regulation and helping to ensure the process is fully understood. National communications will ensure the dissemination of information on SWMPs, and Defra will work with delivery bodies to promote the requirements and publicise good practice and success stories.

3.4 When to check a SWMP

The approach to enforcement should be risk-based, so that the level of scrutiny is proportionate to the amount of information available and only increased if irregularities are identified. Most investigation will therefore take place in relation to specific waste management or fly-tipping incidents.

In the interests of better regulation and reducing administrative burdens wherever possible a SWMP visit should usually coincide with an existing site inspection. As well as resulting in possible costs savings to the regulator, this will enable the construction company to minimise staff time allocated to dealing with inspections.

3.5 What checks are recommended?

The key aim should be to ensure that, for appropriate sites, a SWMP has been written and implemented. Further checks should then be able to identify whether the plan is a true and fair description of the waste management processes being undertaken. More detailed checks should reveal whether there is documentary evidence of all waste that has been removed from the site, and whether the types and quantities of waste produced have been reconciled against the estimates in the plan.

It is suggested that the inspection starts with a visual check of the SWMP to confirm the key details and a discussion with the person responsible for drafting the plan. They should be able to explain how the plan has been implemented, down to sub-contractor level, and the way in which the site is managed to accommodate waste storage and recovery. This might lead to the identification of weaknesses in the implementation of the plan, which can be noted in it, revised if appropriate, and used as a learning opportunity for the next project.

Checks can then be made on the way that waste recovery and disposal tasks are being recorded and updated on the SWMP. Evidence of the waste carrier registration[7] and waste transfer or hazardous waste consignment notes for individual movements of waste should be provided either as part of the plan, or should be filed and cross-referenced. Simple checks on whether the waste carrier registration details have been confirmed with the Environment Agency and whether payment is tied to evidence of appropriate waste disposal will indicate how effectively the process is being adhered with.

The inspection can also be used as an opportunity to discuss whether waste minimisation techniques were employed during the design phase. Any decisions to reduce waste through the design of the project and the construction method or materials used should be included in the plan.

If all appears well, the visit can be concluded. If there are concerns, further checks should be carried out (see below).

3.6 Further checks

If it appears that progress against the waste recovery or disposal plans is not being properly evidenced and documented, then the person responsible for the

[7] http://www2.environment-agency.gov.uk/epr/index.asp

SWMP should be asked to explain why. Checks can be made with the Environment Agency on waste carrier registration.

From the evidence gathered it should become clear whether any compliance issues are due to ignorance of the SWMP process or due to an intentional failure to comply with the Regulations, possibly involving illegal waste movements. The penalties available for committing any of the SWMP offences are listed below. However, where a construction company is clearly having difficulty in following the procedure, an informative approach offering advice on SWMPs might be more appropriate.

3.7 Offences and Penalties

A range of offences is included in the SWMP Regulations to ensure compliance with the provisions. The key principle is that there is a chain of accountability between any worker who fails to comply with a SWMP, the person responsible for drafting and implementing the plan and the manager or body corporate that appointed that person.

Offence	Guilty party/parties	Penalty
Starting a project (on site) without a SWMP	Client and principal contractor	A person guilty of any offence is liable: (a) on summary conviction, to a fine not exceeding £50,000 or (b) on conviction on indictment, to an unlimited fine. Where a body corporate is guilty of an offence, proved to be committed by a qualified person, director, manager, secretary or someone acting in such capacity he is guilty of an offence as well as the body corporate.
Failing to update a SWMP when waste is removed from the site	Principal contractor (or client, if no principal contractor)	
Failing to make a SWMP available on site	Principal contractor (or client, if no principal contractor)	
Failing to keep a SWMP for two years from completion	Principal contractor (or client, if no principal contractor)	
Failing to comply with additional duties	Client and/or principal contractor as specified in the Regulations	
Making a false or misleading statement in a SWMP	Client, person drafting the plan or principal contractor	
Failing to co-operate with, or intentionally obstructing anybody acting in the execution of these regulations.	Anyone failing assist implementation of the plan or failing to respond to a request or visit by an enforcing officer	

SWMPs are intended to supplement, and to help reinforce, the waste duty of care. As previously explained, it is likely that SWMP checks will form part of wider fly-tipping investigations. SWMPs may therefore provide supporting

evidence for investigation of an offence under section 33 of the Environmental Protection Act 1990 and will not mitigate legal action for any related waste offences.

3.8 Powers to require information

The SWMP Regulations give local authorities all the powers of an officer of the Environment Agency under section 108 of the Environment Act 1995 for the purpose of enforcing the provisions. Section 108 provides the relevant enforcing authority with extensive powers to enter premises and otherwise gather evidence relevant to an investigation into an offence. An offence is committed if the person fails, without reasonable excuse, to provide the requested information.

3.9 Fixed Penalty Notices

These are available as an alternative to prosecution for failing to produce a SWMP or any other record relating to the plan when requested to do so by an authorised officer. Any repeat or persistent offences of failing to produce the required documentation, which must be kept at the site, should be pursued through the Courts, thus providing a stepped approach to enforcement.

The level of the FPN for this offence is fixed at £300 in line with other FPNs available for waste documentation offences. The receipts from these FPNs may be retained by local authorities to spend on further enforcement of the SWMP Regulations. The Environment Agency must return its receipts to the HMT consolidated fund.

Further generic guidance on FPNs and example forms are available at: www.defra.gov.uk/environment/localenv

4. How to save money with a SWMP

As explained earlier, the most effective method for saving money is to have the aim of minimising waste in mind before you begin planning how to manage waste produced on site. Careful choice of materials and methods of construction during the design phase can significantly reduce the quantity of waste produced on site and save resources.

Following on from this the SWMP should be used to capture how any waste arising on site will be managed and recovered wherever possible before disposal options are explored.

4.1 Other Resources

A range of resources is available online to help the construction sector improve materials resource efficiency and to waste fewer materials. This includes

information on good and best practice SWMPs that are likely to generate the greatest savings, as well as further advice on standard practice/compliance with the Regulations.

www.envirowise.gov.uk
Envirowise offers UK businesses free, independent, confidential advice and support on practical ways to increase profits, minimise waste and reduce environmental impact. It offers practical help and advice on waste minimisation and legislation through workshops, conferences and exhibitions, an expert helpline, free on-site visits and Resource-Efficiency Clubs.

www.wrap.org.uk
WRAP works in partnership to help businesses and the general public to reduce waste, to use more recycled material, and recycle more things more often. This helps to minimise landfills, reduce carbon emissions and improve the environment. Advice is also available on setting targets for waste minimisation and on specifying contractual requirements.

Guidance on basic and advanced level SWMPs, including toolkits, are available from Envirowise and WRAP respectively.

http://www.wrap.org.uk/construction/construction_waste_minimisation_and_management/swmp_form.html

www.bre.co.uk
BRE (the Building Research Establishment) provides a SMARTwaste (Site Methodology to Audit, Reduce and Target Waste) resource that helps construction companies to manage waste effectively. This comprises four tools:
SMARTStart defines environmental performance indicators (EPIs) for waste generation on a site by site, and organisation basis.
SMARTAudit (detailed audit): a robust and accurate mechanism by which waste can be benchmarked and categorised by source, type, amount, cause and cost.
SMARTStart+ (monitoring and target setting): provides the opportunity to measure performance of contractors, an essential requirement under best value and continual improvement, and
BREMAP (resource exchange): a geographical information system (GIS) that allows firms to reduce their transport of bulky waste by locating the nearest most suitable waste management site.
BRE has expanded its SMARTStart system to provide an online SWMP tool.

www.ciria.org.uk
Ciria provides performance improvement products and services in the construction and related industries.

www.constructingexcellence.org.uk

Case studies, regional clubs and information on Key Performance Indicators including waste.

www.environment-agency.gov.uk
The Environment Agency's SITEwise II project has been developed with partners in the Anglian region to improve the environmental performance and awareness of the construction and building sector. Information on quick wins, links, further help, a summary of environmental management systems and educational materials can be found in the SITEwaste II pack on the Agency's website.

www.netregs.gov.uk
Netregs provides free environmental guidance for small businesses, to help them understand what they need to do to comply with environmental legislation and protect the environment. This includes guidance and a campaign to encourage businesses to learn more about SWMPs.

www.nisp.org.uk/default.aspx
Industrial symbiosis brings together companies from all business sectors with the aim of improving cross industry resource efficiency through the commercial trading of materials, energy and water and sharing assets, logistics and expertise. It engages traditionally separate industries and other organisations in a collective approach to competitive advantage involving physical exchange of materials, energy, water and/or by-products together with the shared use of assets, logistics and expertise.

www.wasteawareconstruction.org.uk/
Provides information about the National Colour Coding scheme for the source segregation of recyclates on C&D sites and ways that C&D companies can Reduce, Reuse and Recycle their waste. Includes a direct link to the Construction Confederation's Environmental Forum toolbox talks which cover a variety of topics, including the management, storage and segregation of waste.

4.2 A step-by-step summary of opportunities to save

Taking the construction cycle from site clearance to completing a building, the following opportunities exist for improving materials resource efficiency:

1. Demolition
Think of demolition waste as a resource which if used efficiently can result in lower disposal costs, savings on new materials substituted by re-used or recovered materials and salvaging architectural features.

The Demolition Protocol funded by the Institution of Civil Engineers (www.ice.org.uk) is a resource planning tool that links the production of demolition material to its specification as a high value material in new buildings. One component looks at cost recovery from an existing building while the other

looks at the potential for recovering materials for new building. Further details also available from www.wrap.org.uk

Pre-demolition/pre-refurbishment audit – these will help you to identify what products/materials are present within the existing building and help plan for their recovery routes.

2. Pre-design
Clients need to recognise the business benefits, as well as environmental benefits, of specifying materials to achieve greater materials resource efficiency. By specifying, for example, recycled content in materials costs can be cut and Corporate Social Responsibility demonstrated.

Clients can stimulate demand for resource efficiency, for example, by linking recycled content to policy and planning strategies.

3. Design and specification
A range of approaches adopted during the design phase can reduce wastage and make a building more cost effective both during construction and occupation. For example, applying lean and modular designs, selecting standard component sizes and designing for deconstruction are all options which will result in cost and waste savings, and merit consideration.

4. Tender specification
Reduce the quantity of waste arising on the construction site by including in tender specifications a requirement for material suppliers to take back any packaging and unused materials. Materials with excessive packaging should be avoided where possible. Thought should be given to the amount of materials needed by decreasing wastage allowances.

5. On the construction site
Efficient site planning and material storage will minimise the level of wastage through damage and allow unused materials and waste to be segregated and stand a better chance of effective recovery. Aim to recover any unused materials in the highest cost application.

4.3 Key waste materials

Any reduction in material wastage or increase in re-use, recycling or other types of recovery should result in cost savings. Particular attention should be paid to recoverable materials which is reused could substitute for primary materials. Some key materials have a particularly significant impact on the environment due to high volumes being landfilled or the nature of the material. Some examples of these materials where significant savings can be made are given below:

Wood is a valuable resource that can easily be re-used. It can be re-used or recycled depending on its condition and site requirements. Any unused wood should be segregated from other wastes and then re-used, recycled or recovered by other means including energy recovery. Landfill disposal should be considered as the last resort where all other options have been exhausted.

Plasterboard attracts a significant cost premium when landfilled (can be up to £135/tonne) so measures to reduce such waste should secure cost as well as environmental benefits. Some producers offer takeback schemes, but plasterboard waste can also be reduced by specifying designs to standard board sizes and ensuring protected storage to avoid wastage through damage.

Some options to consider in order to minimise waste

- **Refurbishment vs new build** – expectation is that the former creates less waste, although commercial reasons or planning controls might dictate the choice
- **Ordering and delivery of materials** – consider how materials are procured and delivered to site. Just in time deliveries can reduce the amount of waste produced as materials spend less time on site.
- **Standard material sizes** – adapt the design to standard material supply sizes or specify bespoke sizes to avoid waste off-cuts
- **Construction methods** – prefabrication means less waste on-site and a greater likelihood of the supplier reusing any waste at the site of manufacture

5. Summary

In order to maximise materials resource efficiency savings, you need to prioritise waste minimisation right throughout the construction project, not just when the SWMP process prompts you to do so. SWMPs apply to all forms of construction project above £300,000 with more detailed reporting on projects over £500,000.

In the SWMP you will need to record for each waste type how much will be re-used, recycled or taken away for recovery or disposal elsewhere. Effective implementation is key to the SWMP process; tie contracts to waste targets and regularly engage with contractors. As waste is processed, update the SWMP and refer to your waste transfer documentation to complete the audit trail. When the project is finished review your SWMP and see where you have achieved your plans and what you might improve next time.

SWMPs will be regulated, where possible, during existing site visits. Any checks will be light touch, ensuring that a SWMP is in place and implemented, unless

more significant compliance issues or fly-tipping is suspected. It is important to remember that SWMPs reinforce a chain of responsibility for all waste actions from the sub-contractor to the principal contractor or corporate body.

A range of resources is available to help construction projects improve their materials resource efficiency. This guide gives examples of opportunities to target waste minimisation throughout the life of a construction project.

Finally, although the legal requirement for SWMPs is intended to safeguard construction projects from illegal waste operatives, the wider approach of tackling waste at source is where the greatest environmental - as well as financial – benefits can be secured.

6. Related sources of information/references

The DTI's Site Waste Management Plans - Guidance for Construction Contractors and Clients - Voluntary Code of Practice was published in July 2004. For projects over £300,000, the SWMP Regulations now apply, however, this voluntary checklist continues to provide a useful tool for managing and minimising waste for construction projects falling below the threshold. This document can be downloaded from: http://www.constructingexcellence.org.uk//resources/publications/view.jsp?id=2568

The Health and Safety Executive deals with all aspects of construction work in England, Scotland and Wales. Information on Government legislation and safety within the industry for workers, employers and contractors can be obtained from: www.hse.gov.uk/construction/index.htm

The Environment Agency has developed a carbon calculator aimed at its own construction activities. The carbon calculator is an Excel spreadsheet that calculates the embodied carbon dioxide (CO2) of materials plus CO2 associated with their transportation. It also considers personal travel, site energy use and waste management. Although the tool has been developed with the Agency's own construction activities in mind (predominantly fluvial and coastal construction projects), other construction clients, contractors and consultants may find it useful when assessing their own activities. Available at: www.environment-agency.gov.uk

Defra is working with BERR to develop a code of practice for the sustainable use of soils on construction sites. The code will provide information and guidance on improving soil management practices, including amelioration techniques, maintenance of soil quality and dealing with surplus soil. This is due to be published as a consultation document in early 2008 and will be available at: www.defra.gov.uk

6.1 Additional guidance on hazardous waste

If you are a small business and a new producer of hazardous waste, the best place to start is the Defra leaflet 'Waste – can you handle it?' (see links below)

If you need guidance on whether or not a specific waste is hazardous you should consult the Environment Agency's 'Guidance on the interpretation of the definition and classification of hazardous waste (WM2)' (see links below)

Waste – can you handle it?
www.defra.gov.uk/environment/waste/special/pdf/waste-canyouhandle.pdf

List of Wastes (England) Regulations 2005 SI 895
www.opsi.gov.uk/si/si200508.htm

The Hazardous Waste (England and Wales) Regulations 2005 SI894
www.opsi.gov.uk/si/si200508.htm

Defra Hazardous Waste pages
www.defra.gov.uk/environment/waste/topics/hazwaste/index.htm

Environment Agency Hazardous Waste pages
www.environment-agency.gov.uk/subjects/waste/1019330/1217981/?version=1&lang=_e

Environment Agency guidance on the interpretation of the definition and classification of hazardous waste (WM2)
www.environment-agency.gov.uk/subjects/waste/1019330/1217981/1384307/

Annex A: Example Site Waste Management Plan proforma

Site waste management plan

NB. Information highlighted in grey is required only for projects exceeding £500k in value.

Responsibility

Name of client	
Name of principal contractor	
Name of person who drafted plan	
Notes, amendments	

Construction Project

Location (address, postcode if appropriate)	
Estimated project cost	
Notes, amendments	

Materials Resource Efficiency

Describe here any methods adopted during the conception, design and specification phase to reduce the amount of waste arising.	
Method	Resource saving (quantify if possible)

Waste Management

Declaration
The client and principal contractor will take all reasonable steps to ensure that – (a) all waste from the site is dealt with in accordance with the waste duty of care in section 34 of the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) regulations 1991; and (b) materials will be handled efficiently and waste managed appropriately.
Signatures

Waste type	Quantity (m3 or tonnes)							
	Re-use on-site	Re-use off-site	Recycling on-site	Recycling off-site	Other form of recovery on-site	Other form of recovery off-site	Sent to landfill	Other disposal
Estimates								
Inert								
Non-hazardous								
Hazardous								
Totals (m3 or tonnes)								
Actual								
Inert								
Non-hazardous								
Hazardous								
Totals (m3 or tonnes)								
Difference between estimates and actual								

Waste Records

Date removed	Waste type	Identity of the person removing the waste	Site the waste is being taken to and whether licensed or exempt	Waste carrier and registration number*	Confirmation of delivery*

* Evidence of waste carrier registration and waste transfer or hazardous waste consignment notes for each removal of waste should be provided either as part of the plan, or filed and cross-referenced.

Post-Construction

[Within three months of the construction work being completed]

Confirmation
This plan has been monitored on a regular basis to ensure that work is progressing according to the plan and has been updated to record details of the actual waste management actions and waste transfers that have taken place.
Signature

Issue	Details
Explanation of any deviation from the planned arrangements	
Waste forecasts – exceeded	
Waste forecasts – not met	
Cost savings achieved	

Annex B: European Waste Catalogue Codes for the most common types of construction waste

(Source: Environment Agency Wales - A survey on the arising and management of Construction and Demolition waste in Wales 2005-06, due to be published)

EWC	Waste Description
13 01 10*	Used mineral hydraulic oil (non-chlorinated)
13 02 04*	Waste engine, gear or lube oil (chlorinated)
13 02 05*	Waste engine, gear or lube oil (non-chlorinated)
13 02 08*	Other waste engine, gear or lube oil
13 08 99*	Other waste oils e.g. oily gully/drain sludge
14 06 01*	Chlorofluorocarbons e.g. refrigerant coolant
15 01 01	Cardboard or paper packaging
15 01 02	Plastic packaging e.g. toner & ink cartridges, polythene sheeting
15 01 03	Wooden packaging e.g. timber pallets
15 01 04	Metallic packaging e.g. drink cans, paint tins
15 01 10*	Packaging containing dangerous substances e.g. old paint & chemicals tins
15 01 11*	metallic packaging containing a dangerous solid porous matrix (e.g. asbestos)
15 02 02*	Absorbents, filter materials, wiping cloths, clothing contaminated by dangerous substances
16 01 03	Tyres
16 01 07*	Oil filters
16 01 15	Antifreeze fluids that do not contain dangerous substances e.g. Coolants
16 01 17	Ferrous metal from vehicles e.g. car parts
16 02 13*	Hazardous waste electricals e.g. TVs, white goods, printed circuit boards
16 02 14	Non hazardous waste electricals e.g. washing machines, power tools
16 05 05	Gases in pressure containers i.e. gas cylinders
16 06 01*	Lead batteries
16 07 08*	Oily waste from transport and storage tanks
16 10 01*	Hazardous liquid wastes to be treated off-site
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 06*	Concrete, bricks, tiles and ceramics containing dangerous substances
17 01 07	Non hazardous mixtures of concrete, bricks, tiles and ceramics e.g. mixed rubble
17 02 01	Wood from construction or demolition e.g. timber trusses, supports, frames, doors
17 02 02	Glass from construction or demolition e.g. window panes
17 02 03	Plastic from construction or demolition e.g. UPVC plastic off-cuts
17 02 04*	Hazardous glass, plastic and wood e.g. telegraph poles
17 03 02	Bituminous mixtures that do not contain coal tar e.g. road planings, tarmac

17 04 01	Copper, bronze, brass from construction or demolition e.g. used copper piping
17 04 02	Aluminium from construction or demolition e.g. off-cuts, aluminium guttering
17 04 03	Lead from construction or demolition e.g. lead flashing
17 04 05	Iron and steel from construction or demolition e.g. steel scaffolding poles, iron grating
17 04 07	Mixed metals from construction or demolition
17 04 11	Cables that do not contain dangerous substances e.g. electric cabling
17 05 03*	Soil and stones containing dangerous substances e.g. contaminated soil
17 05 04	Soil and stones that do not contain dangerous substances e.g. clean soil
17 06 01*	Insulation materials containing asbestos
17 06 04	Insulation waste that does not contain asbestos or other dangerous substances
17 06 05*	Construction materials containing asbestos e.g. bonded asbestos
17 08 02	Gypsum based construction materials that do not contain dangerous substances e.g. plasterboard
17 09 03*	Other C&D wastes containing dangerous substances e.g. mix of oil/solvents/C&D waste
17 09 04	Other mixed C&D waste that is not hazardous
18 01 04	Waste from medical establishments that does not require special management e.g. sanitary waste
19 13 01*	Solid wastes from soil remediation containing dangerous substances
20 01 01	Paper & card similar to that from households e.g. office paper, junk mail
20 01 13*	Solvents similar to that from households e.g. parts cleaner
20 01 19*	Pesticides similar to that from households
20 01 21*	Fluorescent tubes and other mercury-containing waste
20 01 23*	Discarded equipment containing CFCs e.g. waste fridges & freezers
20 01 26*	Oil & fat that are not edible e.g. refrigeration oil
20 01 27*	Paint, inks, adhesives and resins containing dangerous substances e.g. waste polyurethane paint
20 01 30	Non hazardous detergent e.g. flushing agent/universal cleaner
20 01 33*	Hazardous batteries and accumulators that are collected separately
20 01 39	Separately collected plastics e.g. plastic containers, bottles
20 01 40	Separately collected metals e.g. gates, bedsprings
20 02 01	Garden or park waste that is biodegradable e.g. green waste, wood and shrubs
20 03 01	Mixed waste similar to that from households e.g. mixed office, kitchen & general waste
20 03 03	Street cleaning residues e.g. gully waste
20 03 04	Septic tank sludge
20 03 06	Waste from sewage cleaning
20 03 07	Bulky waste e.g. old office furniture, desks, sanitary ware

*** denotes hazardous wastes**