4. FUTURE WASTE MANAGEMENT REQUIREMENTS

4.1 Waste Statistics

4.1.1 PPG10: 'Planning and Waste Management' requires development plans to be based on reliable information on waste arisings, movements, disposal and facilities. A number of legislative and policy changes have overtaken the Cambridgeshire Waste Management Plan 1995-2005 published in 1995, although this document remains an important information source. The Environment Agency has conducted a National Waste Survey that has been used in the production of a Strategic Waste Management Assessment for the East of England. This provides additional information on waste arisings, forecast changes in waste production, and the capacity of existing facilities.

4.1.2 PPG10 also requires the production of regional waste management strategies that are to provide guidance on the quantities of waste to be managed within individual waste plan areas. This should provide the proper context for determining the future contribution of the Plan area to meeting wider regional need.

4.1.3 In view of the importance attached by both Government and the Councils to progressing the Waste Local Plan, the Plan has been prepared on the basis of the best available data. This included the results of the Councils' own survey of waste facilities for the year 1998 which included details of the different types of waste treated, recovered, recycled and disposed of. However, the Councils also recognised the need to take account of both new statistics and the regional waste strategy guidance as they emerged, and these were taken into account during the Plan's preparation.

4.2 Background Paper: Controlled Waste Management 1998-2011

4.2.1 To provide a sound statistical basis for the Local Plan, a study was commissioned to forecast future waste management requirements (*Cambridgeshire and Peterborough Waste Local Plan Background Paper: Controlled Waste Management 1998-2011).* This study:

- established baseline data
- projected waste generation during the Plan period
- estimated the effect of waste 'imports' to and 'exports' from the Plan area and the impact of efforts to minimise waste production on total waste to be managed
- modelled how different wastes could be managed taking account of European and national policy objectives and targets, and the options available to deal with waste e.g. recycling, composting
- predicting the requirement for new waste management facilities

4.2.2 This chapter summarises the results of the study and their implications for the Plan.

4.2.3 The Plan has to make adequate provision for the management of wastes that are termed 'controlled wastes'. These may be divided into the following categories based on their origin and characteristics:

Inert	waste which will not or is slow to biodegrade or decompose e.g. soils, concrete, rubble and construction and demolition waste (the latter of which may contain a small fraction of non-inert waste, e.g. timber)
Industrial & Commercial	wastes arising from premises used for industry, trade or business
Municipal	wastes for which the local authority has a duty to manage (e.g. household waste)
Special & Difficult	wastes which either show specific hazardous properties, or require specialist techniques to avoid handling or disposal problems
Clinical	wastes arisings from human or non-human sources that, unless rendered safe, may be hazardous or infectious
Sewage	wastes arisings from the treatment of sewage liquids

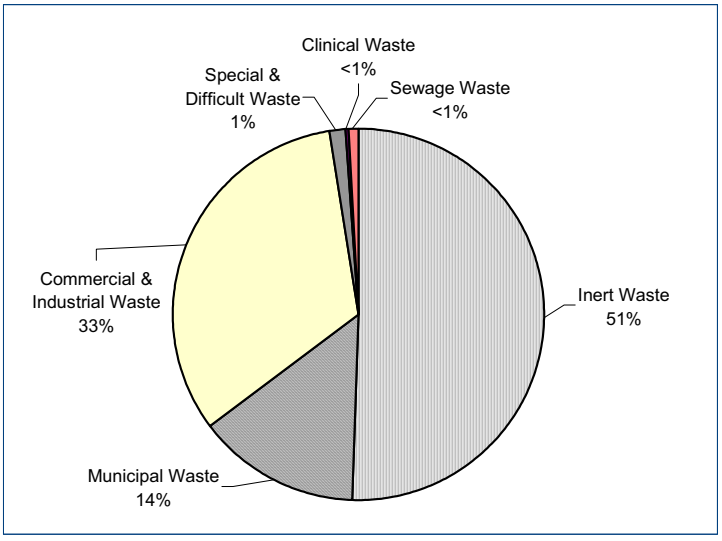
4.3 How Much Waste Will Be Arising Over The Plan Period?

4.3.1 For each of these waste categories estimates were made of how much waste would be generated in the Plan area over the period of time covered by the Plan. 'Low' and 'high' estimates were made which included assumptions about the rate at which waste generation would increase above current levels. From these low and high estimates a mid-point was taken and this has been used as the basis for preparing the Waste Local Plan.

Controlled waste stream arisings 1998-2011

Inert	19,151,000
Industrial and Commercial	12,445,000
Municipal	5,375,000
Special and Difficult	502,000
Clinical	90,000
Sewage	312,000
TOTAL	**37,875,000**

Figure 1: Composition of controlled waste arisings in the Plan Area



4.3.2 The current waste arisings in the Plan area is 2.5 million tonnes that would, without any change to current circumstances, rise to 2.9 million tonnes.

4.3.3 Assumptions have been applied to these figures regarding the contribution of waste minimisation (the reduction of waste at source) and the level of imports and exports to derive a figure for the amount of waste to be managed in the Plan area. This is the key figure for planning purposes.

4.4 How Much Waste Will Have To Be Managed Over The Plan Period?

4.4.1 Waste minimisation (reducing waste generation at source) is the Government's first priority although there are no formal Government targets. Assumptions about waste minimisation were made for different waste streams according to the potential to minimise waste arisings.

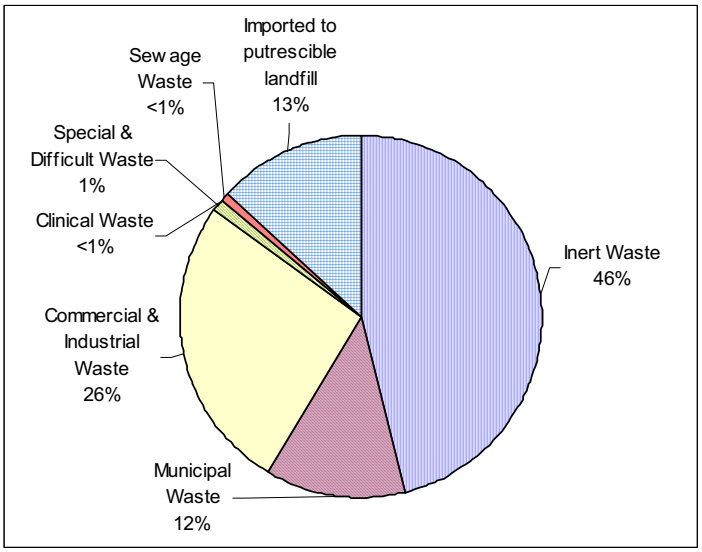
4.4.2 With regard to the import and export of waste, the Plan area is a major importer of putrescible waste for disposal to landfill (about 0.5 million tonnes per annum). The Plan area also imports inert waste (100,000 tonnes) and exports some commercial and industrial waste (about 15% of arisings). The Plan's forecasts assume a gradual decline in waste imports as well as exports of waste to other areas. This would result in 'self-sufficiency' by the end of the Plan period.

4.4.3 The predicted total waste requiring management in the Plan area is as follows:

Controlled Wastes managed in the Plan Area 1998-2011

Inert	19,547,000
Industrial and Commercial	11,159,000
Municipal	5,290,000
Special	418,000
Clinical	90,000
Sewage	312,000
Imported putrescible waste	5,519,000
TOTAL	**42,337,000**

Figure 2: Composition of controlled waste managed in the Plan Area



4.4.4 The annual amount of waste requiring management is predicted to decline from 3Mt in 1998 to 2.7Mt in 2011. This is due to assumptions about growth in waste arisings and a reduction in waste exports being counterbalanced by a reduction in waste imports, and the beneficial effects of waste minimisation.

4.5 How Can We Manage This Waste?

4.5.1 The key influences on how waste should be managed in the future are EU and national policy. These policies set targets for reducing the amount and types of waste that may be deposited in landfill sites (currently the predominant method of disposal) and for managing waste using more sustainable methods. A full list of targets for different wastes is set out in **Appendix 2**. Examples of the scope of these targets (some of which are mandatory) are:

- to recycle or compost at least 25% of household waste by 2005, and 33% by 2015
- to recover value from 67% of municipal waste by 2015
- by 2010 total landfilled biodegradable municipal waste reduced to 75% of 1995 levels, and by 2013 to 50% of 1995 levels (Source: Landfill Directive. Targets reflect the derogated timetable negotiated by the UK)

4.5.2 Based on EU and national policy priorities and requirements, a number of scenarios were developed regarding how waste management might develop during the Plan period and beyond. These have been constructed by:

- considering the potential contribution of different waste management technologies in terms of their ability to 'divert' or remove waste from the 'waste stream'
- modelling how that contribution could be built up over time from present levels (which would require new types of facilities to be commissioned)

4.5.3 For example, the contribution of waste composting is derived by considering the proportion of waste that is biodegradable, and then deciding how much of that waste can practicably be recovered.

4.5.4 This is an essential first step in predicting the likely land use planning requirements in terms of the number, scale and type of facilities that need to be planned for. It is however a tool for future planning and not a blueprint. The detailed way in which the management of waste develops and evolves in the Plan area, and over the period of the Plan will be influenced by other factors besides the Plan itself. For example, the management of municipal waste (the collection and disposal of which is the responsibility of the local authorities) will be largely determined by the development of new collection systems to recover more recyclable and compostable wastes, and the contractual arrangements for the disposal of waste. The Waste Local Plan can encourage and enable these changes through policy support for the development of appropriate facilities.

4.5.5 The management of commercial and industrial waste will be determined by a combination of cost considerations and legislative requirements such as the

Packaging Regulations (which require companies to recycle or recover a proportion of their packaging waste). In addition, during the lifetime of the Plan existing technologies for managing waste may improve and new technologies may emerge.

The scenarios modelled are summarised in Table 4 below:

TABLE 4: WASTE MANAGEMENT SCENARIOS

Scenario	Strategy Components	Strategy Assumptions	European and National Requirements met?
The "Do nothing" option	• Recycling • Treatment: principally green waste composting and inert waste recycling • Inert and non-landfill	No amendments to current practice	No
Scenario 1 (Meet relevant targets)	• Kerbside collection and bring banks: source segregation of recyclables and compostables • Materials recycling facilities • Windrow composting of green waste • In vessel composting of kitchen waste • Inert waste processing • Landfills for inert and non-inert waste	Aims to meet relevant diversion targets using 'conventional' recycling and composting technologies without EfW	National targets (non-statutory) for recycling and composting met for all waste streams within the Plan period but not beyond. European targets for reducing biodegradable municipal waste (BMW) not quite met without recourse to technologies modelled in Scenarios 2 and 3
Scenario 2 (Maximised non-EfW)	• Kerbside collection: basic source segregation • Materials recycling facilities • Mixed waste processing plants incorporating composting and anaerobic digesters • Inert waste recycling • Landfills for inert and non-inert waste	Maximises waste diversion without the use of EfW. It seeks to present the practicable limits of present waste diversion technologies. It assumes innovative techniques and an increased commitment by the public	Can meet national targets and the Landfill Directive within the Plan period but beyond 2014 national recovery targets will not be met as the technology meets its limits
Scenario 3 (Integrated)	• Energy from waste (additional element building on Scenario1)	Integrated system of recycling, composting and energy from waste technologies	Meets relevant recovery targets to beyond 2020

4.5.6 The scenarios do not address the issues of developing markets for recycled/ recovered products. This matter is being addressed by Government through the Waste Strategy 2000.

4.6 Do We Need More Landfill Capacity?

4.6.1 Within the Plan area there is an existing network of landfill sites for the disposal of inert and non-inert wastes. All of these sites have limitations on their capacity (the amount of waste that can be disposed of imposed by planning and waste management licenses). Some sites are almost full but others have substantial remaining 'void space' and can continue to operate for many years. The rate at which these sites are filled will depend upon the contribution of alternative technologies in reducing the amount of waste for final disposal. The void space has been projected into the future by depleting it by the amount of waste requiring disposal for each waste management scenario. The results are tabulated below:

Putrescible landfill requirement

Scenario	Total void remaining at end of plan period (m3)
No change	-6,533,000
Scenario 1	-3,558,000
Scenario 2	-1,792,000
Scenario 3	-1,467,000

Inert landfill requirement

Scenario	Total void remaining at end of plan period (m3)
No change	-1,430,000
Scenario 1	258,000
Scenario 2	915,000

Note: Scenario 3 is not applicable to inert waste as this is not combustible.

4.6.2 In terms of putrescible voidspace, the effect of continuing with present arrangements would be a landfill void deficit of approximately 6.5 million cubic metres by the end of the Plan period. With the implementation of Scenario 1 this is reduced to a deficit of 3.5 million cubic metres, 1.8 million cubic metres with Scenario 2, or 1.4 million cubic metres with Scenario 3. Even with efforts to divert large amounts of putrescible waste from landfill the existing capacity will be filled up by about the year 2008-2009. The main reason for this is that the technologies required to recover waste take time to implement and so do not have such a large impact within the early years of the Plan.

4.6.3 In terms of inert voidspace, the effect of continuing with present arrangements would be a landfill void deficit of approximately 1.4 million cubic metres by the end of the plan period. With the implementation of Scenario 1 this is changed to a surplus of 0.3 million cubic metres, or 0.9 million cubic metres with Scenario 2.

4.6.4 It is therefore necessary for the Plan to make provision for the release of additional landfill void space.

4.7 Do We Need More Waste Management Facilities?

4.7.1 The move away from landfill and the adoption of more sustainable waste management methods (as required by EU and national policy and reflected in the waste management scenarios) will make it necessary to develop new types of waste management facilities in the Plan area which creates the need to identify suitable locations for such facilities. The number of facilities that could be required has been calculated and the results are set out below.

Indicative Waste Management Facility Requirements in 2011

	Annual input (tonnes)	Indicative facility size	Number of facilities required
Indicative elements for Scenario 1:			
Materials recovery facility - municipal waste & 25% of commercial recyclables	149,000	30,000	**5**
Materials recovery facility - 75% of commercial recyclables	210,000	40,000	**5**
Windrow composter - municipal waste	31,000	5,000	**6**
Anaerobic digester - municipal waste	77,000	15,000	**5**
Inert waste facility - inert waste	786,000	250,000	**3**
Indicative elements for Scenario 2:			
Materials recovery facility - 75% of commercial recyclables	315,000	80,000	**4**
Mixed waste processing (recycling and anaerobic digestion) - municipal & commercial waste	480,000	120,000	**4**
Windrow composter - municipal waste	39,000	6,000	**6**
Inert waste facility - inert waste only	905,000	300,000	**3**
Additional element for Scenario 3 only:			
Energy from waste - municipal & commercial waste	579,000	290,000	**2**

All figures rounded to nearest thousand tonnes

4.7.2 An indicative requirement for facilities for each scenario may therefore be:

- Scenario 1: 24 facilities
- Scenario 2: 17 facilities
- Scenario 3: 26 facilities

4.7.3 This is an estimate only and the number, type and scale of facilities, which are in practice brought forward for development, may vary. It should be borne in mind that the total number of facilities required does not necessarily equate to the total number of sites potentially required, as some sites could accommodate more than one use.

4.7.4 In addition to these facilities some transfer stations to bulk waste prior to transport to treatment or disposal may be required, depending upon the location of the various facilities.

4.8 Implications For The Waste Local Plan?

4.8.1 The Waste Local Plan therefore needs to identify additional putrescible and inert landfill capacity to meet the forecast requirements during the Plan period, taking into account the distribution of existing and potential void space.

4.8.2 With regard to non-landfill facilities, Scenario 1 does not appear a realistic option to pursue given that it will not meet statutory targets relating to municipal waste in the second half of the Plan period. Scenarios 2 and 3 both meet all national targets, and go beyond them. There is no commitment in the Plan to a single scenario. Such an approach is both flexible and realistic, particularly given that the WPAs cannot guarantee delivery of specific waste management facilities.

4.8.3 This Plan identifies **Preferred Sites** that are considered suitable in principle for major non-landfill waste management facilities (Policy WLP18 and Appendix 6), and other preferred areas for putrescible and inert landfill (Policy WLP28 and Appendix 6). The

most appropriate geographical distribution of facilities across the Plan area is a reflection of:

- the minimum optimum economic scale and efficiency of different facilities. Certain facilities such as Mixed Waste Processing and Energy from Waste are likely to have a high throughput of waste whereas others can operate with much smaller quantities (windrow composting)

- the proximity principle and the need to minimise the impacts of transporting waste

4.8.4 Larger facilities are best located centrally, close to the major sources of waste, whilst others could be located in more rural areas serving smaller local catchments.

4.8.5 The Plan makes sufficient provision for the development of waste management facilities to meet both Scenarios 2 and 3 or some combination of these predictions. Provision for the landfill deficiency identified under Scenario 2 is made (this is slightly higher than under Scenario 3).

4.8.6 The Plan also **safeguards** existing and proposed sites for major waste management facilities from other development that would prejudice a waste management use (Policy WLP19). There is also support for proposals for the following uses on certain types of land in defined circumstances:

- household waste recycling centres (Policy WLP 20)
- inert waste recycling (Policy WLP 21)
- waste transfer stations (Policy WLP 22)
- non-inert materials recovery facilities (Policy WLP 23)
- anaerobic digestion (Policy WLP 24)
- composting facilities (Policies WLP 25 and WLP 26)
- energy from waste (Policy 27)
- landfill (Policy WLP 28)

4.8.7 These policies are set out in full and explained in Chapter 8 of the Plan. The criteria used in the selection of preferred sites are summarised in paragraph 8.18.2 of the Plan and set out in more detail in a separate background paper: (*Cambridgeshire and Peterborough Waste Local Plan Background Paper: Site Selection)*.