Paul Mobbs,
Mobbs Environmental Investigations,
3 Grosvenor Road, Banbury, Oxon. OX16 8HN.
Phone/fax 01295 261864.
Email: mobbsey@gn.apc.org
URL http://www.gn.apc.org/pmhp/meir.htm

Mobbs' Environmental Investigations
* Environmental consultancy
* Research
* Campaigns coordination

A Critical Evaluation of the Essex Waste Local Plan

For and on behalf of

Public Interest Consultants

November, 1998

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A. Introduction

This report has been produced at the request of Public Interest Consultants. I have undertaken a large number of development plan reviews during the past ten years, and this review is intended to produce a critical evaluation of the content of the draft Essex Waste Local Plan drawing on that experience.

This first section of the report provides a general overview on the plan. The second section contains a detailed evaluation of the plan's content. My review of the plan has found 55 general deficiencies in the plan. These are grouped in this report under 23 general headings. Referencing to the policies/text of the plan is provided.

I do not normally provide detailed proposals for the amendment of the plan at the objection stage. I have found it more efficient to outline the grounds of the objection during the consultation period, and then provide detailed arguments and amendments in proofs of evidence to the local plan inquiry. In particular the opportunity for discussion and negotiation with the planning authority can lessen the workload for the inquiry itself. If further detail is required this could be provided on request.

General Critique

A good way of providing a quick indication of the overall standard of the plan is to look at the referencing and glossary. Some plans give very little referencing. Others, such as this, provide ample referencing. Unfortunately for Essex County Council there are a number of errors in their references and their glossary.

In my estimation Essex County Council have created three significant flaws in this plan:

- There is an over-reliance on the planning guidance in PPG23 - which is now extremely dated. This over-reliance on dated guidance means that the plan does not adequately reflect the recent legislative changes brought about by -
  - the EC Framework Directive on Waste[1],
  - recent case law (in particular that relating to the definitions of waste and the public perception of risk), and
  - the imminent changes due from the implementation of the EC Landfill directive.
- There is an over-reliance on SERPLAN/SEWRAC's regional guidance. The consideration of regional guidance is, in itself, valid under recent government guidance[2]. However SERPLAN/SEWRAC's evaluation and reporting procedures, particularly in relation to waste classification, are so archaic that they do not correspond to the classification of waste types under the Framework Directive (as implemented into UK law). I see particular problems because the SERPLAN/SEWRAC waste surveys have always been primarily intended to inform policy making for the bulk disposal of wastes to landfill or incinerators. The approach is not consistent with a resource-conservation led waste policy.
- There is a massive over-provision of capacity - not just landfill capacity, but if all the .major

[1] EC Framework Directive on Waste (75/442/EEC, as amended by 91/156/EEC and 91/692/EEC)

[2] In particular, DETR's draft PPG10, '*Waste Disposal and Management - Final Draft*', February 1998

waste manage sites' were developed too that would significantly exceed the requirement for waste management capacity in the county when added to the level of landfill provision.

These two faults, and in particular the problem with the reliance on SEWRAC's waste figures, mean that the strategy of the plan cannot be relied upon. The construction of the plan is essentially a '*business as usual*' bulk disposal to landfill plan with additional policies on other management options bolted onto it. The problem is that the plan still provides for bulk disposal to landfill. This trend in the plan, and the failure to adequately identify waste arisings and flows on a county-wide and sub-area basis means that it will be very difficult to set up waste management practices further up the waste hierarchy.

Given the wording of Structure Plan Policy WD1, it is possible to argue that the draft plan is not in conformity with the structure plan. This is because Policy WD1 requires the promotion of, "*waste minimisation, recycling, composting and energy from waste so that they can make the fullest possible contribution to waste management*". Taking established practise from Europe and North America that means the diversion from landfill of at least 50% to 65% of the waste stream. The plan does not in any way provide for this.

I am also concerned by the mindset of the officers writing the plan. The adoption of a policy of 'strategic waste disposal sites' is flawed. It works if you just want to build incinerators. But a more sustainable policy relying on the development of segregated collection, feeding through to transfer stations, and then to materials recovery facilities (MRFs) requires that a more reasoned approach to siting is taken. The site selection process in Chapter 8 of the plan was really only looking for available site. It did not attempt to quantify waste arisings, and site facilities according to the capacity required, and the type of facility required.

Taking an '*area-led*' approach rather than a '*county-wide*' approach does not require prescriptive planning. For example if we consider Colchester and its surrounding area, it is a simple matter to quantify the amounts of waste collected by the Waste Collection Authority and private contractors, and its composition. Such work has already been undertaken in-part by the Environment Agency as part of the National Waste Survey (being carried out to inform the forthcoming National Waste Strategy). Having collected this data it is a simple matter to devise a strategy to shift from the current pattern of bulk-disposal to one of waste reclamation and recovery. All the plan needs to do is specify the infrastructure requirements for that, and other, areas.

The success of a resource-recovery strategy is of course contingent on the bulk-disposal options being closed off. This requires:

- A clear indication in the plan that landfill provision will be held at a declining ceiling during the plan period;
- That at the same time landfill provision is restricted, alternative capacity is provided at suitable locations to displace the need for landfill.

The plan clearly fails on both these counts. There is no policy in the plan to limit landfill provision over the plan period - quite the opposite in fact. There is also no undertaking to seek the speedy provision of alternative management options. In fact the structure of the plan strategy reinforces the likelihood of failure by only providing 'certain' provision for landfill - all other options are left in limbo with no commitment to adopt any particular set of options. This is clearly contrary to the guidance from DETR that plans must provide clarity and certainty in the provision of infrastructure.

Finally, there is a abject lack of targets. Tables 6.1/6.2 list a number of national targets, but there is no clear commitment through policy to implement any of these through the plan. The reliable attainment of target-led goals also requires that we set monitoring indicators within the '*implementation and monitoring*' section (Chapter 12) of the plan - this is clearly lacking.

In my opinion this plan will not produce a significant shift in waste management practices in Essex and Southend. The type of policies required to provide clarity and certainty to the developers of more sustainable waste management processes do not exist. In fact the only certainty in the plan is that bulk disposal to landfill, at a fairly constant rate, will continue over the plan period. Unless the strategy of this plan is fundamentally changed then I do not believe that we will be able to attain the national targets intended to drive waste management towards more sustainable methods of operation. More urgently, I do not believe that the

Priorities

Rather than recommend a large number of objections I believe it would be useful to highlight the priorities I see in reforming this plan. There are essentially four aspects of the plan which need redrafting if the strategy for waste planning in Essex is going to deliver a more sustainable waste management system:

1. Data - statistics on which to base the provision of infrastructure and the attainment of targets

This is discussed in more detail in section B.5. We have to end the reliance on SEWRAC's dated statistics and actually consider what is happening in the real world. The change in assessment procedure essentially involves:

1. Obtaining data for site input and remaining capacity for waste management facilities in Essex - this data should be available from the Environment Agency (EA.) (in the Northwest the E.A. provide this information to the public already as an annual report).
2. Aggregating inputs to various sites, taking account of imports, to provide an area-based set of figures for waste disposal, and remaining capacity. I would suggest basing the areas on existing local authority (Waste collection Authority) areas as follows -
   - Area 1: Harlow, Epping Forest, Brentford, Basildon, Chelmsford;
   - Area 2: Maldon, Rochford, Southend-on-Sea;
   - Area 3: Uttlesford, Braintree;
   - Area 4: Colchester, Tendring.
3. Taking these figures as a baseline, projecting progressive decreases in the provision of disposal capacity, and ensuring that more sustainable management options are provided to meet the shortfall. These targets, and consequent changes in infrastructure provision, must be clearly stated in the plan in order that the County Council can defend the policy in the face of opposition from the waste disposal industry.
4. As a knock-on effect of requiring the transfer from bulk disposal to bulk reclamation, the Waste Disposal Authority, the Waste Collection Authority's and the Environment Agency will need to co-operatively engage in a parallel process to renegotiate the disposal/collection contracts that currently exist in the county. The County Planning

Authority and the Environment Agency will also need to restrict the operation of existing sites to ensure the fulfilment of the strategy (i.e., a reduction of inputs from Essex does not mean that site operators increase imports in order to keep operating in the same manner).

Taken together these steps will provide a more certain basis to the planning and operation of waste management than the current reliance on SEWRAC/SERPLAN's guidelines.

2. The Management of Disposal - restricting bulk disposal options, including that for waste imports, to assist the development of other management options

As noted above, there need to be a progressive decrease in bulk disposal - and in the use of that term I include 'bulk' (i.e. unsorted/unsegregated) disposal of waste to incinerators as well as landfill. That requires a conscious rundown of the capacity of landfill sites, and the provision of only enough void to meet future capacity - phased to meet future demand.

I would suggest that the plan should seek to implement the following targets:

- On the assumption that 90% of waste in Essex is currently landfilled. Reduce landfill provision by 33% by the year 2005[3], and 55% by the year 2010 (i.e., to 60% and 40% of current arisings respectively);
- Consequent with the above, to recycle, reuse, minimise or eliminate 40% of waste arisings in Essex by the year 2005, and 60% by the year 2010;
- Reduce the biodegradable content of waste being landfilled to 75% by the year 2005, and 45% by the year 2010[4];
- Consequent with the above, to ensure that all Class B/C waste that is 'treated' prior to final disposal before the year 2001[5];
- Co-disposal of industrial/hazardous wastes and ordinary controlled waste must be stopped after 2001, and such waste must be properly pre-treated and disposed of at dedicated sites.
- To increase the production of secondary aggregates (i.e., marketable material, not including bulk fill materials or landscaping materials) to 25% of primary aggregates production by 2005[6], and 40% by 2010.

An important factor here is that the composition of the 'treated' disposal stream will change over time, progressively becoming more inert. The current 'inert' stream will also change in composition, but it will also markedly fall in quantity. That will mean that the provision of the current 'A-B-C' classes of site must change. Class B/C will be severely restricted. The provision of Class A may also fall to the point where the only feasible option (apart from minor filling operations) is to run a single class of site where the inert (Class A) wastes are used as cover material for the remaining class B/C waste (there are already problems in providing cover materials at sites in the South East following the introduction of the landfill tax).

[3] This is based on the '*Making Waste Work*' (Cm3040, DoE 1995) target

[4] This is based on the EC Landfill Directive (Draft March 1998) targets

[5] This is based on the requirement in Article 6(1) of the Landfill Directive to pre-treat prior to landfilling

[6] This is based on the MPG6 (DoE, 1994) target

3. A Framework for Sustainable Waste Management - an seven point strategy to promote sustainable alternatives to bulk disposal

Objection 10 provides an seven-point approach to managing waste more sustainably. This requires that a more detailed and structured approach is taken to all development - not just by the Waste Planning Authority but also (by the current framing of the law) the Local Planning Authority's. Only by adopting such a structure approach will we be able to implement the alternatives to bulk disposal.

4. Clear Interaction with the Legislative Framework - amending the plan so that it provides correct interpretations of the legal framework

In making the changes advocated in this report there will be clear and vehement opposition from the waste industry. This deduction is backed up by my experiences elsewhere in the UK when recommending such changes, or in promoting particular interpretation of current legislation and government guidance. It is essential therefore that the policies of the plan are correctly specified within the current legislative framework. In particular:

- The EC Framework Directive on Waste, as implemented by the Waste Management Licensing Regulations (SEWRAC/SERPLAN's current waste guidance is inconsistent with the definitions and approaches specified in the Directive);
- The amended Environmental Protection Act - the important aspect of which is the implementation of a national statutory waste strategy along with other measures on packaging and waste minimisation;
- The introduction of the Integrated Pollution Prevention and Control (IPPC) system developed from the existing Integrated Pollution Control (IPC) system, which will encompass landfill sites;
- The proposed changes to local government specified in the recent white paper which will provide an obligation to local authorities to protect the economic, social and environmental wellbeing of the public, and to ensure that authorities implement sustainable development;
- The fundamental changes to waste management systems that will be required by the forthcoming EC Landfill Directive;
- The recent changes to the 'special waste' legislation (currently SEWRAC's waste classifications are inconsistent with the new legislation).

These four points are the 'big' structural issues which must be dealt with in the plan. Part B of this report provide a more detailed breakdown relating to specific parts of the plan that seek to implement the above.

B. Review of the Waste Local Plan (deposit draft)

1. Sustainable Development

[whole plan]; Sustainable development and waste planning para. 2.17-2.19, p10; Sustainability

Critique:

The plan does not clearly address the issue of sustainable development in any meaningful sense - this is a flaw which affects the whole plan. I would suggest that the plan must define, through a policy, what Essex County Council's interpretation of sustainable development is, and how it will be applied for the purposes of development control.

Paragraphs 2.17 to 2.19 do mention 'sustainability' - however the information given is superfluous to the rest of the plan:

- It notes a definition of sustainable development, but this is inadequate. The Brundtland definition of sustainable development is clearly a 'concept', and therefore requires careful explanation within the context it is being used to make it clear the interpretation of the concept made. In any case the Brundtland definition is rarely quoted correctly, and in full…

  "*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts:*

  - *the concept of needs, in particular the essential needs of the world's poor, to which over-riding priority should be given;*
  - *the idea of limitations imposed by the state of technology and social organisations on the environment's ability to meet present and future needs.*"

- Paragraph 2.18 then gives further quotes from '*Making Waste Work*', but in this context they are completely meaningless, and in no way does the plan address these issues - in particular those of 'environmental costs' and 'balancing' management options.

- Paragraph 2.19 quotes '*Less Waste - More Value*', but again the plan does not explore the issues raised - for example there is no commitment to reduce disposal capacity in order to ensure reductions in waste volumes.

In short, the plan does not properly implement government guidance - beginning with core planning documents such as PPG1 or PPG12, and more vague, peripheral documents such as the white papers on sustainable development - and therefore it is flawed.

Analysis:

Defining sustainable development is very difficult. There are many different definitions that, while taking common terminology from the general debate on sustainable development, depend largely for their meaning on the vested interests of the originator. This problem was highlighted very well by the Town and Country Planning Association in relation to the different

interpretations that are used in the field of planning:

> *"...it is a vague concept that, at once, offers a comprehensive, consensual and conservative approach able to weld together quite disparate and conflicting interests in environment and development. But, because it is vague and its implications poorly understood, in practice it offers few clear solutions. Anyone can sign up for sustainable development so long as it requires no specific commitment to do anything that will threaten their material interests.*"

Sustainable development has not, in our view, ever really occupied an important place in the debate on development control, although it does form part of the debate of strategic planning. This leads to the practical problem that whatever we put into development plans during the strategic process is very unlikely to be considered when the plan is put into action. The reason for this, we believe, is that the philosophy of sustainable development does not easily fit into the everyday terminology of development control. The imperative in building sustainability into the plan must therefore be to design policies and strategies which, while in the jargon of development control, seek to implement to goals of sustainable development.

The origins of sustainable development are numerous. One can see the basic philosophy in 17th Century English radicalism, or the philosophy of the Great Plains Indians of the USA. In many ways sustainable development is a common-sense led set of principles that lie within many human philosophies - irrespective of race or religion there are a whole range of principles which humans share. But the origin of the 'modern' concept of sustainable development was the perceived 'environmental crisis' of the 1960s/1970s. The need to manage human society, in the interests of the environment, was first coherently expressed at the First United Nations (UN) conference of Environment and Development at Stockholm in 1972. For the first time nations came together to consider the importance of environmental systems, and not just the economic ones. The issues raised at the Stockholm Conference and the move towards considering the environment as an essential factor in development were discussed in a book which became one of the important texts of the early environment movement, '*Only One Earth*'[7].

At the United Nations Conference on Environment and Development in Rio de Janeiro (the '*Earth Summit*') in June 1992, 20 years after the Stockholm Conference, a new convention on the need to integrate the environment into social and economic decision making was produced. The convention on sustainable development, entitled '*Agenda 21*'[8] (the Agenda for the 21st Century), set out for the first time detailed definitions of what sustainable development was, and set objectives and targets for achieving it. The conference also set out 27 principles in the '*Rio Declaration*' which practically defined the meaning of sustainable development in a series of simple statements. These principles provide a simple way of assessing 'sustainability', and help define the relevant matters before proceeding to a detailed analysis to formulate policy.

The one problem with sustainable development has been translating the overarching international principles in Agenda 21 into national codes or action plans that the public, business and government agencies can implement. The Governments' white paper on the environment, '*This Common Inheritance*'[9] did give some guidance on general principles of environmental protection, and it also advanced the use of the precautionary principle well before it was defined

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[7] '*Only One Earth: The care and maintenance of a small planet*', Barbara Ward and René Dubos. André Deutsch Ltd. ISBN 0 233 96308 1. First published 1972.

[8] '*Agenda 21*', United Nations Conference on Environment and Development Final Document, UNCED 1992.

[9] '*This Common Inheritance: Britain's Environmental Strategy*', Cm1200, HMSO 1990

in Agenda 21. In relation to planning there is guidance in Chapter 7 of Agenda 21; in the UK there is guidance in Chapter 24 of '*Sustainable Development - The UK Strategy*'[10]; at the European Union level, sustainable development is discussed in Chapters 11 to 16 of the EC's response to Agenda 21[11].

The full statement from the Brundtland Report, given previously, phrases '*sustainable development*' in a wider social, political and economic arena. It contains three concepts which require precise definition:

- **The first is development** - which is not the same as growth, although the two are often used synonymously. This factor is confused in the plan. Growth involves the physical expansion of the economic system. Sustainable growth is ultimately contradictory since there are physical limits imposed by the earth and its natural resources. Development, by contrast, implies improvement and progress and includes social and cultural as well as material dimensions. Sustainable development emphasises conservation and the recognition that natural resources are not simply free goods to be pillaged and pilfered at will. This is particularly relevant to the Agency as Government guidance considers sustainability in terms of the carrying capacity of the environment.
- **The second concept is needs** - defined in the Brundtland Report as 'meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life'. The environment simply cannot cope with meeting the material standards enjoyed by the rich while, at the same time, supplying basic necessities to the burgeoning populations of the developing world.
- **Thirdly, there is the concept of future generations.** This involves the notion of stewardship. We have a moral duty to look after our planet and to hand it on in good order to future generations; this means improving already degraded areas and avoiding irreversible damage (such as the destruction of species) or imposing risks on the future (from toxic or radioactive wastes, for example).

Looked at in this way the criteria for sustainable development are very tough indeed. First, it will require a review of political and social systems - not just economic ones. Second, it implies a wholesale shift from exploitation to conservation through the accurate costing of resources that are currently considered free (the air, for example, used and polluted by power stations). Third, there has to be a withdrawal now from those activities whose effects transcend generations, and which rob or endanger future generations - the generation of radioactive waste for example. These issues are examined in part by the recent SERPLAN consultation document[12], but the best source is of course the reports produced by the Rio '*Earth Summit*' in 1992 (Agenda 21, The Rio Declaration, etc), and the follow up reports produced for the New York '*Rio+5*' conference in 1997.

The consideration of the efficacy and effectiveness of the Essex Waste Local Plan is therefore a matter of definition - an issue which we raise in objections at a number of points. Unless we can define the '*meaning*' of sustainable development in the context of Essex, and then create strategies and policies which seek to address the opportunities or confounders of this broad definition, we will not have a sustainable plan.

[10] '*Sustainable Development: The UK Strategy*', Cm 2426, HMSO 1994

[11] '*Report of the Commission of the European Communities to the United Nations Conference on Environment and Development*', European Commission 1992

[12] '*A Sustainable Development strategy for the South East - public consultation*', SERPLAN (ref. SERP400), May 1998

In my view there are five primary goals which need to be implemented in order to achieve true sustainability:

- **Conservation:** Sustainable development means the efficient use of non-renewable energy and mineral resources through higher productivity, recycling, development of alternative technology and substitution wherever these are possible and not environmentally harmful. It also means maintenance of biological diversity and potential. It will also require the economic valuation of natural capital assets regarded as free. The conservation goal can be said to be to ensure the environmentally efficient use of land and other resources.
- **Balanced development:** This goal is concerned with the use of physical resources and their impact on the built environment. Resource conservation requires patterns of development that minimise energy consumption, promote the re-use of buildings and prevent the waste of valuable natural resources. The goal here is to achieve an appropriate balance between the built and natural environment.
- **Environmental quality:** At the very least environmental quality means that processes must be avoided that degrade or pollute the environment. But it must also be an aim to improve and enhance environmental quality in those areas already degraded or grossly polluted. This goal is therefore to prevent or reduce processes that are harmful to the environment and human health.
- **Social equality:** A pattern of inequality has developed that intensifies the pressure on the environment from the high per capita demands of the rich and the struggle for survival of the poor. The conflicts that arise are a major obstacle to co-operation. Greater equality will not, in itself achieve sustainability since under present economic systems both wealth and poverty degrade the environment. But greater equality will remove the sources of conflict and is a precondition for political co-operation and commitment. The scale of inequality was first assessed in the Brundtland Report, and was further considered at UNCED through the proposals drawn up in Agenda 21.
- **Political participation:** Commitment will only be achieved through participation. This goal is to change values and attitudes by encouraging the increase of participation in political decision-making at all levels. Change cannot simply be ordained from above - it must also be stimulated from below. Within democratic systems of government, non-governmental organisations (NGO's) are able to promote ideas and mobilise support for them. Dispersal of power from the central state to the local level will encourage innovation, responsibility and support for policies of sustainable development. In this respect, the structure plan system fails since it is strictly regulated by 'guidance' defined at the national level.

The above goals must be acknowledged within any strategy which aims to institute sustainable development policies - purely economics or development led goals will not achieve a sustainable system - it just makes the existing economic system *'environmentally friendlier'*.

The process which I believe Essex County Council should have adopted in the compilation of this plan is as follows:

1. **Visioning** - identifying peoples views of the area, and their aspirations for change;
2. **Definition** - identifying the relevant parts of international, European, national and regional guidance on sustainable development, and specifying the 'objectives' for development in terms of these guidelines;
3. **Capacity Assessment** - taking the issues that arise as part of (1), and the objectives in (2), we assess the possibilities for delivering (1) and (2) within capacity of the

environmental, social and economic systems in the area to deliver change;

4. **Strategy** - a strategy is the systematic definition of objectives, targets and evaluation procedures for achieving the goals specified in (1) and (2), having regard to the assessment of capacity(3). In our view the plan does not have a coherent and identifiable sustainability strategy;
5. **Policy** - a systematic definition of those actions which are necessary to realise the strategy. The plan has policies, but the lack of a clear strategy makes it difficult to associate the authority's progress towards sustainable development with the policies of the plan.

I do not believe that the plan has a clearly define structure/strategy for implementing policies on sustainable development. The sources of guidance for this are numerous, and hence the options for achieving this are many. But the basis of the plan appears to be a matter of achieving development provision. More importantly this objective is implemented without regard to the capacity of local systems to accept it.

The policies of the plan must be review having regard to the need to ensure that the plan implements more sustainable patterns of development.

2. Objectives of the Plan

para. 1.2, p6; Issues addressed in plan
para. 1.7, p6; Objectives of the plan

Critique:

The issues and objectives addressed in the plan, detailed in paragraphs 1.2 and 1.7, fail to define the wider legal framework that the plan is required to operate within. Following on from the purely legislative requirements, there is also no clear strategy outlined in the issues or objectives of the plan to implement national targets for waste management, such as those in making waste work, by the development of a clear strategy for reforming disposal practices.

Analysis:

In considering the legislative framework within which to frame the plan our first stop is of course Part II of the Town and County Planning Act. However regard must also be had to the European legislative framework implemented through Part 1 of Schedule 4 of the Waste Management Licensing Regulations 1994[13]. As noted in Paragraph 1 of this Part, the regulations apply to the discharging of functions under any part of Part II of the Town and Country Planning Act. Further clarification on the planning implications of these regulations is provided in the accompanying guidance circular[14].

The main issues regarding the European legislative framework is the implementation through the plan of the '*relevant objectives*' of the EC Framework Directive on Waste. These are

[13] SI. 1994/1056

[14] DoE Circular 11/94, "*Waste Management Licensing, The Framework Directive on Waste*", 19th April, 1994

specified in Paragraph 4 of Schedule 4. It is a legal requirement that these objectives are considered and acted upon. This is reinforced in paragraph 1.47 of Circular 11/94 Annex 1 paragraph 1.47 which states:

> *"The general duty in paragraph 2(1)* [of Schedule 4 to the 1994 Regulations] *means that in exercising the specified functions authorities must always consider the objectives of the Directive and aim to determine decisions ... in line with them"* [emphasis added]

This is the language of materiality (to consider) but the duty imposed by the relevant objectives is far more onerous than this implies. Paragraph 2(1) of Schedule 4 to the 1994 Regulations actually requires that:

> "*2(1) …the competent authority shall discharge their specified functions, insofar as they relate to the recovery or disposal of waste, with the relevant objectives*" [my emphasis]

Insofar as the planning authority are a competent authority, they must be able to demonstrate the application of the relevant objectives. In terms of role, planning authorities assess 'damage' to interests of acknowledged importance. This of course gives them a more holistic view than the Environment Agency who can only consider what is before them in a waste license application. But beyond that, a planning authority has a much greater freedom to identify and definite 'harm' to interests of acknowledged importance[15].

Although the plan does address some of the objectives in part, in no way does it methodically consider the requirements of the objectives and apply them through policies in the plan. Other objections in the review specify various ways in which the requirements of the relevant objectives may be addressed, in particular sections 4, 5, 9 and 10.

3. The relevance of PPG23 and other guidance

para. 1.4, p6; Relevance of PPG12 and other guidance
para. 1.13-1.17, p6-7; PPG23 guidance on content of waste plans, and the 'section 50 plans'.
Chapter 2, p9-11; The Policy Framework
para. 8.5, p35; Use of PPG23 extract

Critique:

The plan cannot make certain references to the content of PPG23 given the changes in the regulatory system that have occurred since it was written. Recent and forthcoming changes to the regulatory system must be considered in order to ensure the advice in PPG23 is addressed in the correct context.

Paragraph 1.4 is clearly incorrect since it references 'section 50' plans. Section 50 of the Environmental Protection Act has been repealed, and although approved plans are held as 'relevant' for planning purposes regard must be had to the emerging statutory '*National Waste Strategy*'. Hence it would be more reliable to address the content of the DETR's consultation

[15] '*Wider*' with regard to PPG23 paragraph 1.35

paper, '*Less Waste, More Value*'. Likewise references to the content of PPG23 and section 50 plans in paragraphs 1.13 to 1.17 must also be reconsidered. Also, in paragraph 1.13, reference is made to local authority recycling plans. Although these plans are still current, guidance was recently issues by DETR on the revision of these plans to make them more relevant to changing practices and technology. For this reason regard must be had to the new guidance as well as the old recycling plans.

Finally, it questionable to include the extracts of PPG23 in paragraph 1.14 given that these paragraphs are the subject of revision in draft PPG10. Also, the extracts of PPG12 in paragraph 8.5 are undesirable given that the guidance on development plans is under scrutiny as part of the governments '*Modernising Planning*' programme[16].

In summary, Chapter 2 is clearly in error regarding '*The Policy Framework*'. Although it references the various documents that should be considered, it make no attempt to consider the legal obligations on the authority in making the plan. Nor does it outline the legislative and procedural restrictions which must be satisfied as part of the development control functions on planning authorities (the local authorities as well as the county planning authority) to discharge the obligations on them.

Analysis:

It is not possible to consider PPG23 in isolation. The waste policy content of PPG23 is extremely dated. Many parts of the guidance in PPG23 are now inconsistent with European waste legislation (certainly so once the Landfill Directive is brought into force). Although efforts to redress these deficiencies have been made through the development of a draft PPG10, this guidance has still not been finalised and approved, and currently there is no clear date when it will be. In fact the future position of waste planning must be consider uncertain in the light of the correspondence sent to the Chief Executives of local authorities and waste disposal authorities which stated:

> "*My purpose in writing is to explain that any existing contracts, or any contracts currently being negotiated, may not be a determining factor in deciding any requirements to be placed on authorities by legislation to implement the requirements of the directive. You authority will wish to bear this in mind when making decisions on waste disposal contracts, and to consider appropriate arrangements for the apportionment of regulatory risk.*"[17]

Clearly then the structure of waste disposal is going to change significantly from the system envisaged at the time PPG23 was written. For this reason no reliance can be placed on PPG23. In terms of the wider legislative framework, it is my view that the plan should specify the legal obligations on the planning authority, and on developers, from the various sources of guidance that the plan names. It is only by making such an analysis that the plan can properly address the legal obligations on planning authorities and developers, and clearly indicate how these are discharged through the policies or advice in the plan.

[16] '*Modernising Planning: Improving arrangements for the delivery of local plans and unitary development plans*', DETR March 1998

[17] Letter from Martin Nesbit, Team Leader DETR Waste Policy 4, to Chief Executives, 29th May 1998

4. UK and European Legislation and Waste Planning Functions

para. 1.6, p6; Relevant objectives and waste planning functions of county and district planning authorities
para. 1.12, p6; Planning legislation and waste functions

Critique:

In paragraphs 1.6 and 1.12 state that only the waste local plan (and the Southend UDP) can contain policies on waste. This is not correct.

Analysis:

Ordinary local plan can lawfully contain policies on waste:

- Section 38(1) defines '*waste policies*' as policies involving the '*depositing*' of waste or refuse. Section 36(5)(b) notes that local plans may not contain policies for the deposit of refuse or waste materials. However the meaning of 'deposit' does not encompass all waste operations. Those operations which involve the temporary storage of waste on the premises they are produced are either exempted from licensing, do not require licensing if they are domestic premises, or are excluded from licensing due to ministerial direction because the quantities of waste involved are 'de minimis' (bottle banks and other on-street collection receptacles fit into this category). Hence, the management of the transfer of waste for recycling, or home composting, or the storage of waste at business premises, are not operations that involve the 'deposit' of waste for the purposes of sections 38/36, and local plans are therefore open to include policies on them.
- 'Waste' is term with precise legal meaning, and for the purposes of the planning we must reconcile the policies of the plan with the actual meaning of '*waste*' within the EC Framework Directive on Waste. The Framework Directive has introduced a new meaning of the term '*directive waste*'. Schedule 22 of the Environmental Protection Act 1995 repeals section 75(2) of the Environmental Protection Act 1990 that defined the term 'waste'. Instead the definition of waste taken in Regulations 1(3), 24(8), and paragraph 9 of Schedule 4 of the Waste Management Licensing Regulations[18] now defines what is and is not waste. Paragraph 2.54 of DoE Circular 11/94[19] outlines the definition of waste as follows:

  > "*Waste appears to be prescribed in the Directive as posing a threat to human health or the environment which is different from the threat posed by substances or objects which are not waste. The threat arises from the particular propensity of waste to be disposed of or recovered in ways which are potentially harmful to human health or the environment and from the fact that the producers of the substances or objects may no longer have the self interest necessary to ensure the provision of appropriate safeguards.*"

  This concept is completely different to the past definition of 'controlled waste' which assumed that certain objects or substances fitted neatly into definitions of origins (industrial, household, etc.). The Directive approach considers that any object or substances that is discarded, or which is disposed of via recovery operations should be

[18] Waste Management Licensing Regulations 1994, SI. 1994/1056.

[19] DoE Circular 11/94, "*Waste Management Licensing, The Framework Directive on Waste*", 19th April, 1994.

handled in a way which meets the '*relevant objectives*'[20]. That puts a positive burden of local planning authorities to make policies to deal with waste issues. In particular where any handling, storage or treatment of waste materials does not require a waste license, for example storage on a premises prior to collection, there should be policies to consider and include appropriate safeguards to protect the environment and human health, and foster better resource management, consistent with the aims of the relevant objectives.

The local plan must contain within it policies to implement the relative objectives of the Framework Directive for all types of development - not just those involving the deposit of waste. In order that this can be done without the waste local plan being prescriptive over other classes of development in the rest of the county it is necessary that the other local plans in the county include policies on the temporary deposit, storage, or holding of waste for recycling. It is also necessary to have policies which require developers to submit details of waste arisings from developments in order that attention can be given to minimising waste, and encouraging more efficient production processes.

5. Critique of the Plan Strategy

Chapter 3, p12-16; Plan strategy
para. 3.3-3.4, p12; Interpretation of the waste hierarchy, and identification of management options
Policy W3A, p13-14; General waste policies, and BPEO
paras. 3.22-3.35, p14-16; Calculation of waste management capacity required
Policy W3D, p16; Void space policy
Policy W5A, p20-21; Nuclear and special waste
Policy W5C, p22; Sewage treatment
paras. 9.8-9.19, p58-60; Landfill void space calculations
paras. 10.32-10.34, p90; Surcharge
Appendix 2, p113; Conversion factors
[whole plan]; Conformity with structure plan Policy WM1

Critique:

This plan is, in my professional opinion, extremely badly written, confused and erroneous. Every development plan relies on its effectiveness for a clear and coherent strategy to underpin and connect the policies and advice contained within the plan. This plan is neither clear nor coherent.

The key failure in this plan is the strategy - contained in Chapter 3. The strategy does not promote integrated waste management - it provides only detailed proposals for landfill, leaving other management options as a set of vague possibilities varying between incineration to the reuse of materials. But even the only definite set of proposals in the plan, relating to landfill, are seriously flawed. I do not believe that this plan should every be adopted without a comprehensive overhaul of the strategy and the policies which implement it.

In my opinion the waste local plan is not in conformity with Policy WM1 of the Essex Structure Plan:

[20] The 'Relevant objectives' of the Directive are defined in paragraph 4, schedule 4 of the Waste Management Licensing Regulations.

- Point 1 of this policy requires that waste minimisation, recycling, composting and energy from waste are promoted so that they can make the '*fullest possible contribution to waste management*'. I do not believe that the plan does this. If we look at experience elsewhere in Europe and North America recycling levels of up to 50% are achieved. In some areas higher levels are achieved. On the basis of waste reclamation and recovery operations elsewhere it is clear that this plan does not promote a strategy which makes the '*fullest possible contribution*' to the alternatives to final disposal.
- Point 2 of this policy requires that sites are identified for major facilities. It is possible to interpret the policies on '*major waste management sites*' as conforming with this requirement. However I world argue that the wording '*specific preferred sites*' is stronger than that, and actually requires that sites for that alternative waste management processes are found. Given that any of the major waste management sites could be used for any process from a transfer station to an incinerator, the plan provides no clear and certain guidance which developers or the public can have confidence in.

In terms of the alternatives to landfill, I must dispute the interpretation of the waste hierarchy, and identification of management options, in paragraphs 3.3-3.4. As noted in the recent consultation paper '*Less Waste, More Value*', the waste hierarchy is not fixed. For example if we consider recent EC Commission report on the lifecycle analysis of waste management options, prepared by Coopers and Lybrand, incineration actually rates lower than landfill because of the additional damage to the environment caused by emissions. In evaluating management options it is not merely a matter of looking for an option somewhere on the hierarchy. It is necessary to consider whether the particular option is more beneficial than existing practices on the basis of an analysis of waste inputs and material outputs (the lifecycle analysis of options is actually recommended in draft PPG10). Given the errors in interpreting the hierarchy, it is necessary to object to Policy W3A. This policy is a totally unrealistic approach to the use of the hierarchy - it is too simplistic and too rigid. What the policy should apply is the principle of the '*Best Practicable Environmental Option*' (BPEO).

The actual calculation of landfill requirements is, in my opinion, a mess. It is neither mathematically correct nor transparent in its method. Paragraphs 3.22-3.35, paragraphs 9.8 to 9.19, Policy W3C and Policy W3D together provide for a massive over-provision for landfill void - at least double that which is required. This is not consistent with current UK and European government policy on restricting the use of landfill.

Policy W5A is flawed on two points:

- Firstly, radioactive waste is not 'controlled waste' for the purposes of waste management. Therefore radioactive wastes, particularly the radioactive wastes from licensed nuclear sites such as Bradwell, does not fall within the scope of the waste local plan. This is unfortunate, since it would be useful to have some local control over such operations, but this policy is neither legally correct nor practically realistic. Radioactive waste will have to be managed at the Bradwell site, and it is likely that it will be stored on site. According to the UK Radioactive Waste Inventory there will be about 30,000 cubic metres of low-level waste from the decommissioning of Bradwell - it is likely this will be stored on site for a long period of time which activity levels decay.
- Secondly, with regards to hazardous wastes, it ignores the effects of the landfill directive. The co-disposal of hazardous waste will end during the plan period, as will the disposal to landfill of some difficult wastes and liquid wastes. These wastes will then have to go to dedicated facilities for treatment and disposal. This is not considered in the plan.

Policy W5C also gives me cause for concern. I am confused about the point regarding the 'co-treatment' of sludge. BPEO for sewage sludge is likely to be anaerobic digestion. This is already successfully carried out at Thames Water's Beckton treatment works in East London, and produces four to five megawatts of power which is sold to the national grid. Some water companies have opted for the simple option of incineration - but on a lifecycle analysis this can be shown not to be BPEO. The co-treatment of sludge with other wastes is not necessary to achieve satisfactory degradation of this material. If treatment facilities are required for other organic wastes it would be advisable to operate sites specifically for these other waste streams.

Paragraphs 10.32-10.34 on the surcharge of wastes sites to account for settlement are also in error, given the changes that will take place in landfilling over the plan period. The requirement in the landfill directive to pre-treat wastes, and the reduction in the content of biodegradable material, will affect the level of volume reduction the waste mass produced during the stabilisation of the wastes. It is therefore not advisable to have a simplistic 'blanket' policy on stabilisation - it should be considered in a site-by-site basis.

Finally, regarding the conversion factors in Appendix 2, I believe that these are unrealistic on two grounds:

- Firstly, many site operators for class B/C waste are achieving much higher rates of compaction - 1te/m^3 to 1.1te/m^3 is not uncommon. The effect of having a lower figure is to provide additional void space for waste which many not be necessary. There are good reasons to have lower levels of compaction - for example it enhances the transmission of fluids through the waste mass in order to assist stabilisation. But the plan should not seek to prescribe particular levels of compaction at sites - it should only adopt figures for the purposes of planning.
- Secondly, compaction densities will change significantly over the plan period. The pre-treatment of wastes from 2001 onwards will increase the proportion of 'inert' materials in the waste mass. This will affect density. The removal of certain types of material such as paper and the organic content of the waste will not only affect density, it will also affect moisture content. This means that density could change significantly (since water makes up a proportion of the waste density). Having simple density conversion figures is therefore not a satisfactory approach to planning for the requirement for landfill void.

Analysis:

This is a badly compiled plan. I would summarise the deficiencies of the plan as follows:

- **There is no '*data strategy*'**. This is highlighted as an important factor in '*Making Waste Work*' where it states, "*Good information is essential for the formulation of sound waste management policies; it is also needed in order the progress towards targets can be measured*". I see no attempt at providing a sound 'data strategy' by Essex County Council. The whole process by which figures are arrived at is very confused - regional statistics are provided in the appendices, but they are not used in the calculations. Some figures are introduced from nowhere. Significantly some of the figures for the 'potential' and 'permitted' sites do not tie up with the figures used in the calculations.
- **There is a lack of foresight.** The plan does not anticipate changes in policy which are clearly going to change important parameters in the plan. The significant factor in this is of course the effects of the landfill directive. If this is not considered in this plan then the

whole process will have to happen again in 2001 to rectify the mistakes. In my assessment that would be a misuse of public funds due, in part, to the incompetence of the staff preparing the plan.

- **There is a lack of understanding about integrated waste management.** It is not a matter of simply having policies on other options. There must be a conscious decision to cut certain disposal options and provide suitable alternatives. If this is to be dome in an efficient and timely manner then it requires that definite proposals are brought forward in the plan for these alternatives. The '*major waste management sites*' policy is, in my opinion, void for uncertainty.
- **There is an over-reliance on 'regional' statistics.** I question the validity of the SERPLAN/SEWRAC projections given the changes that will happen following the introduction of the landfill directive, but more importantly the 'quality' of the data on which these studies are based. There are significant questions regarding the accuracy of data currently provided by the Environment agency, in particular regarding the 'leakage' of waste from the system in some areas due to poor accounting (e.g., the lack of weighbridges at many inert sites), and the double-counting of waste in other areas.

Given the problems regarding the regional statistics what Essex County Council should have done was to start by producing a set of statistics with quantified certainty. We should be able to understand the flaws that may exist in the data, and quantify the variance on the statistics in order that any fluctuations would not jeopardise the overall strategy. The SEWRAC studies do not provide this quality of data, therefore Essex should have undertaken their own studies to assess the true state of waste in the County.

The whole of Chapters 3 and 9 need significant revision to rectify the defects on the data strategy. Before specifying - in detail, specifying the type of technology to be used to meet the future needs for waste disposal and the volume of waste to be committed to those options - a series of waste management options, the County Council should first establish a reliable baseline for waste flows. From my experience in other areas the only reliable way to do this is to base figures on site inputs, and where possible quantify the origin of the waste arriving at those sites. This is also recommended from the point of view of reducing waste since it is only by reducing landfill that other options will become viable (i.e., we can guarantee certain volumes of waste to those facilities). Reductions in landfill site inputs are also the 'leading edge' of the reduction strategies in Making Waste Work and in the Landfill Directive.

There are a number of problems with the existing data strategy. The tables on the following pages illustrate my interpretation of the figures in the plan, and highlight the deficiencies I can identify.

I begin in tables 1 to 3 by identifying the available void space. I would expect to have detailed figures for the inputs and remaining void space for each site. For example in the North West the Environment Agency publish these figures as a public document so that everyone can have access to this data. Hence my use of '??' in these tables - this is a deficiency in the data strategy which must be addressed. It is not satisfactory to have one figure for all the 'permitted' sites.

I am also dissatisfied with the breakdown of the figures into 'permitted' and 'potential'. It would be much simpler to breakdown the void space figures into:

- 'Licensed' - the void space that has a waste license and planning permission;

Table 1: 'Potential' Sites

	Void for waste type		
'Potential' Inert Sites	***Inert***	***Non-inert***	***Total***
LI.1 - Hollow Road, Widdington	350,000		350,000
LI.2 - Inworth Grange, Tiptree	1,100,000		1,100,000
LI.3 - Fringringhoe Road, East Donyland	240,000		240,000
LI.4 - Church Lane, Markes Tey	250,000		250,000
LI.5 - Keelars Lane, Wivenhoe	1,830,000		1,830,000
LI.6 - Essex Showground	290,000		290,000
LI.7 - St. Cleres, Danbury	600,000		600,000
LI.8 - Royal Oak, Danbury	600,000		600,000
TOTAL VOID:	**5,260,000**		**5,260,000**
'Potential' Non-inert Sites			
LNI.1 - Bellhouse, Stanway	110,000	970,000	1,080,000
LNI.2 - Sandon, Chelmsford	300,000	2,700,000	3,000,000
LNI.3 - Brittons Hall, Roxwell	150,000	1,410,000	1,560,000
TOTAL VOID:	**560,000**	**5,080,000**	**5,640,000**

Table 2: 'Permitted' Sites

	Void for waste type		
Inert Sites	***Inert***	***Non-inert***	***Total***
Barnards Pit, Hatfield Peveral	??		??
Tile Kiln Farm, Sible Hedingham	??		??
Warrens Lane, Wivenhoe	??		??
Keelars Lane, Wivenhoe	??		??
Langridge Farm, Nazeing	??		??
Netherall, Roydon	??		??
Sandon	??		??
Great Holts, Boreham	??		??
Chigborough	??		??
TOTAL VOID:	**3,327,000**		**3,327,000**
Non-inert Type 'B' Sites			
Elsenham	??	??	??
Hollow Road, Widdington	??	??	??
Martells, Ardleigh	??	??	??
Sandon	??	??	??
Belsteads Farm, Broomfield	??	??	??
Non-inert Type 'C' Sites			
Cumps Farm, L. Cranfield	??	??	??
Ugley Park, Ugley	??	??	??
Bellhouse, Stanway	??	??	??
Leca Works, Ongar	??	??	??
Boyton Hall, Roxwell	??	??	??
Pitsea	??	??	??
Barling	??	??	??
TOTAL VOID:		**9,608,000**	**9,608,000**

Table 3: Void Space Summary

	Void for waste type		
	Inert	***Non-inert***	***Total***
'Potential' Sites - inert	5,260,000		5,260,000
'Potential' Sites - non-inert	560,000	5,080,000	5,640,000
'Permitted' Sites - inert	3,327,000		3,327,000
'Permitted' Sites - non-inert	1,090,000	9,608,000	10,698,000
TOTAL VOID IN PLAN	**10,237,000**	**14,688,000**	**24,925,000**
Thurrock's void space	5,699,000	13,815,000	19,514,000

Table 4: Landfill requirement - void space balance

	Void for waste type		
	Inert	***Non-inert***	***Total***
Revised arising, 1996-2010, m^3 (from paragraph 3.27):			
Reduction/recycling		5,100,000	
Landfilling		**17,000,000**	
'Other management'		6,300,000	
TOTAL		**28,400,000**	
From London		9,400,000	
From Essex		17,000,000	
TOTAL LANDFILL	**11,700,000**	**26,400,000**	**38,100,000**
Less landfilled in 1996	1,300,000	5,070,000	6,370,000
Less Thurrock	5,700,000	13,820,000	19,520,000
TOTAL FILL '97 - '10	**4,700,000**	**7,510,000**	**12,210,000**
Void space balance, m^3:			
'Permitted' void	4,417,000	9,608,000	14,025,000
'Potential' void	5,820,000	5,080,000	10,900,000
TOTAL VOID	**10,237,000**	**14,688,000**	**24,925,000**
Surplus of void over fill, '97-'10, m^3 (void - fill):	**5,537,000**	**7,178,000**	**12,715,000**
Lifetime ([void / fill] * 14)	**30.49 yrs (+16.5 years)**	**27.38 yrs (+13.4 years)**	**28.58 yrs (+14.6 years)**

- 'Permitted' - the void space that has planning permission, and is likely to be released during the plan period ('availability' is an important factor at quarries that are being concurrently work for minerals and waste disposal);
- 'Un-worked' - the void space that is permitted, but cannot be considered 'available' because it will not be filled during the plan period - we could also include in this figure those minerals sites that have restoration conditions requiring infill; and finally
- 'Potential' - those sites that do not have permission, or a minerals consent requiring restoration by infill.

The figures for each site are presented in tables 1 and 2. The data is summarised in table 3. There are actually some gaps, and so some of the missing figures for inert waste are taken from paragraph 9.16. The results in table 3 must be compared to the figure sin paragraphs 9.16 (for inert waste) and 9.17 (for non-inert waste). The inconsistencies are:

- Permitted inert void is not 3.75mcm, my tally makes it 3.327mcm;
- Potential inert disposal at non-inert sites is not 0.46mcm, my tally makes it 0.56mcm;
- Therefore the final void space for inert waste in not 10.56mcm, it is 10.237mcm;
- The figure for 'permitted' non-inert void in paragraph 9.17 (9.91mcm) disagrees with the total given in Appendix 6 (9.608mcm) on page 128. I presume that the figure on page 128 is correct since it adds up to a total of 14.69mcm, as given in paragraph 9.17. If we use the 9.91 given in paragraph 9.17 the total is 14.99mcm.

Table 4 above then give my comparison of landfill requirements and available void space. Instead of using the regional statistics provided in Appendix 4 (page 117) of the plan 'alternative' figures have been provided in paragraph 3.27 of the plan. These are presented at the top of the table. The total waste arising is 28mcm, of which 17mcm requires landfilling. At this point I must raise concern about the 6.3mcm allotted to '*other management*' options. This equate to 450,000 tonnes per year. That is a significant amount of waste to handle by other options, and correspond to 1 or two incinerators should incineration be chosen, four or five materials recovery facilities (MRFs), and perhaps additionally as part of the MRF strategy five or six composting/digestion plants. This is a significant infrastructure development whichever strategy is chosen. Detailed proposals should be included in the plan.

Next the waste input from London, 9.4mcm, is added to the Essex waste, making a total requirement for landfill of 26.4mcm. Up to this point only details of non-inert waste are provided, but we now also find a figure for the total of inert waste to be landfilled in the final bullet point of paragraph 3.27 - 11.7mcm. The total requirement for landfilling is therefore 38.1mcm.

Next the waste that Thurrock will deal with is subtracted from the total. This concerns me since it relies that Thurrock's strategy assumes they will deal with this quantity of waste. If they took less waste, or if for example they decided to set up a significant recycling industry and accepted more waste, this would affect the overall projections, perhaps significantly, during the plan period.

Having subtracted Thurrock's contribution, the final volume of waste requiring landfilling is:

- Inert - 4.7mcm;
- Non-inert - 7.51mcm;
- Total - 12.21mcm.

It is at this point that the scale of landfill over-provision in the plan becomes clear. If we deal with just the permitted sites (i.e., 'permitted void' minus 'total fill')**, then there is enough landfill void to last until 2010 - no new landfill allocations are needed. If we then consider the 'potential sites' as well, there is an immense surplus of capacity. If we quantify this capacity based on 1997:**

- **There are 30.5 years of inert landfill, 16.5 more than is required, which will last until 2027;**
- **There are 27.4 years of non-inert landfill, 13.4 years more then required, which will last until 2024;**
- **In total, there is 28.6 years of landfill capacity in the plan, 14.6 more then is required by the County's method of calculation, and sufficient to last until 2025.**

This is totally unacceptable, and certainly is straying far from government guidance on restricting landfill. There is no requirement in guidance to have a 'landbank' of landfill. Therefore, given that the lead-in time for a new landfill is 2 to 3 years, there is no need to allocate landfill beyond 2012 or 2013. Paragraphs 3.22-3.35, paragraphs 9.8 to 9.19, Policy W3C and Policy W3D, relating to void space, therefore need radical revision.

I would also advise that rather than taking a county-wide approach, the county is split into areas. This is necessary in order to guarantee proximity between the sources of waste, the location of treatment centres and its final disposal. Practically this means aggregating inputs to various sites, and providing an area-based set of figures for waste disposal and remaining capacity. I would suggest basing the areas on existing local authority (Waste collection Authority) boundaries as follows -

- Area 1: Harlow, Epping Forest, Brentford, Basildon, Chelmsford;
- Area 2: Maldon, Rochford, Southend-on-Sea;
- Area 3: Uttlesford, Braintree;
- Area 4: Colchester, Tendring.

Paragraphs 3.3-3.4 and Policy W3A require major revision. They must properly reflect the flexible nature of the waste hierarchy through the use of BPEO assessment of individual applications, and lifecycle analysis appraisals of the plan strategy, to ensure that the development of waste capacity in Essex is carried out in a sustainable manner.

Policy W5A must be redrafted to take account of the banning of co-disposal, and providing for alternative means of management. I suggest that references to radioactive materials are dropped, although comments could still be contained in the plan within the reasoned justification. However, it must be made clear that radioactive waste is not 'waste' for the purposes of waste planning.

Policy W5C should be amended to remove references to 'co-treatment', and to recommend that anaerobic digestion of sewage sludge, with energy recovery, is likely to be BPEO in most circumstances.

Paragraphs 10.32-10.34 should be amended to provide a more flexible view of surcharge, applied on a site-by-site basis. Likewise the conversion factors in Appendix 2 should be qualified by reference to the different level of compaction that are achieve in practice, and noting the possible changes in density that will occur as the nature of the waste fill changes

due to greater levels of recycling and pre-treatment.

6. Relevance of SERPLAN/SEWRAC's Regional Guidelines

para. 3.19-3.25, p14-15; The regional context, and the efficacy of SERPLAN documents
paras. 5.1-5.22, p20-21; SERPLAN definitions of waste streams
Appendix 3, p114-116; SEWRAC Waste Classification

Critique:

SERPLAN/SEWRAC analyses of regional waste capacity and requirements (paras. 3.19-3.25) are no longer valid given the changes that will shortly arise due to the Landfill directive. Likewise SEWRAC's analysis of waste streams (paras. 5.1-5.22 and Appendix 3) is no longer valid in a system where waste recovery, and therefore the form of the waste and the manner in which it is collected (either bulk or segregated) becomes more important. SEWRAC's methodology has been developed around the principle that most waste will be landfilled. This is no longer a valid assumption.

Analysis:

Much of the reasoning for why the SERPLAN/SEWRAC analysis is incorrect is provided in the previous section. Although SERPLAN/SEWRAC '*guidance*' - and I must stress that this materials is only advice it has no statutory powers whatsoever - must be considered, it should not prevent Essex County Council from providing a sound data strategy on which to development relevant plan policies.

I suggest that all references to SERPLAN/SEWRAC guidance is qualified in this manner, and the flaws in their assumptions are properly examined.

7. Waste Importation

Policy W3B, p15; Importation of London's waste

Critique/Analysis:

I do not believe that the figure for waste importation from London will be valid during the plan period. The requirement to recycle, to pre-treat wastes and reduce the biodegradable content, will mean that bulk disposal will not longer be viable for waste collection in urban areas. If this material is then source-separated materials recovery becomes not only viable, but an essential part of the economic case. It is possible therefore that the quantities of bulk waste will reduce, and instead smaller quantities of inert or less polluting material will need final disposal.

The plan should therefore contain measures to reduce the supply of landfill towards the latter part of the plan period should imports fall.

8. Need for Capacity

Policy W3C, p15; Need for waste capacity

This policy, because of the poor data contained in the plan, is unworkable. In any case, from my analysis, there is no need for additional capacity during the plan period.

I suggest that it is revised along with the rest of Chapters 3 and 9 in order to provide greater clarity regarding the need for sites, and the levels of provision - i.e. plan period + Xm^3 - that the County Council consider appropriate.

Additionally, as mentioned in section 5, this policy should require that proposals for new sites are assessed on the capacity of areas within the county in order to guarantee proximity.

9. Environmental Effects, Risk Assessment and Health

para. 3.36-4.40, p16; Risk assessment and environmental assessment
paras. 4.22-4.32, p18-19; Environmental effects
Policy W4D, p18; Non-inert waste sites
paras. 10.8-10.13, p87; Pollution controls and environmental assessment
para 10.16, p88; Proximity
Policy W10E, p88; Buffer zones
Policy W10F, p88; Environmental effects
paras. 10.22-10.26, p89; Environmental pollution and development control

Critique:

The plan provide no means of quantifying the risks to human health and the environment, as required by the relevant objectives of the Framework Directive on Waste. This is a serious deficiency since the risk of waste development to humans and to the environment is an important part of European law, and increasing law in the UK is recognising the rights of the public to protection from hazardous or polluting land uses.

Analysis:

The Governments White Paper on the environment, "*This Common Inheritance*", outlines the Governments policy on the environment. In relation to planning and development control it states....

> "*Planning control is primarily concerned with the type and location of new development and changes. Once broad land uses have been sanctioned by the planning process, it is the job of pollution control to limit the adverse effects that operations may have on the environment. But in practice there is common ground. In considering whether to grant planning permission for a particular development, a local authority must consider all the effects, including potential pollution; permission should not be granted if that might expose people to danger.*"

Non-inert landfill sites are a hazard to health and the environment by virtue of the gases and liquids they emit. Even 'inert' site produce gas and some leachate, although at a lower rate

than non-inert sites. The plan must implement the requirement within the relevant objectives to protect the environment and human health on the basis of assessing the risk posed by waste development.

There are some clear amendments which need to be made to the plan to implement this:

- Paragraphs 3.36 to 4.30 must be amended to go beyond the notions of ordinary environmental assessment. Instead the plan should seek to implement the Government guidelines on risk assessment and management[21].
- Paragraphs 4.22 to 4.32 are too rooted in the ordinary planning consideration relating to any type of development. They do not address the specific aspects of waste development - not just landfills, but recycling, incineration, and biological degradation too. The issue should not be the 'mitigation' of effect. The process of evaluation must move towards the assessment of risk, the acceptability of those risks, and where risks cannot be minimised then development should not be permitted (see the 'precautionary principle' below).
- Inert waste is capable of producing pollution as well as non-inert waste. For example, there are sites which accepted 'inert' construction spoil which, at a later date, have cause pollution because of the low-level of chemical contamination in the materials. The issue in terms of groundwater protection is not the categorisation of the material - it is the risk posed to the environment by the leaching of the material. Therefore the policy for groundwater protection should operate not on the waste classification, but on the potential of the waste to leach polluting materials.
- Paragraphs 10.8 to 10.13 should, in the same manner as outlined above in paragraphs 3.36 to 4.30, assess environmental impacts on the basis of quantified risks.
- The list of 'proximity' issues in paragraph 10.16 is dominated by 'amenity' considerations. The list of effects must include health impacts, either 'real' or 'perceived' (see public perception' below).
- The manner in which the 250 buffer zone around sites is set in Policy W10E is completely arbitrary, and on the basis of recent evidence it is unlikely to prevent risk to neighbouring land uses. The buffer zone should be determined according to the nature of the process carried on at the site, and the potential for pollutants (either liquids, gases, noise or vibration) to propagate. Therefore buffer zones in excess of 250 metres should be the exception - buffer zone will be expected to be in the order of 500 to 2,000 in order to mitigate the risk from waste developments which emit large quantities of pollutants.
- Policy W10F must make reference to health effects, and the need to produce a risk based health assessment to demonstrate the safety of the development.
- As with paragraphs 4.22 to 4.32 above, paragraphs 10.22 to 10.26 are too concentrated on regulating amenity rather than assessing risk. The consideration of effects should be based upon an assessment of the risks to the environment and human health.

In addition to the above there are two important considerations that have been omitted from the plan.

Firstly, the '*precautionary principle*'. This is a concept which was first considered in '*This Common Inheritance*', and that has since been taken up in the European Community's Fifth Environmental Action Programme, and the UN's Agenda 21 Programme. The precautionary

[21] "*A Guide to Risk Assessment and Risk Management for Environmental Protection*", Dept. of the Environment, 1995.

approach urges that action should be taken, '*where there are good grounds for judging either that action taken promptly at comparatively low cost may avoid more costly damage later, or that irreversible effects may follow if action is delayed*'. This approach would also, from a policy point of view, advocate the adoption of policies and strategies at the earliest possible stage, rather than waiting to find 100% confirmation that the problem or situation actually exists.

In order to implement the precautionary principle - which is an essential part of the risk-based assessment procedure - I suggest that the following policy is inserted into the plan:

> "*In determining applications for waste development, the Waste Planning Authority will apply the precautionary principle in assessing proposals for development wherever there is uncertainty about the environmental impacts of the development, either by virtue of the direct impact of that development, or as a result of the cumulative impact of a number of developments.*"

Secondly there is the issue of the public's perception of risk. An important aspect of the planning system is the regulation of development in the public interest. The 'public interest' has, in greater part, much to do with the public's perception of hazards and risks from development. For this reason, and in light of the recent High Court decisions[22], the plan should also assess public perception. I suggest that the following policy is inserted into the plan:

> "*Public concern regarding the development, processes or emanations from a development, where relevant evidence is presented to support the public's objection, is a material reason for refusal. In such cases the submission of further evidence to justify the grant of planning permission will be required or planning permission will be refused*".

Together these amendments shift the basis of decision making in the plan from one of purely seeking to protect amenity, to a position where the evaluation of hazards forms the major assessment of the effect on neighbouring land uses and on the environment in general. Such changes have to be made in order to meet the requirements imposed by the Framework Directive on Waste to have regard to the *risk* to human health on the environment.

10. Integrating Waste Management Options

[whole plan]; Sequential actions to encourage integrated waste management
Chapter 6, p23-26; Waste recovery
Policy W6A, p26; Waste reduction

Critique:

Essex County Council have no real comprehension of how an integrated system of waste management operates, nor what legal and policy measures exist to implement such a system.

The sections of the plan relating to waste minimisation and recycling are banal, and show little understanding or enthusiasm for change. Essentially the plan is all about '*business as usual*' by encouraging excessive quantities of landfilling, while producing token statement on the

[22] *Newport Borough Council v. secretary of State for Wales and Browning Ferris* [1998] (JPL. 377-387) and *West Midlands Probation Committee v. Secretary of State for the Environment and Walsall Metropolitan Borough Council* [1997])JPL. 388-398)

value of the alternatives. Certainly, Policy W6A is not only tokenistic, it is an abdication of the County Council's legal obligations under the EC Framework Directive on Waste.

The plan must provide a structured transition from the current scenario of bulk disposal with minimal recycling to a scenario of bulk recycling with minimal disposal.

Analysis:

What is needed in this plan is a strategy for improving the level of waste elimination, minimisation, reuse, and reclamation. This is a requirement, along with a commitment to encouraging more sustainable manufacturing processes, within the relevant objectives of the Framework directive.

There are four particular 'problem areas' which the plan must address itself to, if it is truly to begin developing a sustainable waste strategy, are:

- ***The storage of waste prior to collection*.** This is not just in the sense of industrial or commercial land uses, but also with regard to domestic, agricultural and mineral wastes;
- ***The facilities for the collection of waste materials should be controlled to ensure that the relevant objectives are met*.** This 'problem' is probably the most broadly based since it could be interpreted as anything from the location of domestic dustbins or the maintenance of oil interceptors, through to the collection of bulk materials from manufacturing processes which might give rise to dust, odour or spillage of materials;
- ***The use of waste materials as part of development, for example the reclamation or re-grading of a site or as part of the construction process, even where this takes place within the same site.*** There must be safeguards on the importation, storage and use of this material, and its composition, the prevent environmental damage;
- ***The use of waste materials as part of the operations carried out on site, even where the waste materials arise and are used within the same site.*** The most obvious land use here is the reprocessing or recycling of waste materials, but other land uses such as animal feed manufacture, agriculture, and some industrial processes rely on the importation of materials which are the 'waste' of another process.

The precise control of these issues is not just a matter for the waste local plan. As noted in section 4 these responsibilities extend to the policies of local plans too. However if these operations are not considered within the plan then the requirements of the Directive, as far as the obligations on the planning system are concerned, will not be met.

Also, with regard to what strategy should be developed, it is not simply a matter of trying to move up the hierarchy. We must also tackle the issue of '*best practicable environmental option*'. There should be a requirement, in order to meet the environmental requirements of the Framework Directive on Waste, to demonstrate BPEO for waste development, including where possible lifecycle analysis of the materials being processed[23]. That means that even the recycling of waste should be subject to the sort of detailed assessment that we would subject a landfill or incinerator too - we should not automatically assume that recycling is good (indeed some outdated methods of recycling are extremely polluting).

[23] It is being proposed in the final draft of PPG10 (DETR, February 1998) that lifecycle analysis be part of an assessment system for waste management planning

In terms of being 'realistic' about waste minimisation and recycling, the shift from a system based primarily on disposal to one where 60% of waste is recovered will not be achieved without a radical change in attitudes to the management of waste and the value of resources. That means using, where possible, economic measures to promote a shift in policy. This process has already begun with levies such as the landfill tax. However the primary variable in any system of demand management will be the availability of alternatives to final disposal, and the level of final disposal made during the plan. **For this reason it would be far preferable to aim for a restrictive supply of landfill or incineration capacity in the plan, and then to take up this gap through other means - but in order to do this we have to guarantee these alternatives by identifying sites in the plan.**

If we plan for final disposal, and only have waste recovery bolted on as an afterthought – which is my interpretation of this plan – then the system of waste management will not change. In no way can the current policies on waste reclamation in the plan be considered to meet the requirements of the Directive.

In order to redress the imbalance within the plan the County Council must:

1. Undertake a search to find a sites, to be allocated within the waste local plan and/or district plans, where transfer stations can be located for the reception and bulking up of segregated municipal, commercial and industrial waste. The purpose of such transfer stations will be to bulk up waste for shipment to processing facilities so reducing transport impacts. Assuming waste arisings in Essex at 2Mt/year, around 80 such transfer stations will be required (average capacity 25kt/year).
2. Insert a policy to enable a search to find a sites across the County where material recovery facilities can be developed for the sorting and processing of a significant proportion of the municipal, commercial and industrial waste streams. The purpose of this is to provide the capacity to carry out as much of the processing as can be achieved in order to 'add value' to the recycled materials, and ensure that jobs and wealth are generated within Essex. Assuming waste arisings in Essex at 2Mt/year, around 14 or 15 such MRFs will be required (average capacity 150kt/year).
3. There must be a policy to require, as part of all local plans, proposals to be created to address the handling and use of materials in demolition and construction, both within sites and for materials that are taken off sites, ensuring that as much material as possible is reclaimed.
4. Consistent with (3) above, during the future revisions of the structure plan and minerals local plan the requirement for primary aggregates in Essex must be lowered in order to create demand for secondary materials. The precise level should be set in the minerals local plan.
5. In order to create an incentive to set up alternative facilities, they must set targets, and then set policies to implement these targets. I would suggest that the plan should seek to implement the following targets (these are discussed elsewhere in this report, but I have collected them here for the sake of clarity):
    - On the assumption that 90% of waste in Essex is currently landfilled. Reduce landfill provision by 33% by the year 2005[24], and 55% by the year 2010 (i.e., to 60% and 40% of current arisings respectively);
    - Consequent with the above, to recycle, reuse, minimise or eliminate 40% of waste arisings in Essex by the year 2005, and 60% by the year 2010;

[24] This is based on the '*Making Waste Work*' (Cm3040, DoE 1995) target

- Reduce the biodegradable content of waste being landfilled to 75% by the year 2005, and 45% by the year 2010[25];
- Consequent with the above, to ensure that all Class B/C waste that is 'treated' prior to final disposal before the year 2001[26];
- Co-disposal of industrial/hazardous wastes and ordinary controlled waste must be stopped after 2001, and such waste must be properly pre-treated and disposed of at dedicated sites. This will favour the development of the cleaner production processes favoured in the relevant objectives
- To increase the production of secondary aggregates (i.e., marketable material, not including bulk fill materials or landscaping materials) to 25% of primary aggregates production by 2005[27], and 40% by 2010.

6. Given that local planning authorities should have regard to the production, collection and reprocessing or disposal of waste under the EC Framework Directive on Waste, the plan should direct local planning authorities to demand a statement from developers on the precise proposals for how waste will be handled on the site, and where it will be disposed of.
7. As part of the overall strategy, there should be a policy to encourage – in tandem with the strategies of local plans – the regeneration and renewal of industrial sites in order that local industry can develop cleaner production systems.

11. Use of Biodegradation Products

Policy W7A, p27; Use of biodegraded materials

Critique:

The construction of this policy shows an obvious lack of understanding of the function of biological degradation processes in a waste management system. The policy is unrealistic and unnecessarily restrictive.

Analysis:

The purpose of pre-treating waste before disposal to landfill is not just a matter of recycling. There will always be materials that cannot be recycled and that will require disposal. The purpose of treatment methods such as anaerobic digestion or composting is to render materials as biologically inert as possible before landfilling. This prevents sites from producing large quantities of gases which can be a hazard, and which cause wider environmental impacts such as adding to the effects of climate change.

This policy should recognise that only the highest standard compost or digestate will be reused as a soil improver. For compost or digestate that is contaminated with other materials such uses are impractical and its use will be primarily be for site restoration or for filling voids.

[25] This is based on the EC Landfill Directive (Draft March 1998) targets

[26] This is based on the requirement in Article 6(1) of the Landfill Directive to pre-treat prior to landfilling

[27] This is based on the MPG6 (DoE, 1994) target

There are also problems with some waste streams - for example sewage sludge - because the waste contains impurities such as chemicals and heavy metals which make it unsuitable fir use in cultivation. In these circumstances landfilling is a viable options.

Composting and anaerobic digestion are valuable as a means of reducing the quantity of waste to be disposed of (by 30% for composting and up to 60% for anaerobic digestion), and for significantly reducing the polluting potential of organic waste streams. But it should never be expected that all the material produced by these processes will have beneficial afteruses. Policy W7A should be amended accordingly.

12. Incineration

paras. 7.36 to 7.48, p32-34; Incineration and RDF
Policy W7K, p33; Incineration

Critique:

Recent reports on the lifecycle analysis of waste management options demonstrate that incineration is not the an appropriate management options for mixed waste streams. The Coopers and Lybrand study for the European Commission actually rates incineration lower on the waste hierarchy than landfill. There is no objective argument to support the use of incineration as a means of dealing with bulk quantities of waste, or as a more sustainable alternative to landfill.

Likewise, the manufacture of RDF is a folly. Although it was promoted as a use for waste in the 1970s, it has no practical benefit for managing mixed waste streams. Essentially, all you are doing is creating a large number of waste incinerators with substantially lower pollution control standards then the large mass-burn incinerators.

All proposals for incineration in Essex should be resisted.

Analysis:

The main five myths promoted about incineration, which in some sense are reproduced in paragraph 7.45 of the plan, are:

- Incineration reduces the need for landfill;
- Incineration is a way of recycling energy;
- Incineration is safe;
- Incineration and materials recycling can work together;
- Incinerators solve the waste 'problem'.

"Incineration reduces the need for landfill"

There are many figures put forward for how much landfill space is saved by building incinerator plants. Incinerators do not mean we get rid of landfill - in fact the adoption of incineration creates wastes which themselves can be difficult to safely dispose of.

The Department of the Environment booklet on energy from waste1[28] states that, "*energy from waste plants reduce the waste for disposal by 90%*" (70% by weight). This statement is extremely 'economical with the truth. Studies of the waste streams associated with incineration, commissioned by the Government's renewable energy body ETSU[29], show that the real figure for the **whole** waste stream is about 50% (by weight - figure 1). The reason for the difference in figures is that the 'official' figure only includes waste burnt. In reality incinerators close for maintenance, and waste quantities vary over the year, so a significant quantity of waste still goes to landfill, 'diverted' from the incinerator.

There are problems with the disposal of the ash from incinerators. The bottom ash, while being described as 'inert' will leach pollutants such as heavy metals if it becomes wet. The 'fly ash', from the pollution control equipment, is extremely toxic and has to be disposed of as 'special waste'. There are few sites equipped to handle such large quantities of special waste. If we take as an example the 'flagship' of all incinerators - the SELCHP plant in London - it has to send its fly ash to a site near Cheltenham because no one else would take it.

Figure 1

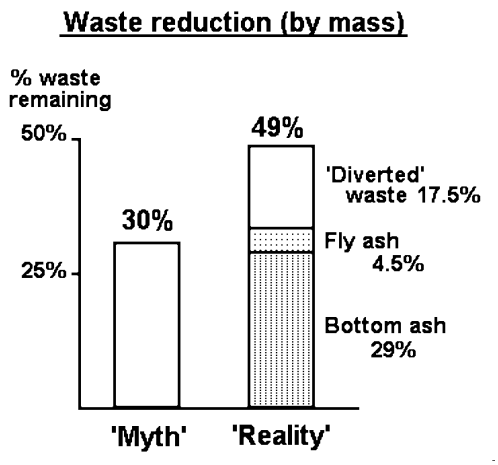

Table 5

Energy implications of plastics incineration	
Energy in manufacture[a], MJ/kg:	120
Energy from combustion[b], MJ/kg:	44
Efficiency of generation[c]:	0.33
Electricity produced[d], MJ/kg (b x c):	14.5
Energy efficiency of plastics incineration (d / a):	**12%**

"Incineration is a way of recycling energy"

Waste materials have two values: -

- the quantity of energy that was expended in their manufacture, and hence which must be expended again to replace the material;
- the quantity of energy that is released when the material is burnt.

For most materials the amount of energy produced by burning in incinerators is significantly less than that invested in their manufacture. This means that incineration is the 'worst environmental option' when compared to other solutions such as recycling or reuse. In terms of the practicalities of waste combustion as an energy source, if we take a traditional fossil fuel such as coal, coal contains more energy per unit volume than mixed waste (see table 5 for a worked example).

What, we have to ask, is the primary purpose of an incinerator - to generate power or to

[28] "Energy from Waste: Getting more value from municipal waste". DoE booklet 96 EP 137.

[29] Energy Technology Support Unit, Report B/RI/00341, M.R. Fox et. al (WS Atkins).

dispose of waste?:

- If it is to produce power, there are other generation options with lesser environmental impacts, and an equal or smaller capital cost - e.g., wind, micro-hydro and wave/tidal devices;
- If it is to dispose of waste there are other options with lesser environmental impacts - e.g., anaerobic digestion, source separation of recyclable materials, or better still waste avoidance/minimisation. More importantly, if the primary purpose of waste combustion is waste disposal, it cannot be regarded additionally as a renewable energy source;
- Another way to look at the issue - £50M (the cost of an average incinerator) would buy around 5 million low energy bulbs, and would save about 1 billion kWh of electricity - equal to the energy production of an average incinerator over 15 years. Do we therefore regard the sales of low-energy light bulbs as renewable?

"Incineration is safe"

The combustion of waste produces substances that are harmful to health. Some of these substances are harmful in extremely small quantities - such as dioxin. Others are produced in large quantities and add to the general 'background' levels of pollution.

There has been much publicity about the toxicity of dioxin, and the effects of dioxin from incinerators. In 1996 Her Majesty's Inspectorate of Pollution, one of the agencies which was later incorporated into the Environment Agency, produced a report on dioxin releases from waste incineration[30]. This report, supported by many in the incineration industry, concludes that there is little risk from the dioxin emissions of incinerators. However, the research which forms the basis of this report has recently been reassessed[31]. Combined with the uncertainties within the HMIP report - which are many - it can be shown that dioxin intakes have been significantly underestimated. This means that any significant new source of dioxin in a community poses a threat to health.

Although there has been much attention given to dioxin, the more 'conventional' emissions from incinerators have been largely ignored. For pollutants such as particulates (soot) or carbon monoxide it is difficult to find a comparison to give an idea of the size of discharge an incinerator represents. It is therefore necessary to convert the figures to some other meaningful quantity. If we consider an average 200,000 to 250,000 tonne per year incinerator, the particulate emissions from the chimney are around 100 kilos per day.

Incinerators also produce high levels of localised pollution. Although the tall chimney dilutes pollution in the air, at certain times emergency vents (called 'dump stacks') discharge pollution from the top of the pollution control plant with minimal dilution. The effect on communities within a few miles of the plant is significant.

"Incineration and materials recycling can work together"

The main attraction of incineration to local authorities is that it does not require any of their 'systems' to change. They can still collect waste in bulk without the need to ask their citizens

[30] "*Risk Assessment of Dioxin Releases from Municipal Waste Incineration Processes*", HMIP/CPR2/41/1/181, 1996.

[31] "*A critical reassessment of current human dietary exposure to PCDD's and PCDF's in the UK*", Miriam Jacobs and Paul Mobbs, 1997. In the proceedings of the International Dioxin Conference, 1997.

to separate it, and then they can deposit that waste in bulk at one central point. This poses the question as to whether working incinerators can really benefit materials recycling.

For an incinerator to operate it has to secure waste contracts with local authorities in the area. In order to ensure that incinerators work at maximum load, the operator must ensure a steady supply of waste. This puts obvious restrictions on the authorities in the area to divert waste to other waste management options, or engage in waste minimisation.

Another problem with the recycling side of things is that all materials have two economic values - one based on their value as recycled material, and one according to their potential to burn and produce electricity. From this perspective the burn value of glass and metal is negative - because they do not burn, and actually remove energy from the system as they heat up. Plastics and paper on the other hand have a great burn value. Balancing this, metal, glass, paper and plastics have a reclaim value, based on their economic value or the energy used in manufacture. Those materials which are extremely energy intensive to produce, but which have a high calorific value (such as plastics) will not be reclaimed. Even aluminium, because of the difficulties of segregating small items of non-ferrous metal, will be destroyed in the incinerator.

There is evidence emerging[32] that the practical effects of long-term contracts for incinerators work against the best interests of recycling. In mid-1995, Cleveland Waste Management signed a 25-year contract with Cleveland County Council based on projected long-term waste arisings of 310,000 tonnes. However, in the first year of the contract the region supplied only 248,000 tonnes - and the county and four borough councils which succeeded it incurred penalty charges of £147,000 because of the shortfall. The Assistant Director of Environmental Services at Stockton Borough Council, observed that the penalty clauses "*mean that fundamentally we are into waste maximisation.*" According to the Assistant Director, the councils, "*are already constrained by the contracts from doing even a modest amount of recycling,*" and the future of two materials reclamation facilities is in jeopardy.

"Incinerators solve the waste 'problem'"

The perceived 'problems' with waste at the moment are four-fold: -

- traditional landfill sites are filling up;
- waste management is unsustainable - huge quantities of resources are thrown away each year;
- landfill is becoming more expensive.
- The problems of landfill will not be solved by more incineration of waste. Landfill will still be needed for significant quantities of waste.

In terms of the 'sustainability' of incineration, it is no better than landfill. It is still wasteful of resources which could have been recycled, reused, or not produced at all.

Finally, when considering costs, it is misleading the public for any body to state that incineration will be cheaper in the longer term. It is true that the costs of landfill are rising because of higher technical standards and the landfill tax. However, it is likely that in the next

[32] For example, ENDS Journal, November 1996 - "*Emission deadline heralds new era in municipal incineration*"

few years the landfill tax will be extended to cover incineration. Also, the emission standards for incinerators will be soon be raised yet again, and the terms of most waste contracts mean that these costs will pass directly to local authorities.

In my opinion, the use of incineration in Essex should be severely restricted as there are no objective grounds to support its use over other viable waste management options.

13. Landfill Gas

para. 7.49, p34; Landfill gas and health
Policy W7H, p34; Landfill gas

Critique:

Paragraph 7.49 and Policy W7H are woefully inadequate since they do not seek to control the health impacts of landfill gas generation and utilisation. They must be redrafted to acknowledge the health impacts of landfill gas, and provide a framework for controlling the hazards from landfill gas.

Analysis:

Landfill gas is usually made up primarily of carbon dioxide and methane. Additionally there are a wide variety of other gases that are present in relatively small amounts (3 to 5% by volume). It is estimated that as many as 350 different trace compounds may be found and most published research studies indicate that 100 to 200 compounds can be encountered at each site.

The production of methane and other landfill gases is unpredictable. The Energy Technology Support Unit claimed that "*no two sites are the same and prediction remains to a large extent a black art.*" [33] Various studies for government departments have predicted gas production between 135 $m^{3/}$tonne and 400 m^3/ tonne of biodegradable refuse. However it is not only the gas production rate which is important but also the efficiency of gas capture. Claims for the efficiency of gas capture vary widely. Independent critics have pointed out that 30-50% of methane leaks over the lifetime of a well-engineered site. Evidence to the House of Lords from the European Commission[34] disputed UK claims that landfill gas capture can be as high as 90%, giving a best performance of 60-70%. It is notable that a recent report for the Department of Trade and Industry[35] comes to similar conclusions. The authors stated that: economically viable power generation may exploit only between 30% and 50% of the potentially extractable landfill gas production (i.e. only about 18% to 30% of the total landfill gas production). 70% to 82% of gas would not be used for power generation and at least 40% would escape as fugitive emissions.

[33] Prospects for Renewable energy in the Norweb area ETSU/NORWEB 1989

[34] *ENDS 276, p.33, January 1998*

[35] Methodologies for the assessment of the UK Landfill gas resource, ETSU BWM/00452/REP, Consultants in Environmental Sciences Ltd 1997

This low capture rate, even on modern landfill sites, is important in terms of the trace gases as large volumes are likely to leave the site. Toxicity is raised as an issue in paragraph 3.5 of Waste Management Paper (WMP) 27, but the emphasis in the text is on the obvious occupational risks. More detail is given in chapter 9 of WMP27 which considers the development of land around landfill sites. Although WMP27 does not specifically consider development of a landfill next to existing land uses we should act on the basis that the same precautionary assessment procedure must apply.

The composition of the gas also varies over time as the different stages of decomposition take place. In addition to the production of chemical compounds by the direct breakdown of the waste, and by the action of bacteria, volatile substances in the waste fill can be driven off as gas by the heat generated during decomposition. Although obviously hazardous materials such as solvents are usually dealt with as '*special waste*', such substances can legally be incorporated within ordinary wastes provided the content falls below the threshold criteria specified in the Special Waste Regulations. Domestic, commercial and industrial waste is also very likely to contain some material that, in isolation, would be classed as '*special*'.

Appendix A of WMP27 gives a brief breakdown of the compounds that make up trace gases. A more detailed breakdown of landfill gas concentrations is given in WMP26.

As noted above, the emphasis on toxicity in WMP27 is related to occupational exposure. The Health and Safety Executive's '*EH40 series*' of annual reports list occupational exposure standards. However in relation to assessing the effects of emissions on public health these limits are not acceptable. There are no statutory long-term exposure levels (LTELs) set for the type of pollutants found in the trace gas from landfills - the procedure to date has been to drive them from existing occupational levels. Recent analyses[36] of the risks from landfill gas have clearly shown that exposure to landfill gas that has undergone little dilution does pose a potential health risk. There are many substances in landfill gas which are present above their occupational exposure limits, and certainly above long-term exposure limits.

The publication of the EUROHAZCON study in *The Lancet*[37] of the possible effects of landfill on foetal development has fuelled the debate on landfill gas and health. The EUROHAZCON study shows a positive association between proximity to a landfill and the incidence of birth defects for a wide range of landfills around Europe. As the study relies on epidemiology it cannot prove causality. However, gas emissions from modern landfill are of such a level to indicate that there is a plausible linkage between landfill and health. In these circumstances a precautionary approach must be adopted.

To demonstrate the potential link between landfill emissions and health it is necessary to develop a *source-receptor model*. Such work was undertaken for an appeal inquiry in Lancashire earlier in 1998. The results of modelling exercise showed that for unflared landfill gas the long-term exposure limit (LTEL) could be exceeded for two compounds - benzene and vinyl chloride. Both compounds are known carcinogens. If we include other effects such as the addition or synergism between substances, or the current exposure levels then it is likely that other groups of chemicals could also exceed the LTEL. This assessment suggests that there is a real possibility for high off-site concentrations of toxins to be produced from landfill gas. There are therefore obvious implications for public health should landfill gas be

[36] Evidence from Mobbs' Environmental Investigations on landfill gas risk to the appeal by UK Waste Management Ltd for Round 'O' Quarry, Cobbs Brow Lane, Skelmersdale, Lancashire. Appeal Ref. APP/Q2371/A/97/288746

[37] '*Risk of Congenital Abnormalities Near Hazardous Waste Landfill Sites in Europe: the EUROHAZCON Study*', The Lancet, vol.352, p423-427, 8th August 1998. A copy of the article is provided in Appendix 1.

vented within 400 to 500 metres of any dwelling or occupied structure.

Data on flare emissions is provided in the Environment Agency report '*Guidance on the emission from different types of landfill gas flares*'[38]. The report recommends that operators of landfill sites should undertake or commission an environmental assessment of the emissions from proposed flares. This advice should be implemented in the local plan.

The plan must be amended to require human health and environmental risk assessment for the venting or combustion of landfill gas.

14. Landfill Mining

Policy W7J, p34; Landfill mining

Critique/Analysis:

This policy is clearly unreasonable since it prevents all landfill mining. It is possible that many sites which are effectively mono-fills, such as those for mineral waste or homogenous industrial waste such as PFA or slag/tailing, could be effectively and safely excavated. This policy is overly restrictive and should be redrafted to provide a more positive framework for assessing proposals.

15. Site Selection Critique

Chapter 8, p35-39; Site selection
Policy W8A/B, p38; Site selection policies
para. 10.17, p88; Non-landfill proposals

Critique:

There appears to be no objective criteria for site selection and evaluation. For example, as identified earlier, the 'other management' waste stream identified in section 5 of this report total s 450,000 tonnes per year. However the plan identified 8 'major waste management' sites each, according to paragraph 8.11, of 200,000 tonnes per year.

The statement in paragraph 8.8 that, '*the identification of suitable sites for major waste management facilities does not include any indication or preference for the activities on site*', is in complete contradiction to the principle that plans should be clear and certain. This issues has arisen recently with the Hertfordshire Waste Local Plan and the Cheshire Waste Local Plan which operated 'areas of search' policies for landfills (Cheshire) and incinerators (Hertfordshire). Both these policies have been abandoned in disarray because of the uncertainty generated. In this case we have the same problem from the opposite end - a number of sites but with no indication as to what will be sited there.

[38] Report No CWM 142/96A

Policies W8A and W8B fail to properly implement the relevant objectives of the EC Framework Directive on Waste. No only do they fail, through uncertainty, to provide for an '*integrated and adequate network of sites*', but there is no requirement in the policies to address the risk to human health and the environment.

Finally, given that Chapter 8 contains the '*non-landfill*' proposals, there is some uncertain duplication of advice between Chapter 8 and paragraph 10.17. This seems to indicate that other sites would be potentially suitable. This introduces more uncertainty. The relationship between the 'major' and 'minor' facilities must be properly explained, and enforced through policy.

Analysis:

I have seen other examples of this type of 'woolly' policy in other plans, and the uncertainty created has meant that it was defeated during the local plan inquiry. In practical terms if the policy were to survive into the adopted plan I do not believe that it would encourage sustainable waste management facilities to be set up because of the uncertainty involved.

I have grave concerns regarding the capacity aspects of this Chapter. Eight 200,000 cubic metre per year sites represents 22.4 million cubic metres of waste capacity over the plan period. That is 79% of **all** the waste arising identified in the plan. That means that either the landfill strategy is even more massively over-provided than it is already, or it means that these 'major waste management' sites are being allocated, with no hope of development, and therefore represent a significant blight on the areas surrounding them.

I do not believe that this is a sound policy since it contradicts the principle of the clarity and certainty of plans. The sites selected should have been evaluated on the basis of transparent assessment procedures. The sites should also have an identified use in order that the environmental impacts each type and scale of facility creates can be mitigated. More importantly, the development of the plan strategy must inform the selection of management options, and in turn that should specify the type, number and scale of facility required. Only then can this policy work effectively.

16. Landfill

Chapter 9, p58-60; Landfilling of waste
Policy W9A/B, p58; Permitting of landfills/landraise

Critique:

The landfilling chapter is fatally flawed. Not only are the calculations for void space in error, and provide for an excessive over-provision of capacity, but the whole basis of the chapter is flawed because of the failure to take account of the Landfill Directive. The effects of the directive are easily understood, and have been openly outlined by government (for example, the letter[39] to chief executives and Waste Disposal Authorities noted earlier).

[39] Letter from Martin Nesbit, Team Leader DETR Waste Policy 4, to Chief Executives, 29th May 1998

Secondly, the permitting of landfills and landraise sites under policies W9A and W9B must be subject to an assessment of the risk to human health and the environment, and to determination if the facility represents BPEO.

Analysis:

The effects of the landfill directive have been clearly known for some time. It is only wishful thinking in the waste management industry - over issues such as co-disposal - that has prevented action being taken on these matters sooner. In the letter from DETR to chief executives and WDAs in May the effects of the Directive were clearly outlined:

> "*Assuming the directive will enter into force in 1999, and is transposed into domestic legislation by 2001 (Article 18 requires this to be completed within 2 years) the timetable for implementation will be:*
>
> *Article 5.2:* *From the baseline of the total biodegradable municipal waste (by weight) produced in 1995, the amount of biodegradable municipal waste going to landfill must be reduced to:*
> - *75% by 2006 (2010*);*
> - *50% by 2009 (2013*); and*
> - *35% by 2016 (2020*).*
>
> **These targets can be extended by four years for Member States, such as the UK, which in 1995 landfilled more than 80% of their collected municipal waste.*
>
> *Article 6.2-5:* *Co-disposal will be banned in 2001*
>
> *Article 6.1:* *All wastes must be pre-treated prior to landfilling in 2001*
>
> *Article 5.3:* *The landfilling of liquid, corrosive, explosive and clinical wastes and any other wastes not fulfilling the acceptance criteria will be banned from 2001 (2002 in existing hazardous waste sites).*
>
> *Article 5.3:* *The landfilling of whole used tyres will be banned from 2003 and shredded tyres from 2006.*"[40]

Chapter 9 must be redrafted to take account of the significant changes to the structure of the waste management industry that will need to take place in order to meet these objectives.

Finally, Policies W9A and W9B must be amended to require that every application produce an analysis for BPEO, and a human health and environmental risk assessment.

[40] Annex to the DETR's letter on the 'Landfill directive'

17. Material Considerations in Development Control

para. 10.4, p86; Material considerations in development control
paras. 10.8-10.9, p87; Planning and pollution control

Critique:

There appears to be confusion in the mind of the County Council as to what a '*material consideration*' is, particularly in regard to environmental pollution.

The determination of what is a 'material consideration' goes much wider than envisaged in paragraph 10.4. Also, in paragraph 10.8/10.9, the notion that there certain aspects of environmental pollution are 'out of bounds' because of the role of the Environment Agency is completely wrong. These sections need amending.

Analysis:

There is no one cut off point between the two camps of planning and pollution control. There is in fact significant overlap. "*The point where pollution concerns can be left to the pollution control regime is a matter of planning judgement for the decision maker. His decision to leave a pollution control matter to be dealt with by the pollution control legislation is not susceptible to challenge unless it is unreasonable in the Wednesbury sense*".[41]

Emphasis is often on the separation of planning and pollution control to the point where they are mutually exclusive. This is often justified by reference to the Gateshead case (and PPG23 para. 1.3). This is a misrepresentation of the issues that were the subject of that appeal. It was not the division of planning and pollution control which were at the core of that appeal, it was the Secretary of State's powers to intervene and reach a different conclusion.

We must therefore question the extent to which the planning system has the responsibility to ensure 'full coverage' of pollution issues. This of course means that decision makers in the planning field would have to act against current guidance by seeking to address those areas not adequately investigated by pollution control, where they can be shown to be material to the case. This will of course lead to situations where Inspectors and planning authorities may have to consider taking it upon themselves to refuse permission for development after appraising the position of the pollution control authority. This is again not excluded from the Gateshead decision, and was actually foreseen (paraphrasing Lord Justice Glidewell) in the decision of that case:

> "*If it had become clear at the inquiry that some of the discharges were bound to be unacceptable… the only proper course… should have* [been to*] refuse planning permission*".

A further issue arises with the consideration of waste issues. It is the one area of environmental law and planning where there is a <u>legal requirement</u> for the local planning authority to consider pollution issues. The Part 1, Schedule 4 of The Waste Management Licensing Regulations makes planning authorities the '*competent body*' for the taking of '*any specified action*'. 'Any Specified action' extends to the making of plans under Part II of the

[41] '*A Burning Issue? Planning Controls, Pollution Controls and Waste Incineration*', Tony Kitson and Russell Harris [1994] JPL 3-7

Town and Country Planning Act.

There is the note in paragraph 2(2) of Schedule 4 *that 'nothing… above requires a planning authority to deal with any matter which the relevant pollution control authority has the power to deal with*'. This seemingly absolute position is not reiterated in the DoE Circular[42] that accompanies the regulations, and which clarifies the duties of planning and pollution control authorities in paragraphs 1.46 to 1.56.

There is in law a positive requirement for 'competent authorities' to evaluate every proposal in terms of the relevant objectives. This is reinforced in paragraph 1.47 of Circular 11/94 Annex 1 paragraph 1.47 states:

> *"The general duty in paragraph 2(1) [of Schedule 4 to the 1994 Regulations] means that in exercising the specified functions authorities must always consider the objectives of the Directive and aim to determine decisions ... in line with them"* [emphasis added]

This is the language of materiality (to consider) but the duty imposed by the relevant objectives is far more onerous than this implies. Paragraph 2(1) of Schedule 4 to the 1994 Regulations actually requires that:

> "*2(1) …the competent authority shall discharge their specified functions, insofar as they relate to the recovery or disposal of waste, with the relevant objectives*" [my emphasis]

Insofar as the planning authority are a competent authority, they must be able to demonstrate the application of the relevant objectives. In terms of role, planning authorities assess 'damage' to interests of acknowledged importance. This of course gives them a more holistic view than the Environment Agency who can only consider what is before them in a waste license application. But beyond that, a planning authority has a much greater freedom to identify and definite 'harm' to interests of acknowledged importance (see PPG23, para. 1.35).

Paragraph 3.2 of PPG23 gives a long list of material considerations to be considered in the determination of applications - this is broadly similar to those given in paragraph 10.4 of the plan. But in addition to these 'standard' criteria for considerations there are two other significant directions in this section:

- In paragraph 3.1 it notes that determinations must be made in accordance with relevant EC directives;
- In paragraph 3.3 it notes that there are other issues which pollution control authorities take responsibility for, and advice should be taken on these issues.

There will of course be some overlap between these two considerations. Waste licensing is the responsibility of the Environment Agency, and any waste applications will require consultation with that Agency. But at the same time the articles of the EC Waste Framework Directive which forms the basis of the Waste Management Licensing Regulations also have direct effect on the determination of the planning authority.

Further guidance can be found in many other government policy statements. For example

[42] DoE Circular 11/94, '*The Framework Directive on Waste', April 1994*.

'*This Common Inheritance*'[43] notes in paragraph 6.43 that the potential pollution dangers constitute a relevant consideration and that planning permission should not be given if the result is to expose people to danger.

There is also the overarching requirement in government policy to ensure that development is *sustainable*. Government guidance defines sustainability as[44]...

> '*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*'

In the consideration of sustainability therefore we are not only concerned with the immediate effects of development. We must also consider the longer term intergenerational effects. For example, it can be demonstrated that the seepage from a landfill will over time pollute a potential drinking water source then this such a development is clearly unsustainable.

In parallel with the concept of sustainability is the '*precautionary principle*'. This is explained very clearly in the context of environmental protection as part of the DoE's guidance on risk assessment and management[45]. The definition used is taken from 'UK Sustainable Development Strategy'...

> "*Where there are significant risks of damage to the environment the Government will be prepared to take precautionary action to limit the use of potentially dangerous materials or the spread of potentially dangerous pollutants, even where the scientific knowledge is not conclusive, if the likely balance of costs and benefits judges it*".

The effect of this principle is therefore that...

- where uncertainty exists about the environmental effects of any development;
- where the possibility exists that the effects might lead to irreversible damage to the environment
- and where the costs of repairing the damage is far greater than the costs of modifications to the development or adopting other solutions…

> *then* the development should not be allowed to take place in its proposed form.

The position taken in the draft plan therefore is not, in my opinion, legally correct. It is clear on an examination of the available guidance that in relation to waste disposal and recovery the consideration of environmental pollution and the effect and extent of that pollution is an implicit requirement in law. This is because European and UK legislation require that such issues be considered in relation to waste. It is also a key consideration in terms of sustainable development that the long term intergenerational effects of a development, the need to exercise precaution where the effects are uncertain, are also a important guideline within the determination of planning applications.

I suggest that the plan is amended to reflect the legal position of the 'materiality' of environmental pollution.

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[43] "This Common Inheritance - Britain's Environmental Strategy", Cm1200, HMSO 1990.

[44] Para. 1.7, "*Sustainable Development - The UK Strategy*", Cm2426, HMSO January 1994.

[45] Dept. of the Environment publication, "*A Guide to Risk Assessment and Risk Management for Environmental Protection*" [Dept. of the Environment, 1995].

18. Environmental Appraisal, SEA and LCA

Chapter 11, p91-101; Environmental appraisal

Critique:

The document that the County Council has provided is an environmental appraisal of the plan, carried out in general accordance with the guidelines set in the DoE's '*Good Practice Guide*'. However in my view there are two main deficiencies:

- The decisions made in the evaluation procedure have no clear basis, and therefore are not validatable. For all that can be gleaned from the content of the report, the results could have been arrived at by rolling dice. There appears to have been no formal appraisal procedure used to produce the results.
- There has been no attempt to create a '*compatibility matrix*' in order to check the conflict between policies of the plan.

Analysis:

The County Council should conduct a 'strategic environmental appraisal'.

Strategic Environmental Assessment (SEA) has been developed from the process of 'environmental assessment' which has been practised for many years. However rather than look as a single development, the purpose of SEA is to provide an overview of impacts and the capacity of the environment to handle the impact over a large geographical area.

SEA has been defined as:

> "*The formalised systematic and comprehensive process of evaluating the environmental impacts of a policy, plan or programme and its alternatives, the preparation of a written report on the findings, and the use of the findings in publicly-accountable decision-making*".

The basic SEA process involves the following steps:

- identify the critical environmental/sustainable development issues with which the decision maker must deal with;
- assemble and consolidate the best available scientific information concerning these issues;
- applies a process that considers this scientific information in combination with the judgements of the best available technical experts to produce the best possible assessment of the risk that each issue poses to ecology, human health, and the quality of life;
- establishes, based on these assessments of risk, relative rankings of the issues with regard to their separate risk impacts on ecology, human health, and the quality of life, and confirms these rankings with the public by a participative public process that culminates in the development of a single integrated ranking of environmental risks.

The principal assumption behind SEA is that sustainable development considerations and policy, as reflected in policy and planning documents, is not an accurate representation of the true environmental risks to human health or ecology. Instead the issues that are

addressed through policy and planning guidelines tend to reflect concerns which have high political content, that have high public visibility, and that are particularly abhorrent. Other issues that are not as obvious to decision makers and the general public, but which may represent relatively high risk to human health and the ecology, may receive little or no attention. The result is the potential for a serious misallocation of public resources and the distortion of sustainable development and environmental policy.

For example, in response to the need to recycle local authorities may develop 'bring banks' for glass, often served by cars. But if someone drives in a car for one mile and only takes a few kilos of glass the energy and pollution benefits of recycling are negated. It is not therefore sound to base recycling policy solely on a network of bring banks.

The environmental appraisal of development plans has been developed over recent years as a means of gaining more information about the potential effects the policy in the development plan will have. However there are a number of criticism with regard to how this process is carried out:

- There is no sense of objectivity in appraisals – almost every appraisal of a plan I have seen over the past few years has been based on the value judgements of the officer writing it.
- The categorisation of risks into a number of categories adds to the uncertainty and inaccuracy of the results. In many appraisals I have reviewed the "*don't know*" or "*uncertain effect*" is often used even though, if a little research were carried out, the results are readily quantifiable.
- Often the appraisal of plans involves the consideration of other policy documents, and not the consideration of actual effects. Hence the justification of a good effect can be related to other government policy statements which themselves have not been subject to appraisal, or which were not intended for that purpose.
- The greatest drawback is that environmental appraisal does not give a realistic comparison between strategy options, and it is nearly always applied when the decisions over strategy has been taken. This makes it useless as a decision making tool.

As noted above, environmental appraisal is not a sufficiently rigorous assessment procedure to realistically determine the effects of differing development strategies. Assessment of environmental capacity are realistically possible on the basis of current baseline data, but the scope of the criteria and the accuracy of the assessments will improve as data collection and collection improve. Given these factors I believe that we should apply the process of SEA to the development of proposals in structure plan as a way of meaningfully assessing, in a clear and transparent manner, what future impacts will be.

Until the County Council produce a proper SEA of the plan we can have no confidence in the efficacy of the proposals in the deposit draft of the plan. I recommend that such a study is carried out before the local plan inquiry.

19. Monitoring, Review and Indicators

Chapter 12, p102; Monitoring and review

Critique/Analysis:

'*Development Plans - a good practice guide*'[46] set out specific guidelines on how monitoring of plans should be carried out, and this specifically identifies (paragraph 5.12 and shaded box on page 105) that policies should include performance measures. In terms of monitoring, this cannot meaningfully take place unless performance indicators, targets and objectives are set. The monitoring framework set out Chapter 12 of the plan is insufficient.

Additionally, the monitoring requirements for the local plan are the perfect place to set '*sustainability indicators*', alongside the standard set of criteria used to monitor local plans. These indicators could be taken directly from documents produced by bodies such as the Local Government Management Board, or for more locally relevant indicators, a short public consultation could take place.

20. Errors in the Glossary

Appendix 2, p108-113; Glossary

Critique/Analysis:

There are error in the bibliography:

- **Aquifer** - the term does not only apply to 'exploitable' water resources - it applies to the presence of water within any porous rock strata.
- **Bale** - the densities for baled waste are on the low side - modern baling machines achieve much higher compression of the waste, hence greater density. I would suggest 1 to 1.5te/m^3.
- **Containment** - lined landfills do not prevent the escape of leachate. Also, many hazardous components of leachate are not degraded - they just change their chemical form. In any case the requirement to pump leachate means that often there is a deliberate release, albeit of 'treated' effluent, into the environment. This is significantly different from the scenario envisaged in the glossary.
- **Co-disposal** - There is no benefit from co-disposal, and in any case this will be banned from 2001.
- **Liner** - liners do not prevent leachate from entering the environment. They merely delay the time taken to enter the environment and restrict the rate at which leakage takes place.
- **Methane** - Methane is also an asphyxiant.
- **National Rivers Authority** - this body no longer exists, and all its powers have been transferred to the Environment Agency.
- **Reduction** - I find the term 'reduction' as applied to the volume reduction of waste rather tenuous. Volume reduction is a treatment process - it does not actually reduce the mass of the waste, it just squeezes air or fluids from the voids within it, and compacts the

[46] Dept. of the Environment, '*Development Plans - a good practice guide*', HMSO 1992.

materials, in order that it takes up less volume.

- **Stabilisation** - I find the notion that stabilisation can take 'longer than 20 years' rather entertaining. Current policy is for stabilisation within one to 1.5 generations, which is taken as 60 to 90 years. In practice modern containment landfill does not stabilise for at least 1,000 to 10,000 years because of the restriction of fluid migration through the site.
- **Waste (Directive Waste)** - this is a rather anaemic definition of Directive waste. The full definition is given in section 4 of this report.
- **Waste Regulation Authority** - This exists in name only. It should be specifically stated that waste regulation is the responsibility of the Environment Agency.
- **Waste, controlled** - this is not the precise definition under the Controlled Waste regulations 1992, and it does not properly explain the relationship between 'directive waste' and 'controlled waste'.
- **Wastes, hazardous** - this does not explain the relationship between the terms 'hazardous', 'special', 'difficult', etc. It should also be specifically noted that the classification of the 'hazard' is dependent upon particular concentrations - it does not this, but it does not explain how the action levels for concentrations operate.
- **Waste, special** - this is not the correct definition of special waste. Also, The Special Waste Regulations 1980 have been replaced by the 1996 Regulations.
- **Abbreviations** - some of the abbreviations used do not use the proper SI units: kg not Kg; Mt not mt; kt not tt.

It is interesting to note that the term '**Bioreactor**' has been omitted from the glossary. Also there is no detailed term do describe '**Landfill Gas**' or '**Trace Gases**'.

21. Errors in the Bibliography

Appendix 9, p141; Bibliography

Critique/Analysis:

The bibliography contains the following errors:

- The EC's fifth Environmental Action Programme is being replace at this moment by the Sixth Environmental Action Programme.
- Special Waste Regulations 1980 have been replaced by the Special Waste Regulations 1996 (and have since been amended in 1997).
- EC Framework Directive on Waste has been amended a number of times - these should be included (directives 91/156/EEC and 91/692/EEC)
- There are two 'Environmental Protection Act 1990' entries - I would suggest that the second should be the 'Environment Act 1995'.
- I would suggest that PPG1 is added to the list.
- PPG7 was replaced in February 1997.
- The NRA 'Policy and Practice for the Protection of Groundwater' has been replaced with a new Environment Agency publication of the same title in 1998.
- PPG23 is under review, and (confusingly) many people are actively using the draft

PPG10 alongside it to update the government's advice. Therefore reference should be made to its imminent replacement(?) by PPG10.

- Reference needs to be made to the Planning and Compensation Act 1991.
- The Treaty of Rome 1957 have been massively amended, particularly in regard to environmental issues (under Article 130) by the Treaties of Maastrict and Amsterdam.
- Waste Management Paper 26 is dated 1986.
- Reference should be made to the Royal Commission on Environmental Pollution's 12th Report, '*Best Practicable Environmental Option*', 17th Report, '*Incineration of Waste*'; 19th Report, '*Sustainable use of Soil*'; and the 21st Report, '*Setting Environmental Standards*'.
- Reference should also be made to the House of Lords European Communities Committee 17th Report on '*Sustainable Landfill*', and the House of Commons Environment, Transport and Regional Affairs Committee 6th Report on '*Sustainable Waste Management*'.

22. Need to Consider Risk and Health Effects in Applications

Appendix 11, p146-149; Planning applications, risk assessment, health issues and public opinion

Critique/Analysis:

The reasoning behind this is covered in section 9. Planning applications must assess the risk to the environment and human health. This requirement should be written into the guidelines for planning applications.

23. The Proposals Map

Proposals map; Adequacy of proposals map

The proposals map does not contain a clear indication of the policies in the plan. For clarity the plan should include:

- The London Green Belt;
- Designated areas of 'high landscape value' or other such classifications;
- Land liable to flood due to sea-level rise (from Env. Agencies predictions);
- The boundaries of the waste collection authorities;
- Rail lines as well as the primary roads network.

END