



# State of Medway Report

## Waste

Updated January 2012



# State of Medway Report: Waste

## January 2009

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## State of Medway Reports

This is one of a series of factual reports that were first produced in 2008 to inform the preparation of Medway's Local Development Framework or LDF. Each deals with a specific topic and draws together available information from a variety of sources.

The reports were intended to establish the current position and a baseline for further work. They also helped in highlighting gaps in the information base.

Each was updated in January 2012 to provide an updated baseline and inform the independent examination of the Medway Core Strategy.

To monitor progress being made on the LDF please regularly check our website at [www.medway.gov.uk/ldf](http://www.medway.gov.uk/ldf)

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### 2012 Update

1. Relatively little has changed in relation to waste collection, handling, treatment and disposal in Medway since this report was first produced in 2009, other than the letting of new municipal waste contracts. Accordingly, rather than updating the whole paper, this short update has been added at the beginning for ease of reference.
2. Medway Council let a series of new municipal waste collection and disposal contracts in October 2010. The contracts are for varying terms but with the main one for disposal having a 25 year term.
3. Dry recycling material (with a dedicated kerbside collection) is taken to a Materials Recycling Facility (MRF) at Rainham in Essex. This includes plastics, cans and foils, mixed glass and paper/cardboard. Any material that cannot be recycled or recovered is disposed of to landfill on an adjoining site. This contract is for 7 years with an option for a 2 year extension.
4. So called 'wet' recycling material (green and food waste) is again collected at the kerbside on alternate weeks to the dry material. This is taken to an in vessel composting facility at Ridham Dock, near Sittingbourne. This is subject to a 15 year contract.

5. Electrical, metal, battery and other waste streams collected at the three Council owned civic amenity sites are covered by a number of smaller contracts of varying lengths with most material being shipped out of the area to specialist recycling facilities.
6. General waste that cannot be recycled is collected weekly and taken to the South East London Combined Heat and Power Plant (SELCHP) for incineration. Residues from that plant are landfilled at a facility at Ockenden. The contract period is 25 years.
7. Bulk transfer facilities are located on a site in the Medway City Estate, alongside depot facilities.
8. As a result of these arrangements there is no current need for new facilities to deal with the municipal waste stream within Medway, other than improved depot facilities. These are likely to be provided on the Medway City Estate.

## **1. Introduction**

- 1.1 It is generally recognised that waste is a significant challenge for the nation as a whole and the South East Region, with its high level of economic activity and population in comparison to other parts of the UK. Human activity produces waste materials and strong economic activity and a consumer lifestyle leads to increased waste generation. What is generally less well understood is that waste is generated at all levels and sectors of human activity, giving rise to a complex pattern of types and movements of these materials. The planning system has a significant role in planning for waste management.
- 1.2 Historically waste disposal has relied on landfill in the UK. Available landfill capacity has significantly reduced as mineral sites in need of restoration have been filled. In addition EU legislation in the form of the Landfill Directive has introduced landfill diversion targets and the end of co-disposal for hazardous and non-hazardous wastes. This has led to a move away from this traditional way of dealing with waste through the disposal route.
- 1.3 Despite this some landfill will always be required, for example to dispose of incinerator residues and other 'fractions' of the waste stream that cannot be dealt with in any other way. However, increasingly, landfill will be a disposal method of last resort and available capacity will need to be husbanded accordingly.
- 1.4 To cope with this general move away from landfill various technological options are emerging to either treat waste materials so that they can be

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reused, recycled or disposed if in another way. These are discussed later in this report.

- 1.5 A significant feature of sweeping changes that are taking place in the waste industry is how material is being divided into specific streams e.g. plastics, glass, electrical waste etc. One result is that a greater range of facilities is required to process material, either for reuse or subsequent disposal.
- 1.6 Dating from the time when landfill was the accepted method of disposal for municipal waste the home counties have been required to make provision for London's waste. This is still a feature in the South East Plan but in that plan Kent & Medway are treated together for waste planning purposes.

## 2. Waste Types in Medway

- 2.1 In Medway there are several waste streams that need to have their arisings planned for. These include:
  - **Municipal Solid Waste (MSW):** This waste comprises that which arises from householder collections and that taken to the authority's civic amenity sites. The Council has a statutory duty under the Environmental Protection Act 1990 to collect and dispose of this part of the waste stream. This waste constitutes 16% of overall wastes in the South East Region. Within the waste stream organic, or putrescible, wastes are the largest fraction at some 40%, paper at 28% is the next largest, plastics are some 10% of the total according to a Medway analysis carried out in 2000. At the civic amenity sites the ratios are different though the volumes are significantly less. Here putrescibles are in the order of 22%, paper 6%, plastics 2-3% and the largest fraction is combustibles of mixed origin at 40%. Since 2000 the council has significantly improved its recycling rates but the overall composition is unlikely to have changed.
  - **Commercial and Industrial Waste (C&I):** This waste arises from the varied and complex commercial and industrial activity of an area. There is no direct audit of these arisings at present. They are generally estimated from the employment numbers of the differing economic sectors. Given that employment patterns exhibit significant local variations across the region, the waste arisings from this sector will also vary. The Environment Agency is working on a way to more reliably analyse this waste stream.
  - **Construction, Demolition and Excavation Wastes (C, D& E):** As the name suggests this waste stream arises from the construction sector and can include construction blocks/bricks, concrete, metals, plastics, soils etc. Again data on how much material is arising and is being reused and recycled is unreliable. Much of this material,

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being of an inert nature, is exempt from the waste site licensing regulations of the Environmental Protection Act 1995 as administered by the Environment Agency (EA). This means it can be used for site restoration and re-engineering without necessarily being accurately recorded. What are known as secondary aggregates are audited to an extent. Major development sites are required to have waste management plans as of April 2008 and this should improve the data available. Soils that are contaminated, or are suspected of being so, are treated as hazardous wastes and so are not part of this category.

- **Hazardous Waste:** Given the danger to the environment and human health from materials described as hazardous there is a highly prescribed regulatory system. This is set out in the Environmental Protection Act 1995 and is administered by the Environment Agency (EA) to ensure the safe management and disposal of these materials. Data is generally considered accurate and reliable. In 2006 England and Wales produced nearly 6 million tonnes and in the South East Region 477,043 tonnes were produced. Of this nearly 110,000 tonnes was reused/recycled, while some 25,000 tonnes were incinerated. Also, some 30,000 tonnes was treated and 45,000 tonnes was landfilled. The remainder was largely transferred elsewhere for specialist treatment due to a shortage of facilities in the Southeast.
- **Agricultural Wastes:** The vast majority of these materials are biodegradable and stay within the agricultural cycle. Typical wastes are crop residues (straw, vegetable waste and silage effluent) and livestock wastes (manure and slurry). Non-biodegradable wastes are very limited as an overall proportion of the total waste stream and include such items as packaging, chemical and machine wastes.

### 3. Legislative Background

- 3.1 As the environmental impact of waste generation and disposal has increased, legislation has been developed at European and national levels to shift waste planning from a disposal orientated system towards a more sustainable resource assessment and an environmental impact mitigation based approach. The underpinning principle of increased sustainability can be described as: *'Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.'*
- 3.2 The UK has four key objectives in its own Strategy for sustainable development:
- Social progress, which recognises the needs of everyone
  - Effective protection of the environment

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- Prudent use of natural resources
  - Maintenance of high and stable levels of economic growth and employment.

### **European Legislation**

- 3.3 The European Union has produced a number of directives that have become part of UK law. The following are those relevant to waste planning:

*The revised Framework Directive on waste (Directive 2008/98/EC)*

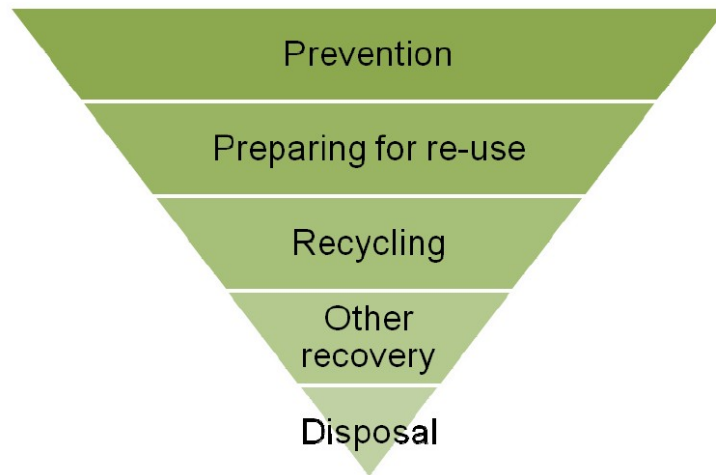
- 3.4 This is arguably the most important directive and has recently been revised and then transposed into UK law. It sets out the key principles that will continue shift waste planning away from the traditional disposal to land route towards increased resource sustainability. The key principles can be summarised as follows.

- 3.5 The Waste Hierarchy: The aim of the hierarchy is to move waste management up from a reliance on landfill (the least sustainable option) through waste reduction (the most sustainable option), preparing for reuse, recycling (including organic material composting), recovery (often thermal energy recovery but not exclusively, material use by substitution is another example) and then to disposal (normally to land) only if none of the higher levels offer an appropriate solution. Alongside the amended hierarchy are increased recycling and reuse targets. Significantly for both household and construction, excavation and demolition wastes streams. They are:
- To recycle or prepare for reuse 50% of household waste by 2020
  - To reuse, recycle or recover 70% of non-hazardous C, D & E waste by 2020

There is a corresponding pressure to free materials that have been treated to a certain stage from waste regulatory control. Work is advanced to enable ferrous, aluminium and copper scrap to cease to be considered waste materials; similarly paper and glass will have end-of-waste criteria developed in due course. Other new provisions include such matters as extended producer responsibility, waste prevention plans, biomass waste classification and provisions for more difficult and hazardous waste management.

## **THE WASTE HIERARCHY**





The most effective environmental solution is often to reduce the generation of waste, including the re-use of products – *prevention*

Products that have become waste can be checked, cleaned or repaired so that they can be re-used – *preparing for re-use*

Waste materials can be reprocessed into products, materials, or substances – *recycling*

Waste can serve a useful purpose by replacing other materials that would otherwise have been used – *other recovery*

The least desirable solution where none of the above options is appropriate – *disposal*.

- 3.6 **Regional Self-Sufficiency:** This principle states that most waste should be treated or disposed of within the region in which it is produced. In Medway's case this is the southeast region. Each region is also expected to provide sufficient facilities and services to manage the amount of waste it is expected to produce over a ten-year cycle beginning in 2006.
- 3.7 A key feature underlying this principle is that waste materials should not be transported over long distances (with an associated environmental impact). It also reflects the idea that each region should 'consume its own smoke'. However not all regions have specialist reuse, recycling and recovery capacity due to factors such as:
- The required catchment for some materials being larger than a single region
  - Various technical factors such as unsuitable geology for treatment or disposal sites
- In addition, if existing capacity is 'just over the border' to replicate the necessary capacity within the region could be regarded as superfluous and wasteful.
- 3.8 **The Proximity Principle:** This principle is based on the premise that it makes sense both in environmental and economic terms to manage waste streams where they occur; thus avoiding extended transportation, particularly by road.

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*The Landfill Directive (1999/31/EC)*

3.9 The Landfill Directive reinforces the Waste Framework Directive in that it sets out targets for the diversion of biodegradable wastes from landfill and it has banned hazardous, corrosive and clinical waste co-disposal with other non-hazardous wastes. For example the directive banned the disposal of vehicle tyres from landfill (whether shredded or not) in 2006. It also imposes the following biodegradable municipal waste disposals to land targets:

- 35% of 1995 levels by 2010
- 50% of 1995 levels by 2013
- 75% of 1995 levels by 2020.

*The Waste Electrical and Electronic Equipment Directive WEEE (2002/96/EC)*

3.10 This directive is to prevent materials from this sector contributing to the overall waste stream and to promote reuse, recycling and other forms of recovery specifically for these materials. This will necessitate specialist facilities to deal with those materials that can be problematic to deal with and hazardous in nature, e.g. cathode ray tubes and refrigeration units.

*The Hazardous Waste Directive (91/689/EEC)*

3.11 This directive provides a precise and pan-European set of definitions to enable a framework for the control of hazardous or 'special' wastes. Implemented in the UK through the Special Waste Regulations 1996 and now the Hazardous Waste Regulations 2005. There is overlap with other directives, such as the WEEE directive where the materials are deemed hazardous such as cathode ray tubes from waste television sets.

*End of Life Vehicles Directive (2000/53/EC)*

3.12 This directive came into effect in 2000 and obliges vehicle manufacturers to arrange for the collection, take-back and processing of end of life (ELV) motor vehicles. Treatment can be done at authorised sites to collect fuel, oil, brake fluid and anti-freeze before the plastics and metal components are reused, recycled or otherwise recovered before disposal or reuse.

*Waste Incineration Directive (2000/76/EC)*

3.13 This directive subsumes earlier directives on incineration and ensures that incinerators continue to be highly regulated and stringent operating conditions have been introduced setting out minimum technical

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requirements for waste incineration and co-incineration. The directive applies to all new incinerators and all existing facilities as of the 28<sup>th</sup> December 2005. Monitoring for adherence to the regulations is done by the Environment Agency under the existing Pollution Prevention and Control (PPC) regulations.

*Ozone Depleting Substances Regulation (2037/2000)*

- 3.14 This European regulation came into effect in 2001. All ozone depleting substances such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) have to be removed from equipment (refrigeration equipment being a prime example) in a controlled environment to prevent ozone depletion. Once done the waste materials can be passed on for further processing.

**National Waste Legislation**

*Environmental Protection Act 1990*

- 3.15 The requirements of the Framework Directive on Waste were implemented in the UK through the Environmental Protection Act 1990 (EPA). The EPA 1990 defines the duties of waste collection and waste disposal on local authorities. It also sets out the legal requirements of the 'duty of care' to all those who generate, handle and manage to disposal the waste materials defined in the Act.

*Environmental Act 1995*

- 3.16 The EPA 1990 was amended by the Environment Act 1995. It sets out the different definitions of wastes and how they should be controlled. The EA 1995 also implements various elements of the Framework Directive on Waste and is the enabling legislation for all waste producer responsibility legislation. Also, the EA 1995 is significant in that it led to the creation of the UK's environmental regulator the Environment Agency.

*The Financial Act 1996 and the Landfill Tax Regulations 1996*

- 3.17 Although this act of parliament (and set of associated regulations) concerns financial matters, its impact on waste management is profound. Landfill Tax operates at two rates: a standard rate of £24 per tonne for active waste (substances that either decay or contaminate land - which includes household waste); and a lower rate of £2 per tonne for inert materials. From April 2008, the standard rate increases by £8 per tonne per year until 2010-11. For the lower rate, there is an increase from £2 to £2.50.<sup>1</sup>

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<sup>1</sup> [http://www.politics.co.uk/reference/issue-briefs/economy/economic-policy/budget/landfill-tax-\\$366600.htm](http://www.politics.co.uk/reference/issue-briefs/economy/economic-policy/budget/landfill-tax-$366600.htm)

- 3.18 Landfill tax is having and will continue to have, an increasing effect on the cost of using landfill. The intention is to stimulate the development of alternatives. Steve Lee, chief executive at the Chartered Institution of Wastes Management (letsrecycle.com) was quoted as saying:

*"Raising the tax by £8 per tonne per year to £48 by 2010 for 'active' waste will make a whole range of waste treatment technologies financially viable - for all wastes, not just municipal. The three-year plan for the escalator is good, too. Businesses need time to change and even the anticipation of a £48 per tonne tax - plus steadily increasing landfill gate fees - will be enough to influence many waste and resource management decisions."*

*Waste and Emissions Trading Act 2003*

- 3.19 The Waste and Emissions Trading Act 2003 implements the Landfill Directive's limitation on the landfilling of biodegradable wastes. This act sets out the annual allowances limiting how much biodegradable municipal waste (BMW) can go to landfill sites to be disposed of in any particular year. The allowances came into effect in 2005. The allowances can be traded, subject to the Government's guidance on Trading, Banking and Borrowing Landfill Allowances. Essentially, efficient authorities can bank or sell excess landfill allowances if they had not used all of their allowances by exceeding their BMW diversion targets. Similarly authorities can buy extra allowances if having used up their allocations they have not met their BMW diversion targets, or they could borrow from future allocations.
- 3.20 The system is called the Landfill Allocation Trading Scheme, usually abbreviated to LATS. Medway's BMW landfill allocations run from 2001 till 2020. In 2001, the baseline year, 77,500 tonnes could be landfilled. For the target year 2009/10 this has dropped to 47,500 tonnes, by 2012/13 the next target year this falls to 33,000 tonnes and in the final target year at 2019/20 only 25,000 tonnes. This is equivalent to a 67.7% reduction of BMW going to landfill between 2001 and 2020.<sup>2</sup>
- 3.21 The LATS system is designed to be flexible enough to enable local authorities to develop the most cost-effective strategy for meeting their waste targets, tailored to local circumstances. If a local authority exceeds the allowance and cannot buy any more credits it will be fined at a rate of £150 per tonne over the set limitation. It is considered that trading under the LATS scheme will be a short term activity as local authorities and the waste industry move toward improved methods of treatment and disposal.

<sup>2</sup> Medway Council Municipal Waste Management Strategy 2005-2020, paragraphy 2.3.7, Figure 2, page 14

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*Household Waste Recycling Act 2004*

- 3.22 This act aims to affect an increase in the recycling of household wastes. It amends the EPA 1990 by requiring authorities with responsibility for waste collection to collect at least two types of recyclates separated from other wastes. The deadline for implementation was 2010. The revised EC Waste Framework Directive has superseded this once it was transposed into UK law.

*Waste Minimisation Act 1998*

- 3.23 This act enables local authorities to implement schemes to minimise the amount of controlled waste that is generated. However it does not allow authorities to impose any requirements on households or businesses though they can determine both the form of collection and the nature of the container from which the waste is collected.

*National Waste Strategy 2007*

- 3.24 The Department for Food and Rural Affairs (DEFRA) produced a National Waste Strategy in 2000 and updated this with a new strategy in 2007<sup>3</sup>. Also, a Waste Strategy Annual Progress Report 2007/08<sup>4</sup> has recently been produced to illustrate how progress is being made against the varying performance indicators.
- 3.25 The 2000 strategy set out the vision for and the necessary actions that would make the UK more sustainable in its management of waste. Also, the targets it sets out coincide with the European Framework on Waste.
- 3.26 The strategy set national targets to recycle or compost at least:
- 25% of household waste by 2005
  - 30% of household waste by 2010
  - 33% of household waste by 2015
  - and to recover value from 45% of the municipal waste stream by 2015.
- 3.27 The 2007 strategy differs in that its stated aims have changed and the above targets should be more ambitious. The new key objectives are:
- Decouple waste growth (in all sectors) from economic growth and put more emphasis on waste prevention and re-use.
  - Meet and exceed the Landfill Directive diversion targets for BMW in 2010, 2013 and 2030

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<sup>3</sup> <http://www.defra.gov.uk/environment/waste/strategy/strategy07/pdf/waste07-strategy.pdf>

<sup>4</sup> <http://www.defra.gov.uk/environment/waste/strategy/strategy07/pdf/waste-strategy-report-07-08.pdf>

- Increase diversion from landfill of non-municipal waste and secure better integration of treatment for municipal and non-municipal waste
- Secure the investment in infrastructure needed to divert waste from landfill and for the management of hazardous waste; and
- Get the most environmental benefit from that investment, through increased recycling of resources and recovery of energy from residual waste using a mix of technologies.

3.28 The corresponding recycling and composting targets for household wastes are:

- 40% of household waste by 2010
- 45% of household waste by 2015
- 50% of household waste by 2020 (*the Revised Waste Framework Directive remains co-incident with this requirement*)

Together with recovery of municipal wastes at the following rates:

- 53% by 2010
- 67% by 2015
- 75% by 2020

3.29 These targets are to be reviewed in 2010 as it is expected that the residual waste will be less than was expected by the 2000 strategy, due to an observed lowering of the waste growth overall since 2000. It may be that these targets will be ramped up further.

3.30 The strategy also makes clear that a new national target for the reduction of commercial and industrial waste and construction and demolition waste going to landfill will be set. The strategy points out that the levels of commercial and industrial waste going to landfill is expected to fall by 20% by 2010 on the basis of the policies set out in the 2007 strategy.

3.31 The updated National Waste Strategy 2007 has some challenging targets and these will cascade down into regional and local waste planning policy.

3.32 There are a number of other regulations and acts of Parliament that have a bearing on how the waste streams are managed, though they are more applicable to local authority waste contracts and financial accountability than spatial planning.

#### *South East Regional Strategy*<sup>5</sup>

3.33 A Medway Core Strategy will have to have regard to the waste policy of the emerging Regional Spatial Strategy (RSS) called the South East

<sup>5</sup> [http://www.southeast-ra.gov.uk/southeastplan/plan/view\\_plan.html](http://www.southeast-ra.gov.uk/southeastplan/plan/view_plan.html)

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Plan. This strategy advocates increased waste reduction via efficiency of societal consumption and the reuse and recycling of materials; this with the objective of reducing the reliance on disposal to land and enabling the husbanding of landfill resources for the disposal of irrecoverable wastes and a reducing proportion of residual waste.

- 3.34 The South East England Regional Assembly (SEERA) submitted the South East Plan to Government on the 31 March 2006. The Panel Report<sup>6</sup> is now available and proposed changes and modifications that have a bearing on the plan's waste policies are taken into account below.
- 3.35 A number of policies set out the regional waste management requirements. They can be summarised as follows:
- 3.36 **Policy W5: Targets for Diversion from Landfill:** There will be a need to increase the incidence and overall capacity of the higher levels of waste management within the region to match waste generation. The policy sets out the tonnages required to be diverted from landfill for the principle waste streams (MSW, C&I, C&D) between 2005 to 2025. Taking all these waste streams together, by 2010 18.9 million tonnes per year will require diversion from landfill; by 2025 this will need to rise to 26.2 million tonnes per year. That is 86% of these wastes being reused, recycled or otherwise recovered in the South East Region.
- 3.37 **Policy W6: Recycling and Composting Targets:** The reuse/recycling-composting capacity requirements for the region are set out in Policy W6. Again they stretch from 2005 till 2025 for municipal solid (MSW), commercial and industrial (C&I) and construction and demolition (C&D) wastes. Collectively by 2010 some 13.3 million tonnes per year will require to be recycled and composted, by 2025 this will rise to 19.8 million tonnes per year, representing 65% of these wastes arising across the South East Region.
- 3.38 **Policy W7: Waste Management Capacity Requirements:** The plan makes it clear that there is an immediate and acute shortfall in the waste management capacity required to achieve the ambitious targets for recycling, composting and other forms of recovery (including energy recovery) to enable the diversion of waste from landfill to meet the EU Landfill Diversion targets.
- 3.39 Policy W7 sets out the sub-regional waste management capacities to achieve the sub-regional targets. The Kent and Medway combined target for MSW, between 2006 and 2025 is nearly 5 million tonnes per annum of additional management capacity that will need to be in place. For C&I waste, some 9.5 million tonnes of additional annual capacity is the target requirement.

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<sup>6</sup> [www.eipsoutheast.co.uk](http://www.eipsoutheast.co.uk)

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- 3.40 The accompanying Table 1 to this policy identifies the projected lack of recycling/composting, recovery capacity (as predicted shortfalls) in Kent/Medway by 2015 in relation to the above sub-regional targets. These are summarised as follows;
- **MSW/C&I** wastes shortfall of 0.726 million tonnes per annum of recycling capacity
  - **MSW/C&I** wastes shortfall of 0.285 million tonnes per annum of recovery capacity
  - **MSW/C&I** wastes shortfall of 0.35 million tonnes per annum of composting capacity
  - **C&D** wastes shortfall of 1.416 million tonnes per annum of recycling capacity.
- 3.41 **Policy W13: Landfill Requirements:** The lack of landfill resources in the region is evident. Overall there is an estimated shortfall of 21.5 million tonnes of capacity (including anticipated quantities of London waste) over the region between 2006 and 2015. That will be required for residual wastes and those that are irreducible or hazardous in nature. Again an accompanying table details the requirements for the sub-regions.
- 3.42 For the Kent/Medway sub-region the non-hazardous waste landfill shortfall at 2015 is predicted as 12.995 million tonnes. For inert wastes by 2015 the situation is positive with a surplus of 7.155 million tonnes. Of note is that London's exports into Kent/Medway between 2006 and 2015 are estimated at 2 million tonnes.
- 3.43 **Policy W15: Hazardous Waste:** Hazardous waste can be reused and recycled (through the remediation of contaminated soils onsite for example) though not all are capable of this and have to be disposed of to landfill. Some also require specialist high temperature incineration. Hazardous waste, such as asbestos wastes from the construction, demolition and commercial sector account for over a third of all the arisings of hazardous waste. Industrial sector and incineration fly ash are examples of such materials requiring disposal to land.
- 3.44 The Panel Report commented upon the policy as set out in the plan. The main proposed change is to delete the reference to the individual sub-regions when identifying the priority need for more landfill capacity to serve the region as a whole. The justification for this being that the as the waste stream is complex and diverse in its management needs additional landfill capacity need not necessarily be located where that provision is most urgently needed.
- 3.45 **Policy W3: Apportionment of London Waste:** The Panel considered whether a deferment of the apportionment of London's waste exports (MSW, C&I and C&D waste streams) would be appropriate. Representations from the region argued that the current pattern of exports into the region should continue until 2016. Then a methodology



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to determine a sub-regional apportionment should be applied. The Panel Report rejects this approach essentially on the basis that the earlier the apportionment starts the greater the opportunity to influence how the waste industry will respond, giving a clear message of the intended direction of travel the strategy is pursuing.

- 3.46 Policy W7 for Kent/Medway requires it to take a 12.2% apportionment of London's exported waste between 2006 and 2025. This being split into two phases equating to 2.0 million tonnes between 2006-15 and 1.2 million tonnes between 2016-25, 3.2 million tonnes in all. It is anticipated that post 2016 the materials will be residues from higher order recycling and recovery processes and which will be in need of disposal by landfill.
- 3.47 There will need to be a disaggregation between Kent County Council and Medway Council for these waste streams and their targets as set out by policies W3, W7 and W13.
- 3.48 The anticipated abolition of the plan with the introduction of the Localism Act in 2012; regional waste policy targets will cease to have effect. The targets in the National Waste Strategy, as amended by the revised EU Waste Directive that has been transposed into UK law will continue to form the basis of waste planning, together with the National Waste Management Plan once it is published. The targets within these provisions will be expressed locally through the LDF process.

#### **4. Current Waste Arisings and Capacities in Medway**

- 4.1 Medway's current waste arisings span all the recognised waste sectors given that the area has both a dense urban/sub-urban structure with employment land uses and industrial land. However data monitoring of the waste streams is not consistent.
- 4.2 Consultants M.E.L Research Ltd<sup>7</sup> were contracted to audit Medway's entire waste stream in 1999. Since then only the municipal waste stream has been monitored in detail. The other waste streams are subject to a degree of direct measurement and predictive modelling. Data from the Environment Agency is a reliable source of information where the site licence and pollution prevention requirements necessitate the gathering of data. Sites exempt from these statutory requirements remain outside any duty to provide data to either the local planning authority or the Environment Agency.
- 4.3 Waste management capacities with planning permission can be assessed but details of the throughput of any facility can only be gathered with the co-operation of the operator. As a result the quality of information available is variable.

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<sup>7</sup> M.E.L. Research Ltd, 8 Holt Count, Heneage Street West, Aston Science park, Birmingham, B7 4AX

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*Medway's Household and Municipal Waste (MSW) Arisings*

- 4.4 The M.E.L Research Ltd audit found that the area was producing 117,300 tonnes per annum. The majority (62.6%) was kerb side collection wastes at some 73,500 tonnes; Civic Amenity sites (3 in total) produced 27,000 tonnes (23%). The residual wastes left over from recycling activities amounted to 23,000 tonnes.
- 4.5 Total waste arisings recorded in 2006/07 were 132,016 tonnes, representing a growth of just over 11% over 8 years. The recycling rate for the same period was 33.6%. Growth in the MSW sector nationally is approximately 3%. In Medway this has been calculated as 2.1 % over the five years from 1999/00 to 2003/04. There is also a need to take into account growth in the number of households. Medway is recognised by the government as a growth area, part of the Thames Gateway. The housing projection to 2026 is some 16,300 new dwellings.
- 4.6 The effect of this housing growth and waste growth per household can be projected into the future. Establishing the implications of the increase in materials that will need to be diverted from landfill to meet the new National Waste Strategy 2007 targets for MSW recycling and composting, results in the following:
- 40% of household waste by 2010
  - 45% of household waste by 2015
  - 50% of household waste by 2020
- 4.7 If it is assumed that MSW waste arisings are some 140,000 per year in 2010 and continue to grow at a rate of 2%. The amount of materials required to be composted and recycled could be:
- 56,000 tonnes per annum by 2010
  - 69,556 tonnes per annum by 2015
  - 85,328 tonnes per annum by 2020
- 4.8 If the projected new housing growth<sup>8</sup> effect is taken into account and applying a per annum rate of arisings of 1.3 tonnes per household on the MSW recycling and composting targets the following potential tonnages requiring composting and recycling could arise:
- 58,359 tonnes per annum by 2010
  - 78,955 tonnes per annum by 2015
  - 91,822 tonnes per annum by 2020

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<sup>8</sup> Medway Housing and Mixed Use Development Plan Submission Document, August 2006 (withdrawn) page 22.

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4.9 In addition there is also a target for higher rates of recovery for the MSW residual tonnage that remains *after* meeting of the composting and recycling targets. This is:

- 53% of the remaining tonnage by 2010
- 67% of the remaining tonnage by 2015
- 75% of the remaining tonnage by 2020

4.10 Recovery essentially means the recovery of the potential energy of the residual wastes in the form of heat that can then be used to produce energy. Any excess heat has the potential for possible district heating schemes. Technologies such as incineration, gasification and pyrolysis are considered recovery systems when applied to waste.

4.11 The Waste Emissions Trading Act enables the government to fine authorities that do not meet their yearly targets. An authority can be fined at a rate of £150.00 per tonne of landfilled MSW above their allowance. Taking the above example at year 2015, if the waste arisings that can be landfilled is 55% of total MSW arisings, yet recycling rates have remained at 30% (not the 45% as required by the national strategy) there is a 15% (some 26,000 tonnes) composting and recycling shortfall. Assuming that this material would have to be landfilled a fine of £3.9 million would be levied on the council.

4.12 This figure does not take account of the landfill tax also required and the potential increase in the amount of waste arising per household. This could be in the range 0.5-1% or as much as 3% as recorded nationally. London's exported waste apportionment that might be levelled at Medway by the emerging South East Plan has also not been factored into these figures.

4.13 Clearly, yearly fines of the order of £3-4 million by 2015 and escalating significantly beyond that date would be unsustainable. Also, in this scenario, Medway would not be making any contribution to meeting the UK targets set out by the Landfill Directive. What is therefore required is a shift from the current reliance on landfill to higher parts of the waste hierarchy for the municipal waste stream.

#### *Medway's Household and Municipal Waste (MSW) Management Capacity*

4.14 The Medway area has reuse and recycling capacity but this is not utilised as part of the municipal waste contract. Similarly the area has some landfill capacity but this is licensed only for inert wastes. The area has recovery capacity (waste gasification capability at Clipper Close on the Medway City Estate, see 4.18 below), though while it is permitted it is not implemented.

4.15 Currently all Medway's municipal waste arises from kerbside collections, street sweepings and the 3 civic amenity sites. Collected material is then

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bulked up at the waste transfer station at Clipper Close, Medway City Estate for onward transportation by road to the Rainham Landfill site in Coldharbour Lane, Essex. Here materials are sorted at the materials recovery facility (MRF) including recyclables collected at the kerbside by residents (blue bag scheme). The MRF can segregate paper, plastic (most fractions), metals (both ferrous and non-ferrous) and glass. The materials are bulked and transported away to recycling processors. Wood/green waste collections are put through an outside composting system. The black bag putrescible wastes are landfilled. Recycling rates are currently 33% using this system; the residual 67% is landfilled at the site.

- 4.16 The Rainham (Essex) site will be unable to accept waste imports by road after 2012 and 2018 by river. Being primarily a landfill site it will be unable to meet Medway's landfill diversion and enhanced recycling and recovery needs in the future.
- 4.17 Within Medway there is permitted capacity to recycle and recover wastes that arise from the municipal sector. The facility is on land between Royal Eagle Close and Clipper Close, called Pelican Reach, on the Medway City Estate. This is being used to bulk and transfer municipal wastes to Essex. Viridor operates the site<sup>9</sup>. Planning permission for the site was granted in 1998 (ref. ME/98/0469) for the 'change of use and construction of a waste recycling, treatment, processing and transfer centre with offices and ancillary development including access roads'. The site's waste management licence allows for a throughput of 670,000 tonnes per annum, covering most waste types from most of the defined waste streams.
- 4.18 The operator recently submitted an application for a Lawful Development Certificate for the use of land for the storage, treatment and processing of waste using gasification technologies. The council approved this application on the 20<sup>th</sup> June 2008. Continued use of the site as simply a transfer station may therefore change, given that the site now has the permitted ability to process wastes and reuse/recycle and recover them. The site's very significant capacity allied, to the range of possible treatment/processing options, could enable it to meet the landfill diversion targets as set out above. Another waste development the Council has recently granted planning permission for is 50,000 tonnes per annum of biodegradable waste composting capacity at MTS Cleansing Services, Kingsnorth Works, Hoo, Rochester. The permission includes the installation of 6 in-vessel composting units; construction of a single storey extension for use as office and a two storey extension for use as a truck cleaning bay (demolition of existing factory area). The importance of this new capacity is that it could greatly enhance the area's ability to meet the National Waste Strategy 2007 composting of the municipal waste stream where previously there was none.

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<sup>9</sup> <http://www.viridor-waste.co.uk/our-sites-and-facilities>

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It could be argued that landfill will remain important in the overall management of waste arisings in the area. Residual municipal wastes (currently 67% of the total equating to 90,000 plus tonnes, though declining into the future proportional with the diversion and recovery target requirements) and residues from higher order waste processing may well need to be landfilled. Not omitting any hazardous waste requirements the area may have.

- 4.19 Landfill will remain important in the overall management of waste. Residual municipal wastes and increasingly in the future higher waste hierarchy process residues will need to be landfilled.
- 4.20 Landfill resources in Medway are very limited. Void space is being created through the extraction of a terrace river gravel deposit on the Isle of Grain (J.Clubb Ltd, Perry's Farm, Grain Road, Isle of Grain) but the quarry has all but stopped production and the waste disposal site licence is limited to inert materials only.
- 4.21 The landfill site at St.Mary Hoo, operated by Biffa Waste Plc has recently ceased taking waste materials. It has a permission to increase the total amount of waste to offset differential settlement that was threatening the sites containment and landfill gas control system. This process has largely been completed.
- 4.22 The only alternative landfill sites with the scale of capacity required to meet local needs and near to Medway are at Shelford near Canterbury, Greatness near Sevenoaks and Redhill in Surrey. Nor is new void space being created within Medway through mineral extraction that might have the potential to meet future requirements. Accordingly satisfying ongoing landfill requirements within the area will be very difficult in the future.

#### *Medway's Commercial and Industrial Waste (C&I) Arisings*

- 4.23 The commercial and industrial waste stream is a complex area of waste planning and reliable information about it is difficult to obtain. Accordingly it is best assessed by employment sector. For the purposes of this report those wastes that arise from the construction and agricultural sectors are dealt with separately. The employment sectors that have been examined in Medway are as follows:
- Mining & Quarrying
  - Manufacturing
  - Electricity, Gas & Water
  - Distribution, Hotels & Catering
  - Transport & Communications
  - Financial & Business Services
  - Government & Other Services
- 4.24 The method employed to derive a figure of waste per employee, per employment sector, per annum for Medway is to use the area's known

employment figures (published by the Office of National Statistics, ONS) and then use the estimated, or modelled waste per employee, per sector that has been derived for Kent. Kent County Council (KCC) employed consultants Cambridge Econometrics<sup>10</sup> to produce a commercial and industrial waste forecast for their area.

4.25 It is a reasonable assumption that the respective areas will be producing similar waste arisings per employment sector in proportion to their size, the proxy being employee numbers.

4.26 For Medway the average employee per sector was calculated for the period 1998-03 from ONS data and then using the KCC study a derived waste tonnage per employee for the individual sectors was calculated to gain an overall tonnage per sector per employee in Medway as shown below:

Sector	Average Employees 1998 - 2003	Average Tonnes generated per employee
Mining & Quarrying	Negligible	Negligible
Manufacturing	12,076	6.0
Electricity, gas, water	913	9.6
Distribution, hotels & Catering	21,571	2.6
Transport & Communications	4,175	0.92
Financial & Business Services	14,788	0.84
Government & Other Services	22,500	0.86

4.27 Combining these figures gives a derived figure for the commercial and industrial waste sectors for Medway:

Average Tonnes C&I Wastes per Sector per Annum

- Mining and Quarrying *negligible*
- Manufacturing *72,456*
- Electricity, Gas & Water *8,765*
- Distribution, Hotels & Catering *56,085*
- Transport & Communications *3,841*
- Financial & Business Services *12,422*
- Government & Other Services *19,350*
- Total all sectors approx. *173,000*

4.28 This method does have limitations – it is based on data for 1998 – 2003 and it assumes similar waste generation rates for both Kent and

<sup>10</sup> Cambridge Econometrics, Covent Garden, Cambridge CB1 2HS. Commercial and Industrial Waste Forecasts, A Draft Report for Kent County Council, 17 September 2007

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Medway. However it is considered to give a good approximation of the scale of C&I waste generation occurring within Medway.

- 4.29 Regrettably it is not possible to estimate accurately the quantities of the various types of waste that arise from each of the sectors. However they will include paper/card, wood, metals (ferrous and non-ferrous), glass, ceramics, plastics (of a wide range of thermo and thermo-set types), chemical wastes (that may be hazardous in nature) and putrescible wastes such as food waste.
- 4.30 The problem of waste type and quantities is understood by the Department of Food and Rural Affairs (Defra). In response to this and in collaboration with the Environment Agency Defra have produced a Waste Data Strategy and a data warehouse, known as the Waste Data Hub. The Hub receives quarterly data from the returns made by licensed waste management facilities to the Environment Agency (EA), and from municipal waste data as reported by local authorities via a system known as Waste Data Flow<sup>11</sup>. However, reporting on the commercial and industrial waste stream at the waste local planning authority level will not be possible for some time. The regional waste technical advisory bodies are considering a pan regional approach to develop a consistent forecast of this waste stream across England with 2008 being the baseline year.
- 4.31 This work will be economic modelling led and aim to produce figures for 2010-11, 2015-16 and 2020-21. It will also cover Medway separately from Kent. Until this occurs, with governmental and Environment Agency support, the forward planning for arisings of this waste stream will have to rely on local data where it can be found and modelled, as discussed above.
- 4.32 Given that the generation of waste is a cost to any industry, which is increasing with landfill taxation escalation, it is in their interests to reduce costs through 'in-house' waste minimisation and reuse/recycling before materials enter the waste stream. Legislation such as the Packaging Regulations is having a direct affect on this behaviour. Nevertheless, wastes from this sector continue to enter the waste stream. Nationally industrial wastes amount to 13% (35 million tonnes) and commercial wastes some 11% (30 million tonnes) of the total 272 million tonnes per annum<sup>12</sup>. Though growth in these streams is declining nationally (and potentially a similar trend is occurring locally) it is reasonable to conclude that Medway will have some 170,000 tonnes per annum of commercial and industrial wastes for some time to come.

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<sup>11</sup> <http://www.defra.gov.uk/environment/statistics/wastedatahub/index.htm>

<sup>12</sup> Waste Strategy for England 2007, Department for Environment and Rural Affairs, Chart 1.2 Annual waste arisings, England-by sector, page 24

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*Medway's Commercial and Industrial Waste (C&I) Management Capacity*

- 4.33 The evidence to inform the South East Plan regional policy provision on waste was gathered by consultants ERM<sup>13</sup>. A report was produced that details the arisings and management capacities (permitted and recorded). This covers the principle waste streams in the South East Region with an investigation of the effect of the emerging relevant regional waste strategy targets in terms of deficits and surpluses<sup>14</sup>.
- 4.34 Medway's position according to this study is as follows:
- Surplus C&I Waste Recycling Capacity at 2025*
- 4.35 The permitted 0.67 million tonnes per annum recycling capacity exceeds the arisings significantly. At 2025 C&I waste required to meet the targets of landfill diversion will be some 30,000 tonnes (with some 70,000 tonnes going to landfill). This gives a surplus target driven capacity of 0.64 million tonnes per annum at 2025.
- 4.36 The final report in 2007 of ERM's model shows arisings at some 100,000 tonnes by 2006 and 140,000 by 2025. This is clearly considerably less than that estimated using the Cambridge Econometrics study with ONS employment data for Medway explained above. However, whatever the current quantities are it is clear that current permitted recycling capacity is more than sufficient to deal with the C&I arisings in Medway in terms of permitted capacity.
- 4.37 This capacity is almost exclusively to be found at the facility at Pelican Reach on the Medway City Estate that is being used to bulk and transfer municipal wastes to Essex. Therefore, it is possible that the site could manage both the municipal waste and C&I waste streams in terms of the emerging relevant regional waste strategy targets and remain within the parameters of the planning permission and site waste management licence.
- 4.38 Other significant recycling capacity does exist in the area but is not recorded by the ERM model. This is planning permission ref. MC2003/0140 for organic waste to yield a fertilisation medium, at a rate of 40,000 tonnes per year employing an aerobic breakdown process. Given that the materials are food wastes from the C&I waste sector and are used for agricultural production this counts as a form of recycling rather than composting within this waste stream. Though in Medway, Biowaste Recovery Ltd at Matts Hill Farm serves a larger area. Currently the facility takes abattoir wastes, and Medway has none. Given that the area must import meat and meat products it can be said that the facility supports the commercial and industrial sector in Medway by dealing with its wastes that are generated outside Medway.

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<sup>13</sup> [www.erm.com](http://www.erm.com)

<sup>14</sup> [http://www.southeast-ra.gov.uk/documents/sustainability/waste/update\\_of\\_model-fut\\_waste\\_man\\_cap\\_needs.pdf](http://www.southeast-ra.gov.uk/documents/sustainability/waste/update_of_model-fut_waste_man_cap_needs.pdf)



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- 4.39 The process can technically deal with a wide range of biogenic wastes but given its location in the rural area, within an area of Outstanding Natural Beauty it may not be suitable for expansion to deal with a greater volume of materials, including that from the municipal waste stream.

*Deficit C&I Waste Recovery Capacity at 2025*

- 4.40 Medway had no planned or permitted recovery capacity at the time the consultants were drawing up their model in 2005 and finalising it in 2007. Since then the operator at Pelican Reach has acquired the permitted ability to use recovery technologies at the site.
- 4.41 Continued use of the site as a transfer station may change given that the site now has the permitted ability to both process wastes to reuse/recycle and now to recover. The site's significant capacity allied to the range of possible treatment/processing options (that span the waste hierarchy) could potentially be used to recover wastes from the C&D stream as well as the municipal waste stream.
- 4.42 For example, if we accept that by 2016 possibly 160,000 tonnes per annum of materials (using ERM model figures) are arising and some 40% are being otherwise recycled a potential 96,000 tonnes per annum could be available to be recovered using technologies such as pyrolysis (if suitable).

*Deficit C&I Waste Composting Capacity at 2025*

- 4.43 Medway has no waste composting capacity within its area. There are in-vessel systems at Ridham Dock in Swale (Country Style) and at West Malling (New Earth Solutions). There is also an open windrow system at Luddesdown Farm, Gravesham (limited by an Environment Agency exemption to 3,750 tonnes per annum). Given that the South East Plan has regional recycling and *composting* targets it is reasonable that Medway should make some contribution to the regional target of 7.4 million tonnes per year by 2025, as defined by Policy W6<sup>15</sup>.

*C&I Waste Transfer Capacity*

- 4.44 Transfer capacity was not modelled by ERM but is significant in Medway. The most noteworthy are the transfer of metals away from the area by Van Dalen (UK) Ltd (quantities not disclosed) and paper (up to 280,000 tonnes per annum) by Nordic Recycling. Both are situated at Chatham Port and serve Medway's and other areas commercial and industrial waste arisings. Other significant metal treatment transfer capacity is at the Medway City Estate in Rochester. Here European Metal Recycling Ltd segregates ferrous and non-ferrous metals for onward recycling.

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<sup>15</sup> [http://www.southeast-ra.gov.uk/southeastplan/plan/march\\_2006/core\\_document/009\\_seera\\_sep\\_d06.pdf](http://www.southeast-ra.gov.uk/southeastplan/plan/march_2006/core_document/009_seera_sep_d06.pdf)

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Quantities are not know. A number of small scale scrap metal merchants (often less than 200 tonnes per annum outputs) exist in Medway that generally feed these sites with materials.

### **Medway's Construction, Demolition and Excavation Waste (C, D& E) Arisings**

- 4.45 The Environment Agency investigated the amount of material that was entering the waste stream from the construction, demolition and excavation sector in 2003. It found that 91 million tonnes of this material was deemed as a waste by this sector. Over half was recycled as an engineering soil and as a substitute aggregate<sup>16</sup>. Similar surveys conducted in 1991 and 2001 by the then Office of the Deputy Prime Minister found that similar amounts of this material had arisen from the construction and demolition sector<sup>17</sup>.
- 4.46 Regional estimates of total arisings in the ERM model report gives a static 12.13 million tonnes per annum from 2006 till 2025 in the South East Region. For Medway the arisings from this sector are estimated at 0.33 million tonnes per annum over the same period.
- 4.47 The relevant policy from the emerging South East Plan calls for secondary aggregate production in Medway to be providing some 0.2 million tonnes per annum by 2016. The M.E.L Research Ltd audit in 1998 estimated that Medway produced 331,600 tonnes, essentially the same as the ERM model result in 2007.
- 4.48 The difficulty with this waste sector is that much data in the past has not entered into the regulatory system. Being generally inert the materials are often exempt from waste site licence requirements. This situation will now improve given that Site Waste Management Plans (SWMPs) are a legal requirement for developers. This system will record the waste arisings and how they are managed over the life of a construction project, of a value of more than £300,000. Contractors will also have to demonstrate how the reuse, recycling and recovery of the waste arising in this sector has been maximised and how much is eventually disposed of.
- 4.49 Materials arising from the construction and demolition sector are also sensitive to economic cycles and can be locally skewed from regional and national trends by 'one off' major local infrastructure projects. Though the latter are bound to become ever more efficiently executed as disposal costs increase.

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<sup>16</sup> <http://www.environment-agency.gov.uk/subjects/waste/1031954/315439/923299/995831/>

<sup>17</sup> <http://www.communities.gov.uk/documents/planningandbuilding/pdf/surveyarisings2003.pdf>

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*Medway's Construction, Demolition & Excavation Waste (C,E&D) Management Capacity*

- 4.50 Medway may well be producing in the order of 300,000 tonnes per annum of construction, demolition and excavation wastes at the current time. Significant quantities are no doubt being used to form substitute aggregates by the cluster of operators at Knight Road in Strood (though others do operate elsewhere). However detailed figures are not available.
- 4.51 These sites, clustered in Knight Road, are subject to the saved policies of the Medway Local Plan 2003. The most significant is Policy S10, which promotes comprehensive redevelopment.
- 4.52 Essentially construction and demolition waste management and secondary aggregate production in the open are unlikely to be compatible with the areas regeneration. Accordingly, planning permissions for these operations are temporary, and are only extended by 2 to 3 years at a time.
- 4.53 Other capacity exists at the Medway City Estate and at Cliffe. The capacity on the Medway City Estate has one operational site producing materials (exact types and quantities are undisclosed) and the unimplemented permitted capacity at the waste processing facility at Clipper Close, Medway City Estate (Viridor). At Cliffe KKB 3R Ltd process around one million tonnes of material (concrete, hardcore and road surfacing) to form graded aggregates from the Medway area. This operator has the ability to process materials at its site in Cliffe and at client sites.
- 4.54 The drive to re-classify treated wastes as useable materials by the new end-of-waste classification of by the amended Waste Directive and the drive to reuse, recycle and recover up to 70% of C,D&E wastes by 2020 means that all non contaminated inert materials (such as soils/sub-soils) should no longer be regarded as wastes, but a form of restoration media. Permitted capacity for restoration has recently been significantly increased with the conditional grant of planning permission for 900,000 metres cubed of quarried void space at Manor Farm at Frindsbury. The now abandoned sand and gravel quarry at Perry's Farm at Grain has permission for inert waste restoration, of negligible quantities. Also there remains some inert restoration capacity at Lower Twydall Chalk Pit. How much capacity remains is not available at the time of writing, though it is not recognised as significant.

**Medway's Hazardous Waste Arisings**

- 4.55 Nationally the Environment Agency reported that 4.8 million tonnes of hazardous waste was produced in 2003. Four categories of waste - construction and demolition wastes, oily wastes, wastes from organic chemical processes and wastes 'not otherwise specified' made up two

thirds of this figure. Less than 2% of waste managed in England and Wales was imported and almost all of this came from Scotland and Northern Ireland. This figure significantly increased by 2006 as audited by the Environment Agency to 6 million tonnes per annum nationally. This could well have been due to the effect of the Hazardous Waste Regulations 2006 broadening the definition of what constitutes a hazardous waste.

- 4.56 The ERM 2007 model used, where available, data from the Environment Agency's Waste Interrogator<sup>18</sup> for 'Special Waste' in 2003. The reclassification to Hazardous Waste took place in 2005. Medway's regional contribution is modelled at 142,000 tonnes per annum in 2006, growing at 2.5% till 2010; then at 2% till 2015, then 1.5% till 2020 and 1% till 2025. This growth rate was anticipated to mirror that of the commercial and industrial waste sector nationally.
- 4.57 Consultants Scott Wilson undertook an investigation into Hazardous Waste and Low Level Radioactive Waste In the South East for the regional assembly in 2008. This is an in depth study looking at the legislative background, nature of the materials and their arisings and the appropriate management needs across the region. The study also looks at current capacities and the possible future management needs for disposal capacity and alternative scenarios in the region. In summary the trend within the hazardous waste sector is to move away from landfill towards greater reuse and recycling.
- 4.58 Like ERM's model, Scott Wilson linked the growth in this sector to growth in the commercial and industrial waste sector. Two growth scenarios were developed, one using ERM's growth percentages above and another based on 2.6% annual growth in the commercial arisings and 0% growth in the industrial arisings of the sector. Medway's predicted two growth rate scenarios are shown overleaf:

Scenario 1

2008	2016/18	2025/26
27,912	34,019	38,514 tonnes per annum

Scenario 2

2008	2016/18	2025/26
27,912	33,746	42,023 tonnes per annum

- 4.59 Hazardous waste can arise from the construction and demolition sector, examples being contaminated soils (that are not remediable on site) and asbestos bearing insulation materials. Also, the agricultural sector can produce hazardous wastes from minor quantities to exceptional volumes due to such epidemics as bovine foot and mouth disease. This may well

<sup>18</sup> [www.environment-agency.gov.uk/apps/wastesurvey2/](http://www.environment-agency.gov.uk/apps/wastesurvey2/)

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account for the considerable difference between the Environment Agency based data and that modelled by consultants ERM and Scott Wilson. That which arises via the municipal waste stream is limited (refrigeration fluids, car sump oils and batteries being deposited at the civic amenity sites being prime examples) in tonnages when compared to the overall arisings.

*Medway's Hazardous Waste Management Capacity*

- 4.60 Companies and individuals have a duty of care under the provisions of the Environmental Protection Act 1995 to dispose of their wastes in a responsible manner. Those materials that are deemed as hazardous are subject to the Hazardous Waste Regulations (2005) that implement the requirements of the Hazardous Waste Directive in the UK. This includes requirements for pre-treatment, waste acceptance criteria and waste management in general. Accordingly, the Environment Agency does hold information on where materials originated and how and where they were treated and eventually disposed of. What characterises the sector is the complexity of the intra and inter-regional movements. This illustrates the fact that the hazardous wastes classification covers a wide range of materials requiring very different types of processes to effect the reuse, recycling and recovery of the materials and the eventual disposal that can be to land and specialist incineration.
- 4.61 To attempt to plan for a series of capacities to match the area's arisings in this sector would be exceptionally difficult. The complex movements of materials, sometimes over long distances, not only denotes their particular treatment needs but also the fact that there may be certain economies of scale needed in order to operate efficiently. This behavior is in contrast to less problematic wastes, such as construction and demolition wastes (inert) that are often recycled at the place of origin to be economic. Essentially hazardous wastes have a regional and sometimes national scale of operations.
- 4.62 Medway does have some capacity that makes a contribution to the regional mix, made up as follows:
- 4.63 *OSS Group Ltd Unit 106-139 Kingsnorth Industrial Estate, Hoo, Rochester ME3 9ND*: Total throughput of 12,000 tonnes per annum, of waste oil, oily water, brake fluid and antifreeze. These materials are not processed, but bulked up and transferred away for treatment and disposal.
- 4.64 *Oil and Water Ltd Unit 19, Kingsnorth Industrial Estate, Hoo, Rochester, ME3 9ND*: This company collects, treats and transfers oil wastes. The process produces low-grade fuel oils from waste and contaminated oils. The site's capacity was not available at the time of writing.
- 4.65 *Eco Oil Ltd, Kingsnorth Industrial Estate, Hoo, Rochester, ME3 9ND*. The site processes contaminated oils and oil wastes to produce low-

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- grade fuel oils. The site's waste management licensed capacity is some 25,000 tonnes per annum.
- 4.66 *Hogarth Tyre Shredders Ltd Unit 75, Kingsnorth Industrial Estate, Hoo, Rochester, ME3 9ND*: The site has a throughput capacity of 100 tonnes per working week, 5,200 per annum. Some tyres are salvaged for reuse but the majority are shredded for either disposal (often thermally) or used as a waste derived fuel in a recovery process - essentially waste to energy using incineration or pyrolysis/gasification technologies.
- 4.67 *European Metal Recycling, Whitewall Rd, Medway City Estate, Strood, Rochester, ME2 4DZ*: The site has the licensed ability to prepare end of life vehicles for recycling. Hazardous materials such as battery lead waste, antifreeze, fuel, oil and brake fluid are removed for treatment and the recycleable metals shredded . The throuputs are not known at the time of writing.
- 4.68 Specialist incineration of clinical wastes is done at hospital sites and is dedicated to this waste stream only.
- 4.69 Other capacity may exist (at least as a licensed capacity) to reuse and recycle hazardous wastes at the Viridor site on the Medway City Estate. What type and what quantities are not known at the time of writing.
- 4.70 Medway has no landfill resources dedicated to the safe disposal of hazardous waste or residues from the processing of hazardous wastes of which there is an acknowledged regional shortage. There is only one in the region, Pinden Quarry in Longfield near Dartford, and that is only able to take asbestos bearing wastes.