Medway Local Plan - Waste Evidence Base

Medway Waste Needs Assessment 2024 Update

Report 5 - Review of Management Requirements for 'Other' Waste Generated in Medway

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Abbreviations and Glossary of Terms

Abbreviations

AD	Anaerobic Digestion
AMP	Asset Management Period
C & I	Commercial & Industrial Waste
C, D & E / CDEW	Construction, Demolition & Excavation Waste
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EfW	Energy from Waste
EWC	European Waste Catalogue
HLW	High Level Radioactive Waste
HWDI	Hazardous Waste Data Interrogator
HWRCs	Household Waste Recycling Centres
ILW	Intermediate Level Radioactive Waste
LACW	Local Authority Collected Waste
LLW	Low Level Radioactive Waste
NDA	Nuclear Decommissioning Authority
NPPW	National Planning Policy for Waste
PI	Pollution Inventory
PPG	Planning Policy Guidance
STC	Sludge Treatment Centre
VLLW	Very Low Level Radioactive Waste
WDI	Waste Data Interrogator
WNA	Waste Needs Assessment
WPA	Waste Planning Authority
WwTW	Wastewater Treatment Works

Glossary of Terms

Agricultural Waste	Waste produced on a 'farm' in the course of 'farming'. Agricultural waste takes both 'natural' (or organic) and 'non- natural' forms e.g. plastics.
Anaerobic Digestion	A process to manage organic matter including green waste and food waste broken down by bacteria in the absence of air, producing a gas (biogas) and nutrient rich solid or liquid (digestate). The biogas can be used to generate energy either in a furnace, gas engine, turbine or to power vehicles, and digestate can be applied to land as a fertiliser. Classed alongside composting even though Energy from Waste.
Asset Management Period	The five-year period covered by a water company's business plan. These are numbered; with the current period (2015 – 2020) being referred to as AMP6, and the forthcoming period (2020 – 2025) being AMP7.
Bioresources	Alternate term applied to sewage sludge produced by wastewater treatment facilities.
Commercial Waste	Waste arising from premises which are used wholly or mainly for trade, business, sport, recreation or entertainment, excluding industrial waste.
Controlled Waste	Waste subject to controls emanating from the EU Waste Framework Directive.
DEFRA	The UK Government department responsible for developing and implementing national waste management policy.
Energy from Waste	The conversion of the calorific value of waste into energy, normally heat or electricity through applying thermal treatment of some sort. May also include the production of gas that can be used to generate energy. The management of waste by Energy from Waste is classed as 'other recovery'.
Environment Agency	The body responsible for the regulation of waste management activities through issuing permits to control activities that handle or produce waste. It also provides up-to-date information on waste management matters and deals with other matters related to the water environment including flood protection advice.
European Waste Catalogue (EWC)	Comprehensive listing of wastes, divided into 20 chapters, most of which relate to the type of industry that produced the waste, although some are based on materials and processes. Each waste type is assigned a unique six-digit code. The EWC is transposed into UK law through *The List of Wastes (LOW) Regulations.*
Hazardous Waste	Waste requiring special management under the Hazardous Waste Regulations 2005 due to it posing potential risk to public health or the environment (when improperly treated, stored, transported or disposed). This can be due to the quantity, concentration, or its characteristics
Incineration	The controlled burning of waste. Energy may also be recovered in the form of heat (see Energy from Waste).
Industrial Waste	Waste arising from any factory and from any premises occupied by an industry (excluding mines and quarries).
Landfill (including land raising)	The permanent disposal of waste to land, by the filling of voids or similar features, or the construction of landforms above ground level (land-raising).
Ofwat	The Water Services Regulation Authority, or Ofwat, is the body responsible for economic regulation of the privatised water and sewerage industry in England and Wales.
Recovery	Subjecting waste to processes that recover value including recycling, composting or thermal treatment to recover energy.
Recycling	The reprocessing of materials extracted from the waste stream for use to produce products (the same e.g. glass bottles or a different one e.g. aggregate).
Waste Planning Authority (WPA)	The local authority responsible for waste development planning and control. In this case Medway Council.

1. Introduction

1.1 The Medway Waste Needs Assessment (WNA) 2024 Update consists of an overall main report, a review of strategic waste flows and five waste stream specific supporting reports which refresh the evidence base relating to projected management requirements for waste arising in Medway. The five waste stream specific reports are:

1.2 Local Authority Collected Waste;

1.3 Commercial & Industrial Waste;

1.4 Construction, Demolition & Excavation Waste;

1.5 Hazardous Waste; and

1.6 Scoping Review of Other Waste.

1.7 This report (Report No. 5) details the work undertaken in relation to 'Other' Waste streams which are taken to be:

- Wastewater
- Agricultural Waste
- Low Level Radioactive Waste

1.8 PPG advises that Waste Planning Authorities (WPAs) should seek to plan for these streams. These wastes arise in such limited quantities, or, in the case of wastewater, are addressed by water company plans, which means that the impact that they have on the need for traditional waste management infrastructure can be considered separately to other solid waste streams. This report determines the quantities that may arise within each stream and how well existing arrangements for their management may cope in future and so whether related issues may exist in future which need to be expressly planned for.

1.9 While established data sources can inform the generation of estimates for the principal waste streams, the data to estimate arisings of the 'other' streams is less readily available. As a result, quantifying and forecasting arisings are more problematic. Detailed assessment of these streams has not been undertaken specifically for Medway previously and given the scantness of information this assessment draws on best available data sources,

2. Wastewater

2.1 In Medway, Southern Water Group PLC is the designated sewerage undertaker with responsibility for providing wastewater treatment capacity.

2.2 While wastewater treatment plants are considered to be waste management developments (planning applications relating to their provision are handled by the WPA in two tier authorities), the responsibility for planning for wastewater management is shared between WPAs and the water utility companies (with input from the Environment Agency). Therefore, PPG advises that early discussions take place between local planning authorities and water and sewerage undertakers, so that proposed growth and environmental objectives are reflected in the utility company business plans. This in turn should help ensure that the necessary infrastructure is funded through the water industry price review mechanism regulated by Ofwat[1]. This engagement has been carried out with meetings held and follow up email correspondence. This report reflects the outcome of this engagement.

2.3 There are two aspects of wastewater treatment that need to be addressed:

1. The provision of capacity to treat wastewater itself; and
2. the provision of capacity to manage the resultant solid wastes (sewage sludge) that arise from the treatment process.

2.4 Both of these are covered in the following sections.

Wastewater Treatment Capacity

2.5 The Medway Infrastructure Position Statement (January 2017)[2] remains the most current statement produced by Medway Council concerning infrastructure. This reported that wastewater is treated by Southern Water at 9 wastewater treatment works (WwTW) located across Medway. It concluded that further assessment was required to determine capacity to meet potential growth in Medway and Gravesham. Subsequent contact with Southern Water has confirmed its intention to increase capacity at the following works:

2.6 Capacity increase planned in AMP8 (TBC): Northfleet, Stoke, Whitewall Creek

2.7 Capacity increase planned in AMP9 (TBC): Motney Hill, Gravesend

2.8 No issue with capacity: Grain, Harvel, Luddesdown, St Mary Hoo

[1] PPG Paragraph: 002 Reference ID: 34-002-20140306

[2] Remains the most up to date Position Statement.

Management of Sewage Sludge

2.9 Sludge resulting from the treatment of wastewater is termed sewage sludge or 'bioresources' by the sector. This section considers the current capacity for the management of sludge arising at wastewater treatment works (WwTWs) in Medway and requirements for future capacity. It should be noted that sewage sludge arising at WwTWs is normally treated at larger WwTW where specialist treatment capacity is provided. Such sites are referred to as sludge treatment centres (STCs).

2.10 The principle STC serving Medway is at Motney Hill, Rainham, Gillingham, which lies to the extreme north west of the area. The works include an anaerobic digestion plant where sludges from other WwTWs may be taken for further processing to produce renewable energy[3]. The resultant sludge is applied to farmland in accordance with the *Sludge (Use in Agriculture) Regulations 1989* & associated best practice guidance. Sludge applied in this manner falls outside the normal regulatory regime for waste.

2.11 Since 2018 Ofwat ring fenced sludge treatment activities and directed water companies to release data on STCs that may be available for the use of others under commercial arrangements. This is intended to bring about a " *change (in) the thought process from viewing this as an inconvenient waste produced by treating wastewater, to seeing it as an opportunity. The trading of bioresources could be a real breakthrough – economically and environmentally."*[4] This came into effect in 2020. This means that listings of facilities will be in the public domain that may facilitate synergies between areas and across waste streams for organic waste treatment, given commercial incentives.

2.12 The *Southern Water Five-Year Business Plan* (2025-2030) states all post treatment sludge they produce is recycled to agricultural land. It also articulates a vision whereby the bioresource asset base is improved by consolidating several digestion sites in Kent by 2030 and introducing several advanced anaerobic digestion (AAD) sites in their region by 20240.

2.13 The Southern Water 'Bioresources Treatment and Growth Strategy'[5] reports that: " Population growth in our region and changes to wastewater treatment process (to meet permits) are forecast to increase the quantity of sludge by 9% by 2030, and because of the current available capacity and age of our asset base, carrying on operating sustainably will be a challenge" With regard to the envisaged pressures it states: " *In our Asset Management Plan for the period 2025-2030 (AMP8) we are proposing to focus on our sites in Kent by consolidating the STCs there into 2 large AAD facilities at Ashford and Ham Hill.*" It is also proposing "*..to provide additional biosolids storage across all regions to ensure we have*

[3] Granted consent by Medway Council April 2006 MC2005/1480

[4] https://www.ofwat.gov.uk/regulated-companies/markets/bioresources-market/

[5] TA.12.BR01Bioresources Treatment and Growth Business Case September 2018 Version 1.0

adequate storage capacity that is resilient to seasonal fluctuations in demand and weather that is not favourable to land stockpiling/spreading activities."

Sludge Storage Exemptions

2.14 An exemption from environmental permitting exists for the storage of up to 1,250 tonnes of sludge at any one site at any one time (S3). Material may be stored for up to 12 months before being applied to agricultural land as a fertiliser in accordance with the *Sludge (Use in Agriculture) Regulations 1989* & associated best practice guidance.

2.15 Review of the exempt site listing for Medway provided by the Environment Agency indicates that Southern Water's sludge management contractor Austin Contract Services had 1,062 locations registered with an S3 exemption[6]. This equates to up to 1,327,500 tonnes of storage capacity at any one time. However Southern Water advise that this amount of capacity is never fully used, and while c.270,000 t of biosolids are produced each year, only c40,000t [7]may be stockpiled under S3 exemptions in the whole of Kent (including Medway).

2.16 However, these exemptions only provide interim storage for the sludge prior to application so are complementary, rather than additional to, any treatment capacity at STCs themselves. It is understood that it is intended to rescind the S3 exemption mechanism and consolidate existing regulatory regime in a new sludge strategy at some point in the future.

Inputs of Other Waste to Wastewater Treatment Works in Medway

2.17 WwTWs can provide a valuable function in managing wastes, other than wastewater, that arise in liquid and sludge form such as septic tank emptyings. Sites that receive such waste require an Environmental Permit. Review of the Waste Data Interrogator (WDI) 2022 indicates that there are no WwTWs in Medway permitted to accept other wastes. However Whitewall Creek WWTW does benefit from a T21 exemption that allows recovery of wastes such as sewage grits, screenings and sewage sludge at a waste water treatment works. . It should be noted that inputs reported through the WDI as having been received at permitted sites only cover waste delivered (by road tanker), wastewater itself is not recorded as it is received directly via sewer. This suggests that septic tank emptyings that do arise are dealt with through other routes such as movement to WwTW outside the Plan Area. Examination of the Agency WDI data indicates no septic tank sludge arising in Medway was managed through permitted sites in 2022.

[6] Note that it is not possible to ascertain the site address of these locations as they have not been provided.

[7] Around 56 stockpiles in total at an average of 716 t of sludge per location - (Southern Water pers comm.)

Conclusion

2.18 Having reviewed the evidence while there is a reasonable understanding of present and future needs, ongoing consultation with Southern Water is crucial to determine what, if any provision for additional capacity for management of this waste stream may need to be included in the forthcoming Local Plan and what opportunity the opening of the sludge market may present for cross treatment of organic wastes from other streams. This is particularly important given the stated intention to consolidate the STCs capacity in north Kent/Medway.

3. Agricultural Waste

3.1 To be regarded as agricultural, waste must have been produced on a 'farm' in the course of 'farming'. Waste arising within an agricultural unit might otherwise be regarded as a form of Commercial & Industrial (C&I) waste having been generated in the course of running a business.

3.2 *The Waste Management (England and Wales) Regulations 2006* brought certain agricultural waste under formal control for the first time. In advance of the introduction of the regulations a series of research projects were undertaken to establish quantities and composition of arisings from this waste stream (including a survey in 1998 reported in a 2001 report[8]) and understand management arrangements in place at the time for the stream[9] with a view to identifying management needs at a national level. These projects remain the most current sources of data available for this waste stream and therefore continue to be relied upon when seeking to generate local estimates of arisings for planning purposes.

3.3 In order to identify whether waste from agricultural sources needs consideration in the Plan separate to that of C&I waste, the following three aspects have been considered:

1. The nature of different agricultural wastes;
2. the likely current level of arisings; and,
3. the way in which the arisings are managed.

The Nature of Different Agricultural Wastes

3.4 *The State of Medway Report (Waste)* produced to support the Medway Local Development Framework dated January 2009 stated the following in relation to agricultural waste:

"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"[10]

3.5 This highlights that agricultural waste can take both 'natural' (or organic) and 'non- natural' forms.

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[8] Environment Agency (2001). *Towards Sustainable Agricultural Waste Management.* Environment Agency R&D Technical Report P1-339. https://www.gov.uk/government/uploads/.../geho0003bieo-e-e.pdf

[9] Environment Agency *Agricultural Waste Survey 2003* www.voluntaryinitiative.org.uk/importedmedia/library/1082_s4.pdf

[10] It appears that no further account was taken of this waste stream in the LDF formulation.

Natural Organic Agricultural Waste Arisings

3.6 This is the predominant waste stream produced by the sector and the most commonly produced natural waste are those from livestock farming such as slurries and manure. In the UK, if manures and slurries are used as a fertiliser on agricultural land then they are technically not seen as a waste and are excluded from waste management regulation (although there are controls on the application). These are termed 'natural agricultural wastes' and are outside formal control. It is considered unlikely they will enter the formal waste management system and impact on capacity requirements for C&I waste management. Therefore, this report focuses on 'non natural' agricultural waste arisings.

Non Natural Agricultural Waste Arisings

3.7 'Non-natural agricultural waste' is waste other than 'natural' organic waste arising from farming activities. This includes plastics bale wrap, tyres, discarded pesticide containers, clinical veterinary waste, old machinery, batteries, waste oil, vegetation and packaging waste[11]. The only recognised source of national estimates for arisings of non-natural agricultural waste available is the *2001 Environment Agency Report entitled Towards Sustainable Agricultural Waste Management*. This presents estimates of arisings down to regional level for 1998. For the South East region as a whole, the report estimated that approximately 49,000 tonnes of non-natural agricultural waste was produced on an annual basis.

Management Options

3.8 The 2006 *DEFRA Waste Minimisation Manual: A Practical Guide For Farmers & Growers*[12] identifies 3 principal routes for managing agricultural waste as follows:

1. Take the waste off-farm to an appropriately permitted facility.
2. Apply to the Environment Agency for a permit to manage certain waste on-farm[13].
3. Register an appropriate exemption with the Environment Agency to recover or dispose of some waste on-farm.

3.9 Each route and its applicability to target waste stream of non-natural agricultural waste is considered below.

[11] An element of these arisings are classified as hazardous waste and is accounted for in Report 4 on Hazardous Waste.

[12] DEFRA 2006 Product code PB 11674

[13] Intensive farming units such as pig or poultry farms are subject to environmental permitting. In some cases a waste management facility such as an anaerobic digestion plant may be operated as part of a permitted installation.

Delivery to a permitted facility

3.10 Management of agricultural waste by this route would be recorded by the operator of the permitted facility and reported through the WDI. Agricultural waste is coded under EWC 01 and EWC sub chapter codes 02 01. However, the WDI 2022 shows no agricultural waste was reported as arising in Medway.

Management of certain waste at on-farm permitted facilities

3.11 The Environment Agency considers manure and slurry used as feedstock materials for anaerobic digestion to be wastes. It has introduced standard rules permit for the digestion or composting of manures and slurries on farms. Where the only waste feedstock to an AD plant is agricultural manure and slurry the digestate output is not classed as waste if it is spread as a fertiliser on agricultural land. Hence the input waste ceases to be a waste once treated and therefore no longer needs to be provided for through the waste planning system. Waste managed through such permitted facilities would be reported through the WDI. However, no entry for such waste arising in Medway was made in the WDI 2022.

Registering an exemption

3.12 Most activities involving the storage, recycling and disposal of farm wastes can be registered as exempt from the need to have an Environmental Permit. Exemptions relevant to farmers include:

- anaerobically digest manure, slurry and vegetation to produce digestate for use on farm (T24)
- treatment of sheep dip or pesticide washings for disposal (T27 and T29)
- using rubble from a demolished farm building in the foundations of a road (U1)
- mixing ash from the burnt crops and vegetation into the soil (U14)
- mixing ash from burning pig or poultry with slurry and/or manure and spreading on farmland (U15)

3.13 A review of the Agency exemption register for sites in Medway registered under the above exemptions reveals the following:

- T24 - 0
- T27 - 0
- T29 - 0
- U1 - 5
- U14 - 0
- U15 - 0

3.14 Given the relative ease with exemptions may be registered, the low number of exemptions actually registered within Medway may be taken to indicate that farming activity involving production of non-natural waste that may be managed through these routes is small.

Quantities of Agricultural Waste that may be produced in Medway

3.15 It is possible to generate an estimate for waste from agricultural sources arising in Medway, applying the average waste arisings per agricultural holding from the 1998 agricultural waste estimation model developed for the Environment Agency and the number of farm holdings in Medway reported in the Defra annual survey of the agricultural industry in England. However, given the following:

- a review of the Defra dataset indicates that there were only 51 farm holdings operating in Medway in 2021[14], accounting for a farmed area of less than 10,000 hectares, much of which was grazing land for sheep (and this results in quantities of waste requiring management being relatively small compared with intensive farming methods).
- the majority of waste may continue to be managed on the farm where it is produced, and therefore never actually require additional management capacity to be provided offsite,
- the low number of registered exemptions and small tonnage reported as managed through permitted facilities.

3.16 It may be concluded that likely arisings are small and quantities requiring offsite management smaller still. Therefore, it may be taken that there is no need to expressly account for the management of non-natural agricultural waste in the WNA values.

[14] Note the data for 2022 has not yet been released at the time of writing.

4. Low Level Radioactive Waste

Introduction to Radioactive Waste

4.1 Solid radioactive waste is divided into three principal categories (and a sub category) according to its radioactivity content and the heat it produces. These categories are:

- **High-level radioactive waste (HLW)** is waste in which the temperature may rise significantly as a result of its radioactivity, and so this factor has to be taken into account in the design of storage or disposal facilities.
- **Intermediate level radioactive waste (ILW)** has lower levels of radioactivity than HLW and does not generate sufficient heat for this to be taken into account in the design of storage or disposal facilities.
- Low level radioactive waste (LLW) is radioactive waste having a low radioactive content. LLW makes up more than 90% of the UK's radioactive waste by volume but contains less than 0.1% of the total radioactivity. Within the definition of LLW, there is a sub-classification, known as Very Low Level radioactive Waste (VLLW).
    - Very low level waste (VLLW) is defined as either low volume VLLW or high volume VLLW. The principal difference between the two definitions is the need for controls on the total volumes of high volume VLLW being deposited at any one particular landfill or other waste management facilities.

Non-Nuclear Sourced Low Level Radioactive Waste

Nature

4.2 The majority of radioactive waste that is not classed as high or intermediate level is produced comes from by sectors outside the nuclear industry and hence is termed 'non-nuclear'. Most radioactive waste produced by non-nuclear sources contains very small levels of radioactivity and is therefore classed as VLLW. The majority of this material is similar in its physical and chemical nature to general wastes from household, commercial or industrial sources.

Sources

4.3 Non-nuclear sources include hospitals, the pharmaceutical sector, and research and education establishments, all of which use radioactive materials which ultimately leads to the generation of radioactive waste. Individually these sources generate relatively small volumes of radioactive waste. Further information regarding these sources is provided below.

- ***Hospitals*** **-** Solid low level radioactive wastes arise as a result of traces of radiopharmaceuticals in used syringes, needles, vials from which radiopharmaceuticals have been withdrawn and absorbent or protective materials (e.g. swabs, dressings, sheets

and plastic film) which may be contaminated with small amounts of radiopharmaceutical. Traditionally, most hospital waste has been designated as clinical waste, much of which is incinerated. However, hospitals are now segregating wastes at source distinguishing between that waste that requires management as clinical and that which can be managed as 'general' waste. This may result in some LLW being managed as general waste.

- ***Industry*** **-** The pharmaceutical industry carries out drug and technology development in specific areas of disease research, and in doing so, makes wide use of radiopharmaceuticals. Solid LLW from the pharmaceutical industry comprises general laboratory plastics, vials, sharps (i.e. needles and blades), gloves and any material which may be contaminated. LLW from biotechnology companies includes equipment to count the radioactivity, gloves, protective overalls and vials, and the waste is treated as either clinical or general waste
- ***Research*** **-** Radioactive tracers are used in universities, colleges and other research laboratories, to study the incorporation of chemical compounds into cells and organisms and also to study their transfer and metabolism. LLW arising at medical schools and biomedical research laboratories is similar to that from hospital laboratories and the pharmaceutical and biotechnology industries. The waste typically includes disposable plasticware, sample tubes, paper and plastic coverings, paper tissues, organic liquids that are used to count certain types of radioactivity (called scintillation fluids). Agricultural and animal research will result in rather more bulky wastes (for example plant matter and animal bedding).
- ***Contaminated Land*** **-** Whilst waste arisings from the remediation of land contaminated with radioactivity are potentially significant in terms of volumes, their ad hoc nature makes it difficult to undertake any meaningful long term planning for disposal of associated soils. In its strategy, the Government does not therefore expect planning authorities to make specific provision for this within their planning frameworks. However, it does consider it prudent for waste planning authorities to make reference in their planning documents to the possibility that radioactively contaminated soil might arise where historical activities involving radioactive sources may have taken place, and that such waste might require disposal to specially authorised landfill.

Quantities

4.4 The volumes of solid Low Level Radioactive Waste including LLW - produced by the non-nuclear industries are extremely small compared with the total volume of municipal, construction and industrial wastes. Government estimates that volumes are unlikely to exceed 0.1% of the annual quantities of all waste handled in England.

Production and Management of LLW in Medway

4.5 The State of Medway Report on Waste 2008 did not address LLW arisings for Medway.

4.6 A review of the Pollution Inventory (PI) 2022 shows that the only facility in Medway that released radioactive substances was the Medway Maritime Hospital. The data available does not allow quantification of radioactive waste arising from these sources.

4.7 Similarly, a review of radioactive source permits records granted by the Environment Agency indicates that there are 3 authorisations held by two entities within Medway as shown in Table 1 below.

Table 1: Radioactive Source Authorisations held within Medway
Source: EA Public Register accessed March, 2024

Entity	Activity	Location	n.
Medway NHS Foundation Trust	Keeping & Use of Radioactive Materials and Disposal of Radioactive Waste (H)	Medway Maritime Hospital, Windmill Road, Gillingham, ME7 5NY	1
University of Greenwich	Keeping & Use of Radioactive Materials and Disposal of Radioactive Waste (G)	Medway Campus, Central Avenue, Pembroke, Chatham Maritime, Chatham, ME4 4AW	2

4.8 These permits are issued to establishments which use radioactive substances and it is possible therefore, that as part of their activities, they will generate some LLW or VLLW requiring disposal offsite.

4.9 The UK Radioactive Waste inventory[15] does not explicitly address these sources referring to them in the following terms "Small quantities of solid wastes with very low concentrations of radioactivity typically from hospitals, universities and the non-nuclear industry (so-called 'small users') that can be disposed of with domestic refuse to landfill, either directly or after incineration". On this basis it can be assumed that very little if any LLW is produced within Medway, and the small quantities of VLLW will be managed through existing arrangements.

[15] UK Radioactive Waste & Materials Inventory https://ukinventory.nda.gov.uk/wp-content/uploads/2014/01/2016UKRWMI-Context-and-methodology.pdf

Policy Relevant to Medway

4.10 In 2019 the government published the Integrated Radioactive Waste Strategy[16]. This is a single radioactive waste strategy covering the whole Nuclear Decommissioning Authority (NDA) estate. The strategy developed from the UK Strategy for the Management of Solid Low Level Waste from the Nuclear Industry (2016) and the NDA Higher Activity Waste Strategy (2016). However, in the absence of any nuclear sector facilities within Medway, the primary national Government policy document that still affects the management of radioactive waste that may arise within Medway is the *UK Strategy for The Management Of Solid LLW Arising From The Non-Nuclear Industry*[17] (hereinafter referred to as 'the LLW strategy').

4.11 The LLW strategy is primarily aimed at non-nuclear industry waste producers, the environment agencies and waste planning bodies and:

- provides guidance and background information to enable planning authorities to make informed decisions on planning applications and to respond to concerns from their communities;
- clarifies the respective roles of waste producers, the environment agencies, planning authorities and the Nuclear Decommissioning Authority to enable decisions to be made that properly recognise the responsibilities of others; and,
- informs waste producers and regulators of how the regulatory framework applies to Low level radioactive waste (LLW), particularly the need for producers of LLW to produce waste management plans, consider waste minimisation at source and apply the waste hierarchy.

Management of VLLW and LLW

Very Low Level Waste (Exempt Waste)

4.12 A site producing or managing less than 50 m^3 of VLLW per year is classed as a low volume VLLW source and as such is exempt from reporting quantities of waste produced and managed. VLLW from such sources is not required to be managed separately and so will generally be managed in the same manner as general waste produced on the source site. As a result any landfill or incinerator in the UK may accept small volumes of VLLW mixed in with the other wastes. On that basis it may be assumed that any waste management facility receiving mixed waste might receive low volumes of VLLW depending on whether source

[16] https://www.gov.uk/government/consultations/nda-radioactive-waste-management-strategy/outcome/radioactive-waste-strategy-september-2019

[17] https://www.gov.uk/government/publications/strategy-for-the-management-of-solid-low-level-radioactive-waste-from-the-non-nuclear-industry-part-1-anthropogenic-radionuclides

sites fall within their catchment. However, VLLW is rarely (if ever) declared as such in any waste returns submitted so there are no specific records of its management to draw on. The LLW strategy states that Government considers that the present arrangements for low volumes of exempt VLLW are satisfactory and does not expect waste planning authorities to make specific provision for the management of VLLW in their waste plans.

Low Level Waste

4.13 When considered on its own, the very small quantity of LLW is insufficient to drive the provision of dedicated management facilities via the market. Therefore, the LLW Strategy concludes that producers of these wastes will nearly always have to rely on waste management networks provided for other large volume wastes. This can be problematic as the public perception of the risks associated with the management of LLW can deter waste facility operators from providing such a disposal service.

4.14 Most disposal of LLW requires a permit to be held by both the waste producer and the operator of the waste management facility that receives it. LLW can go either to a landfill as a 'controlled burial', the national Low Level Waste Repository (LLWR) at Drigg in Cumbria, or may be dealt with by incineration (with or without energy recovery). To extend its life, use of the national LLWR is reserved for particular types of LLW, so LLW disposal usually takes place at specially authorised facilities used for the management of other types of waste such as selected landfills.

4.15 Unlike the network of facilities available to take VLLW there are considerably fewer facilities across the UK that currently take LLW. While operators of appropriate facilities may apply to take LLW at any time, in England there are currently only three landfill sites granted permits to do so. These are shown in Table 2. The closest site to Medway is the East Northants Resource Management Facility (ENRMF), so current and future arrangements at this site is of greatest relevance. Development consent was granted for this facility includes provision for disposal of LLW up to 2026 and a decision on a DCO application to extend the capacity to 300,000tpa and life to 2046 was granted. There are however no indications that any LLW produced in Medway is managed through permitted facilities.

Table 2: Landfill Sites Permitted to Receive LLW in the UK

Site Name	Operator	Waste Type	Source Specific	Host WPA
East Northants Resource Management Facility	Augean South PLC	LLW	Waste mainly generated from the decommissioning and clean up of nuclear industry sites[18]	Northamptonshire
Clifton Marsh	SUEZ Recycling & Recovery (Lancashire) Ltd	LLW	Small quantities of lower activity low level radioactive wastes[19].	Lancashire
Lillyhall Landfill Site	FCC Recycling (UK) Ltd	High Volume - VLLW	No more than 26,000 m^3 of HV-VLLW per year and if the landfill remains operational until 2031 no more than 582,000 m^3 of HV-VLLW in total.[20]	Cumbria

Planning for the Management of Low Level Waste (LLW)

4.16 The LLW strategy exhorts producers of LLW to work with planning authorities, to ensure that such wastes may be effectively handled through the preparation of local plans and in determining planning applications. It also suggests that any waste management plans produced by LLW producers should take account of the proximity principle alongside other considerations. It states that:

"Waste planning authorities should consider how to manage LLW and VLLW arising in their areas as part of the preparation of their local waste plans. They should seek advice from waste producers and the environment agencies to ensure that the waste is being sent to a suitable waste management facility. If necessary and feasible, they should work with other waste planning authorities to share facilities." [21]

4.17 It also says:

"Data has shown that the majority of non-nuclear industry wastes are of very small volume in comparison to the annual volumes of controlled waste (very unlikely to exceed 0.1% by volume, and there is some evidence that it will reduce). Therefore, waste planning authorities are unlikely to need to make any special provisions to cope with an increase in volumes of radioactive waste." [22]

[18] Augean South PLC, 2020 http://www.augeanplc.com

[19] Sita Ltd 2020 http://www.sita.co.uk/

[20] Environment Agency. 2011. Environmental Permitting (England and Wales) Regulations 2010 Decision Document. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/303034/WRG_Decision_Document.pdf

[21] LLW Strategy key point page 18

[22] Para 2.34 page 17

LLW - The Proximity Principle

4.18 The LLW strategy recognises that planning, by waste producers, for the disposal of VLLW and LLW involves balancing regulatory and policy requirements with what appropriate disposal routes are actually available. In the case of most low volume VLLW from non-nuclear sources, its management route/fate is purely dependent on that of general waste with which it is mixed at the point of production i.e. waste producers have little influence on choice of destination at which the waste is ultimately disposed unless they segregate it at source.

4.19 In the case of deciding on disposal routes for LLW, the LLW strategy states that the Government wishes to see appropriate and explicit consideration of the proximity principle. "Appropriate and explicit consideration" means that proximity must be a feature of any options assessment process which supports a proposed waste management plan. The "appropriate explicit consideration" means that the proximity principle will assume a different importance in an options assessment for, say, a site producing large volumes of contaminated steel, for which only a limited number of decontamination facilities are available, to a hospital generating low volumes of radioactive waste suitable for (local) incineration or landfill.

4.20 The LLW Strategy also states that

> *"Communities which benefit from the beneficial uses of radioactive materials (including direct benefit such as the use of radiopharmaceuticals, and indirect benefits such as contributions to a local economy from commercial bodies using radioactive materials) should take a share in the responsibility for managing the radioactive wastes which inevitably arise from their use, where possible"*

4.21 It does however go on to recognise that "...each and every local authority cannot necessarily be self-sufficient in the matter of waste management."[23]

[23] LLW Strategy key point page 17

5. Conclusion

5.1 The above review of data sources and information concerning the production and management of agricultural waste, wastewater and radioactive waste leads to the following conclusions:

1. Wastewater and the associated sludge appear to be catered adequately through arrangements made by Southern Water, the statutory sewerage undertaker. Southern Water will be given an opportunity to comment on the draft Local Plan to ensure that proposed policies are sufficiently flexible to allow consideration of further planned development or expansion of wastewater and/or sludge treatment capacity.
2. Agricultural waste – Medway is not considered to generate sufficient quantities of agricultural waste to warrant specific separate provision assuming the continuation of the existing arrangements including the environmental permitting exemption regime.
3. Radioactive waste – there are only three permitted sources of this waste and they are characterised as "small users" producing VLLW which may be managed through mainstream routes.

5.2 On the basis of the above, it is considered that it is not necessary to complete a detailed quantitative assessment of any capacity gap relating to the management of these waste streams.