

Technical Paper W3
An Assessment of the Additional Waste
Management Provision Required in
Cornwall up to 2030

Cornwall Council

Executive Summary

Cornwall Council is responsible for making sure that sufficient land is available in the right place to enable the County to manage its waste in the most sustainable way. In order to do this it is necessary to understand how much waste is likely to be produced in Cornwall over the forthcoming years. This report compares the projected waste arisings for the period 2010 to 2030¹ with the current and permitted network of waste management facilities in Cornwall² in order to determine the level of provision that will need to be made for additional facilities up to 2030.

The report demonstrates that additional municipal (Local Authority Collected waste) landfill disposal capacity will be required beyond 2018 when the current planning permission at Connon Bridge expires. Additional landfill disposal capacity will also be required to meet the needs of the construction, demolition and excavation waste stream from 2019 onwards.

Provision for additional recycling/re-use facilities is likely to be needed for the municipal and the construction and demolition waste streams. With the exception of 3,000 tonnes in the commercial and industrial waste stream, sufficient capacity is either permitted (has planning permission) or is operational to meet Cornwall's needs for energy recovery up to 2030.

The level of additional capacity and the timeframes within which it will be required are set out in the report below.

¹ *An Assessment of the Future Waste Arisings in Cornwall up to 2030*

² *Existing Waste Management Capacity in Cornwall*

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1. Introduction

- 1.1 Cornwall Council, in its role as the local Waste Planning Authority, is required to make provision for the management of 'controlled' wastes³. The mechanism for managing the provision of a network of infrastructure to manage controlled wastes in Cornwall is the Local Plan. This technical paper has been produced to inform the preparation of the Plan and to help develop planning policies for its Local Plan which will guide the future of development in Cornwall up to 2030.
- 1.2 This report should be read in connection with the two reports listed below:
- An Assessment of the Future Waste Arisings in Cornwall up to 2030
 - Existing Waste Management Capacity in Cornwall
- 1.3 Together they are intended to provide an understanding of the level of provision that will be required for waste management facilities in Cornwall up to 2030. The purpose of this report is to set out the 'gap' between the currently operational (and licensed) or permitted (with planning permission, but not yet built) waste management capacity and the future waste management requirements based on projected arisings. In doing so this report will identify the level of additional capacity required for recycling/re-use, energy recovery and landfill disposal for the following waste types or 'streams':
- Local Authority Collected (LAC) waste (also referred to as 'municipal' waste in this report)
 - Commercial and Industrial (C&I) waste
 - Construction, Demolition and Excavation (CD&E) waste
 - Hazardous waste
 - Agricultural waste
 - Waste water

³ Municipal waste, commercial and industrial waste, construction, demolition and excavation waste, hazardous waste and waste water

2. Local Authority Collected Waste (municipal waste)

2.1 The projected municipal waste arisings will increase from 304,386 tonnes in 2010 to 327,801 by 2030.

Table 1: Projected shortfall in municipal waste recycling/re-use capacity up to 2030

Recycling/Re-use	
Projected recycling/re-use levels in 2030	163,900 tonnes
Additional arisings (above current operational levels)	61,953 tonnes
Current permitted recycling/re-use capacity	259,318 tonnes (including composting)
Shortfall in capacity	0 tonnes

2.2 The table shows that there will not be a shortfall in the municipal recycling capacity before 2030 (during the plan period). No additional provision will need to be made.

Table 2: Projected shortfall in municipal waste energy recovery capacity up to 2030

Energy Recovery	
Projected recovery levels in 2030	161,900 tonnes
Additional arisings (above current operational levels)	161,900 tonnes
Current permitted recovery capacity	240,000 tonnes*
Shortfall in capacity	0 tonnes

*This is permitted capacity at the Cornwall Energy Recovery Centre. The plant will be commissioned at full capacity in 2016.

2.3 The table shows that there is sufficient permitted energy recovery capacity to meet the projected need for energy recovery facilities in Cornwall up to 2030. No additional provision will need to be made.

Table 3: Projected shortfall in municipal waste landfill disposal capacity up to 2030

Landfill	
Projected landfill requirement in 2030 (cubic meters)	28,235 cubic metres
Additional cumulative landfill requirement 2010 – 2030	1,666,169 cubic metres
Current void space in permitted sites (Connon Bridge) in 2010.	2,000,000 cubic metres
Length of operational planning permission/license for the permitted sites (Connon Bridge)	December 2018
Licensed annual intake capacity (Connon Bridge)	250,000 tonnes (294,118 cubic metres). This will be restricted to 40,000 tonnes per year once the CERC is operational.
Shortfall in capacity	338,823 cubic metres

Landfill capacity volume is calculated for municipal waste at a density ratio of 0.85 tonnes to 1 cubic metre.

2.4 The table shows that there will be a shortage in landfill space of 338,823 cubic metres over the period up to 2030. The table also shows that additional landfill capacity will need to be permitted and operational from 2018 due to the expiration of the planning permission at Connon Bridge (at the end of 2018). Consequently, additional permitted landfill capacity will be required from 2018, rising to 338,823 cubic metres by 2030.

3. Commercial and Industrial Waste

3.1 The projected commercial and industrial waste arisings will increase from 351,380 tonnes in 2010 to 433,840 by 2030.

Table 4: Projected shortfall in commercial and industrial waste recycling/re-use capacity up to 2030

Recycling/Re-use	
Projected recycling/re-use levels in 2030	281,996 tonnes
Additional arisings (above current operational levels)	65,335 tonnes
Current permitted recycling/re-use capacity	589,978 tonnes
Shortfall in capacity	None

3.2 The table shows that there is sufficient recycling capacity to meet the commercial and industrial waste recycling needs up to 2030 and no additional strategic provision will need be required.

Table 5: Projected shortfall in commercial and industrial waste energy recovery capacity up to 2030

Recovery	
Projected energy recovery levels in 2030	149,844 tonnes
Additional arisings (above current operational levels)	127,844 tonnes
Current permitted energy recovery*	124,240 tonnes
Shortfall in capacity	3,000 tonnes

*Permitted capacity also includes any spare energy recovery capacity in the Cornwall Energy Recovery Centre after all the municipal waste arisings that are not recycled are processed. This spare capacity is projected to be approximately 78,100 tonnes per year by 2030 and will be available from 2016 onwards. It does not include 22,000 tonnes of arisings that are currently being processed for recovery, because this is not being processed in Cornwall.

3.3 The table shows that there will be a shortfall of 3,000 tonnes by 2030. Provision for an additional recovery capacity of 3,000 tonnes will be required.

3.4 It is estimated that this additional energy recovery capacity will be required from 2028 onwards.

Table 6: Projected shortfall in commercial and industrial waste landfill disposal capacity up to 2030

Landfill	
Projected landfill requirement in 2030 (tonnes and cubic meters)	11,327 cubic metres
Additional cumulative landfill requirement 2010 – 2030 (cubic meters)	907,945 cubic metres
Current void space in permitted sites (Lean Quarry)	2,300,000 cubic metres
Length of operational planning permission/license for the permitted sites (Lean Quarry)	2032
Shortfall in capacity	None

Landfill capacity volume is calculated for municipal waste at a density ratio of 0.85 tonnes to 1 cubic metre.

3.5 The table shows that there is sufficient landfill capacity to meet the requirements for commercial and industrial waste stream for landfill disposal up to 2030 within Cornwall.

3.6 However, Lean Quarry is contracted to landfill municipal waste from Plymouth City Council. Over the period 2010 to 2030 a total capacity of 720,834 cubic metres will be required at Lean Quarry to accommodate the municipal waste requirements from Plymouth.

3.7 When combining the commercial and industrial landfill disposal requirements from Cornwall and the municipal landfill disposal requirements from Plymouth it is projected that Lean Quarry will have 671,221 cubic metres of spare capacity in 2030. Sufficient permitted capacity therefore exists at Lean Quarry landfill to meet the commercial and industrial landfill needs up to 2030.

4. Construction, Demolition and Excavation Waste

4.1 The projected construction, evacuation and demolition waste arisings will increase from 951,137 tonnes in 2010 to 1,179,348 by 2030.

Table 7: Projected shortfall in construction, demolition and excavation waste recycling/re-use capacity up to 2030

Recycling/Re-use	
Projected recycling/re-use levels in 2030	1,061,413 tonnes
Additional arisings (above current operational levels)	333,841 tonnes
Current permitted recycling/re-use capacity	409,981 tonnes
Shortfall in capacity	651,432 tonnes

4.2 The table shows that there will be a shortfall in construction, demolition and excavation recycling capacity by 2030. The figure for the current permitted capacity which is licensed only for inert waste and the amount which is licensed for both C&I and CD&E recycling. Of the capacity which is licensed for these two waste streams the considered to be amount available for CD&E waste represents the capacity available once the projected C&I recycling needs are met (307,982 tpa).

4.3 It is also important to acknowledge that current CD&E waste recycling rates already exceed our current levels of permitted processing capacity. This is due to additional recycling taking place on site (where the material arose) and on exempt sites (that do not need formal licenses), for example, through land spreading. Consequently, in practical terms, the need for formal recycling capacity will be less than the projected levels indicate.

4.4 The current shortfall in recycling provision for CD&E waste is approximately 31% (226,130 tonnes). This is the proportion that is being recycled informally (not on licensed sites).

4.5 It is therefore considered reasonable to assume that this proportion of informal recycling that does not require strategic provision should continue up to 2030. On this basis, the remaining shortfall in recycling provision can be found by making the following calculation:

- Total Arisings minus current permitted recycling/re-use capacity (for construction, demolition and excavation waste) = Initial shortfall.

1,061,413 – 409,981 = 651,432 tonnes

- Shortfall based minus the proportion that is recycled informally (on site or on exempt sites - 31% of the projected annual recycling level in 2030) = Remaining shortfall requiring provision.
651,432 – 329,038 = 322,394 tonnes.

4.6 Provision is therefore required for 322,394 tonnes of additional recycling/re-use capacity annually.

Table 8: Projected shortfall in construction, excavation and demolition waste landfill disposal capacity up to 2030

Landfill	
Projected landfill requirement in 2030 (tonnes and cubic metres)	94,348 cubic metres
Additional cumulative landfill requirement 2010 – 2030 (cubic metres)	1,207,851 cubic metres
Current void space in permitted sites	549,095 cubic metres
Length of operational planning permission/license for the permitted sites	Roodscroft (507,520 cubic metres) expires in 2020.
Shortfall in capacity	658,756 cubic metres

Landfill capacity volume is calculated for construction, demolition and evacuation waste at a density ratio of 1.25 tonnes to 1 cubic metre.

4.7 The table shows that there will be a shortfall in landfill disposal capacity of approximately 658,756 cubic metres. Provision will therefore need to be made for additional capacity to meet this landfill disposal need from 2019 onwards.

5. Hazardous Waste

5.1 The projected hazardous waste arisings will increase from 46,827 tonnes in 2010 to 74,068 by 2030.

Table 9: Projected shortfall in hazardous waste recycling/re-use and recovery capacity up to 2030

Recycling/Re-use/Recovery	
Projected recycling/re-use levels in 2030	41,022 tonnes
Additional arisings (above current operational levels)	9,835 tonnes
Current permitted recycling/re-use capacity	100,000 tonnes*
Shortfall in capacity	None

* The majority of the currently permitted recycling/recovery capacity in Cornwall is treatment of oil.

5.2 The table shows that there is sufficient recycling capacity to meet the hazardous waste recycling needs up to 2030. However, the permitted capacity is primarily for treating oil. While the majority of hazardous waste arisings are oil this provision will not cater for non-oil recycling/recovery. Hazardous waste recycling facilities are usually specialist facilities that deal with one type of waste. Due to the relatively low amounts of hazardous waste that each waste planning authority area produces these facilities are usually operated at the regional or national scale. It is therefore not appropriate to make any additional provision for hazardous recycling facilities in Cornwall before 2030 unless specific demand can be identified which justifies the investment at the local level.

Table 10: Projected shortfall in hazardous waste landfill disposal capacity up to 2030

Landfill	
Projected landfill requirement in 2030 (tonnes and cubic metres)	31,042 cubic metres
Additional cumulative landfill requirement 2010 – 2030 (cubic metres)	556,277 cubic metres
Current void space in permitted sites	None
Length of operational planning permission/license for the permitted sites	-

Shortfall in capacity	556,277 cubic metres
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Landfill capacity volume is calculated for hazardous waste at a density ratio of 1 tonne to 1 cubic metre.

- 5.3 The table shows a shortfall of some 556,277 cubic metres. Taken at face value this would suggest that provision is needed for 556,277 cubic metres of additional landfill capacity for hazardous waste disposal. However, hazardous landfill facilities are provided at the regional or national level rather than the local level due to the costs of setting up such a facilities and the need to attract sufficient throughput to support the operation (i.e. the need to be centrally located and accessible). It is therefore not appropriate to make any additional provision in Cornwall before 2030 unless specific significant demand can be identified that cannot be met economically at the regional level.

5. Waste Water

- 5.1 The regulated water utility company South West Water is responsible for the majority of waste water management in Cornwall. The provision of treatment facilities is usually considered on a case-by-case basis in discussion with developers. Consequently it is not appropriate to make strategic provision for such facilities.

6. Agricultural Waste

- 6.1 Agricultural waste arisings amount to approximately 10,000 tonnes a year. There is little information available on how this tonnage is managed at present. It is therefore difficult to estimate a shortfall in waste management facilities and identify future provision. An additional 10,000 tonnes a year is unlikely to be sufficient to justify the identification of land for strategic waste management facilities dedicated to the agricultural sector. Consequently this report does not seek to identify future provision for this waste stream.

8. Summary of the additional provision required up to 2030 in Cornwall for each waste stream

Table 11: Additional waste management provision required in Cornwall up to 2030

Waste Management Process	Municipal	Commercial and Industrial	Construction, Demolition and Evacuation	Hazardous
Recycle/re-use (tonnes/year)	None	None	322,394	None
Recovery (tonnes/year)	None	3,000		
Landfill Disposal (cubic metres)	338,823	None	658,756	556,277