



North Yorkshire Sub Region Waste Arisings and Capacity Evidence



Waste Arisings and Capacity Requirements

Supplementary Note to Addendum Report

July 2015



Date	Details	Prepared by	Reviewed and approved by
09.07.15	Draft Note	Paul Knott	Carolyn Williams

CONTEXT

1. In 2013 North Yorkshire County Council (in conjunction with City of York Council and the North Yorkshire Moors and Yorkshire Dales National Park Authorities, hereafter referred to as 'the Council') commissioned Urban Vision and its partner 4Resources Ltd to prepare an assessment of waste arisings and capacity requirements for all controlled wastes created in the North Yorkshire sub-region.
2. The assessment forecast 9 scenarios based on a combination of 3 sets of growth assumptions (No Growth, Growth and Minimised Growth) and 3 sets of assumptions about recycling and landfill diversion rates (Baseline – ie. no change, Maximised Recycling and Median Recycling).
3. Following consultation on the original work the Council received representations suggesting that higher rates of recycling performance and lower rates of waste growth should be taken into account when assessing future waste capacity needs.
4. In Spring 2015 the Council commissioned the consultants to update and revise these estimates. The resulting work was documented in an addendum to the original assessment which was completed in late May and which proposed certain changes to the assumptions used previously. The Council then asked for these matters to be reflected in a revision of the needs assessment forecast model and for the results to be presented in this short supplementary note.
5. The addendum report compared estimated arisings in 2013 (the latest year for which data were available with those estimated by the original report which were projected from estimates in 2011. It concluded that the original forecasts were fairly close to the updated figures in all but one case identified later in this note. Any change in the results is therefore the result of other changes which were:
 - Growth rates for Commercial & Industrial (C&I) rates were reduced from 0.6% to 0% annually for the 'Growth' scenario and from 0% to -1% over the period to 2020 for the 'Minimised Growth' scenarios;
 - Recycling performance for C&I wastes does not stop at 75% by 2020 but continues to rise to 85% by 2030 (with a corresponding reduction in the amount of waste going to energy recovery);
 - Growth rate for Construction, Demolition & Excavation (CD&E) wastes were slightly increased over the period to 2020 but no growth was assumed thereafter to reflect the possible effects of economic recovery being concentrated in the current decade;
 - Recycling performance for CD&E wastes increased from 50% to 60% by 2020 for the 'Median Recycling' scenario only as the assumption for the 'Maximised Recycling' scenario was considered to reflect a realistic maximum rate;
 - Increase in recycling capacity due to the recognition of recycling taking place at transfer which was identified through a brief desk based review of their apparent function¹.
6. No changes were made to assumptions about Local Authority Collected Waste as the revised estimated arisings were very close to the level originally forecast and assumptions about future growth and recycling performance continue to reflect those

¹ Site functions were originally based on the type of Environmental Permit. However this does not always reflect the current activities which may have broadened since the original permit was issued. A number of local waste transfer stations were identified as providing recycling facilities and a further addition to the needs assessment model was made to include a recycling facility at this locations in addition to their function as transfer stations.

in the Joint Municipal Waste Management Strategy. Therefore the forecasts for this stream should not change significantly.

RECYCLING C&I WASTES

7. Information about the size of the C&I stream and how it is managed has been poor historically. The original assessment compared estimates derived from a 2009 regional survey for the North West (in the expectation this would be representative of the situation in North Yorkshire once corrected for differences in demographics and area) and those derived from a 2010 national survey which also provided estimates for the former Yorkshire and Humberside region. The original assessment provided results for North Yorkshire based on both sources which produce substantially different results, with those from the North West source being generally about 10% lower than those from the national source. The assessment below presents the results of assessment extrapolated from the former only as it is considered to be more accurate.
8. Table 1 below compares the revised capacity gaps. Negative figures indicate a capacity surplus.

Table 1: Comparison of Capacity Gaps for Recycling LACW, C&I and Agricultural Wastes²

BASELINE	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	471,808	518,690	548,357	578,574
Growth - 2015 update	- 26,972	- 263,483	- 199,571	- 140,229
Minimised Growth - original	447,632	469,782	474,088	478,181
Minimised Growth - update	- 43,858	- 296,447	- 236,068	- 177,249
MAXIMISED RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	548,427	679,020	716,157	754,184
Growth - 2015 update	56,354	- 96,831	- 32,919	26,423
Minimised Growth - original	519,493	610,860	612,651	614,355
Minimised Growth - update	35,384	- 145,728	- 86,858	- 28,039
MEDIAN RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	522,588	625,576	660,224	695,626
Growth - 2015 update	31,847	- 145,846	- 81,934	- 22,592
Minimised Growth - original	495,540	563,835	566,465	568,964
Minimised Growth - update	12,079	- 190,058	- 130,743	- 71,924

[Source: Revised Capacity Assessment model, 2015 – all figures in tonnes]

9. Table 1 shows a very significant shift in requirements across all scenarios with the previously-forecasts gaps replaced by small surpluses (assuming the baseline scenario is the least likely to materialise). Since the addendum revision concluded that the most recent arisings were close to the original forecast these changes must be due to the recognition of recycling taking place at transfer which was identified through a brief desk based review described earlier.

² Note that the management contract for LACW provides sufficient capacity to recycle that stream while the quantity of agricultural waste requiring recycling is extremely small. The title of this table reflects the working of the capacity assessment model but in practice the gaps and surpluses refer to the C&I stream alone.

RECYCLING CD&E WASTES

10. Information about CD&E waste arisings is derived from a database published annually by the Environment Agency. Although some wastes are not reported to this source it represents the single most accurate way of estimating the level of wastes created which will need to be managed in commercially operated waste facilities.
11. Table 2 summarises the site requirements as a result of the changes noted above

Table 2: Comparison of Capacity Gaps for Recycling CD&E Wastes

BASELINE	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	4,761	6,768	10,181	12,312
Growth - 2015 update	- 157,201	- 78,488	- 60,373	- 58,393
Minimised Growth - original	2,811	2,811	4,156	4,156
Minimised Growth - update	- 160,690	- 85,646	- 69,824	- 69,810
MAXIMISED RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	129,944	264,735	275,981	286,183
Growth - 2015 update	- 1,348	249,119	277,177	287,680
Minimised Growth - original	124,305	245,799	247,144	247,144
Minimised Growth - update	- 12,401	210,931	226,753	226,767
MEDIAN RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	88,216	178,746	187,381	194,892
Growth - 2015 update	- 47,187	152,764	177,898	185,894
Minimised Growth - original	83,807	164,803	166,148	166,148
Minimised Growth - update	- 47,187	152,764	177,898	185,894

[Source: Revised Capacity Assessment model, 2015 – all figures in tonnes]

12. The estimates in Table 2 reflect the combination of three factors. First, the Spring 2015 review produced an increased estimate of local arisings of these materials and, second, as noted above the growth rate was modified to assume a faster increase over period to 2020 than that applied previously. Finally, available capacity has been increased as a result of the recognition of recycling taking place at transfer which was identified through a brief desk based review described previously.
13. The results in Table 2 suggest the third of these factors has eliminated the short-term capacity gap. However this has been offset by the assumed increased growth over the rest of this decade so that there a reduced but still substantial gap by 2020 in the two scenarios that model continuing improvement in recycling performance.

LANDFILL REQUIREMENTS

14. The revisions described above have had knock-on effects on landfill requirements for most of the streams. Tables 3, 4 and 5 summarise the revised gap forecasts for the three main facility types at five year intervals.

Table 3: Comparison of Capacity Gaps for Non-Inert Landfill

BASELINE	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	- 103,345	60,462	96,069	113,720
Growth - 2015 update	- 149,784	169,516	188,263	188,263
Minimised Growth - original	- 123,268	20,123	34,772	30,877
Minimised Growth - update	- 160,831	147,965	164,673	164,673
MAXIMISED RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	- 205,504	- 153,311	- 127,665	- 120,505
Growth - 2015 update	- 247,815	- 26,545	- 7,798	- 7,798
Minimised Growth - original	- 219,083	- 167,982	- 149,980	- 150,689
Minimised Growth - update	- 254,057	- 29,351	- 10,869	- 10,869
MEDIAN RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	- 205,504	- 153,311	- 127,665	- 120,505
Growth - 2015 update	- 247,815	- 26,545	- 7,798	- 7,798
Minimised Growth - original	- 219,083	- 167,982	- 149,980	- 150,689
Minimised Growth - update	- 254,057	- 29,351	- 10,869	- 10,869

[Source: Revised Capacity Assessment model, 2015 – all figures in tonnes]

Table 4: Comparison of Capacity Gaps for Inert Landfill

BASELINE	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	- 18,553	170,670	336,030	346,791
Growth - 2015 update	- 381	163,326	338,598	362,004
Minimised Growth - original	- 28,390	150,698	305,614	305,614
Minimised Growth - update	- 18,596	126,008	289,505	302,884
MAXIMISED RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	- 143,736	- 87,297	70,230	72,920
Growth - 2015 update	- 156,234	- 164,281	1,048	15,931
Minimised Growth - original	- 149,884	- 92,290	62,626	62,626
Minimised Growth - update	- 166,885	- 170,569	- 7,072	6,307
MEDIAN RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	- 102,008	- 1,308	158,830	164,211
Growth - 2015 update	- 110,395	- 67,926	100,327	117,717
Minimised Growth - original	- 109,386	- 11,294	143,622	143,622
Minimised Growth - update	- 123,270	- 83,341	80,156	93,535

[Source: Revised Capacity Assessment model, 2015 – all figures in tonnes]

Table 5: Comparison of Capacity Gaps for Hazardous Landfill

BASELINE	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	7,405	7,593	7,786	7,985
Growth - 2015 update	8,427	8,683	8,946	9,217
Minimised Growth - original	7,216	7,216	7,216	7,216
Minimised Growth - update	8,170	8,170	8,170	8,170
MAXIMISED RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	7,405	7,593	7,786	7,985
Growth - 2015 update	8,427	8,683	8,946	9,217
Minimised Growth - original	7,216	7,216	7,216	7,216
Minimised Growth - update	8,170	8,170	8,170	8,170
MEDIAN RECYCLING	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Growth - original	7,405	7,593	7,786	7,985
Growth - 2015 update	8,427	8,683	8,946	9,217
Minimised Growth - original	7,216	7,216	7,216	7,216
Minimised Growth - update	8,170	8,170	8,170	8,170

[Source: Revised Capacity Assessment model, 2015 – all figures in tonnes]

OVERALL CAPACITY REQUIREMENTS

- For completeness, the appendix which follows presents the revised capacity gap summaries for all waste streams and management routes for the nine scenarios defined in the model, but with the revisions to growth and recycling performance assumptions referred to previously.

APPENDIX – REVISED CAPACITY GAPS³

Table A1: Capacity Gap Forecasts – No Growth Scenario; Baseline Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 151,129	169,516	188,263	188,263
Landfill (Hazardous)	8,170	8,170	8,170	8,170
Landfill (C+D)	- 18,180	126,820	290,394	303,773
Energy from waste	83,555	- 481,067	- 481,067	- 481,067
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	- 32,082	- 294,162	- 240,034	- 190,034
Recycling (C+D)	- 160,697	- 85,697	- 69,892	- 69,892
Composting	- 84,055	- 84,055	- 69,055	- 55,719
Treatment plant	- 139,911	- 239,911	- 238,885	- 238,885
Transfer station	- 971,905	- 1,046,905	- 963,100	- 918,100
Land recovery	14,847	14,847	14,847	14,847
Not in model	85,588	85,588	85,588	85,588

Table A2: Capacity Gap Forecasts – No Growth Scenario; Maximised Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 249,160	- 26,545	- 7,798	- 7,798
Landfill (Hazardous)	8,170	8,170	8,170	8,170
Landfill (C+D)	- 166,469	- 169,757	- 6,183	7,196
Energy from waste	98,260	- 451,658	- 451,658	- 451,658
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	51,244	- 127,510	- 73,382	- 23,382
Recycling (C+D)	- 12,408	210,880	226,685	226,685
Composting	- 84,055	- 84,055	- 69,055	- 55,719
Treatment plant	- 139,911	- 239,911	- 238,885	- 238,885
Transfer station	- 971,905	- 1,046,905	- 963,100	- 918,100
Land recovery	14,847	14,847	14,847	14,847
Not in model	85,588	85,588	85,588	85,588

Table A3: Capacity Gap Forecasts – No Growth Scenario; Median Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 249,160	- 26,545	- 7,798	- 7,798
Landfill (Hazardous)	8,170	8,170	8,170	8,170
Landfill (C+D)	- 122,854	- 82,529	81,045	94,424
Energy from waste	122,767	- 402,643	- 402,643	- 402,643
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	26,737	- 176,525	- 122,397	- 72,397
Recycling (C+D)	- 56,023	123,652	139,457	139,457
Composting	- 84,055	- 84,055	- 69,055	- 55,719
Treatment plant	- 139,911	- 239,911	- 238,885	- 238,885
Transfer station	- 971,905	- 1,046,905	- 963,100	- 918,100
Land recovery	14,847	14,847	14,847	14,847
Not in model	85,588	85,588	85,588	85,588

³ All figures in this appendix as expressed in tonnes. Negative figures identify capacity surpluses.

Table B1: Capacity Gap Forecasts – Growth Scenario; Baseline Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 149,784	169,516	188,263	188,263
Landfill (Hazardous)	8,427	8,683	8,946	9,217
Landfill (C+D)	- 381	163,326	338,598	362,004
Energy from waste	86,527	- 456,390	- 448,676	- 441,341
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	- 26,972	- 263,483	- 199,571	- 140,229
Recycling (C+D)	- 157,201	- 78,488	- 60,373	- 58,393
Composting	- 84,055	- 84,055	- 69,055	- 55,719
Treatment plant	- 137,474	- 234,920	- 232,248	- 230,813
Transfer station	- 971,865	- 1,046,825	- 962,980	- 917,940
Land recovery	14,847	14,847	14,847	14,847
Not in model	85,588	85,588	85,588	85,588

Table B2: Capacity Gap Forecasts – Growth Scenario; Maximised Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 247,815	- 26,545	- 7,798	- 7,798
Landfill (Hazardous)	8,427	8,683	8,946	9,217
Landfill (C+D)	- 156,234	- 164,281	1,048	15,931
Energy from waste	101,232	- 426,981	- 419,267	- 411,932
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	56,354	- 96,831	- 32,919	26,423
Recycling (C+D)	- 1,348	249,119	277,177	287,680
Composting	- 84,055	- 84,055	- 69,055	- 55,719
Treatment plant	- 137,474	- 234,920	- 232,248	- 230,813
Transfer station	- 971,865	- 1,046,825	- 962,980	- 917,940
Land recovery	14,847	14,847	14,847	14,847
Not in model	85,588	85,588	85,588	85,588

Table B3: Capacity Gap Forecasts – Growth Scenario; Median Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 247,815	- 26,545	- 7,798	- 7,798
Landfill (Hazardous)	8,427	8,683	8,946	9,217
Landfill (C+D)	- 110,395	- 67,926	100,327	117,717
Energy from waste	125,739	- 377,966	- 370,252	- 362,917
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	31,847	- 145,846	- 81,934	- 22,592
Recycling (C+D)	- 47,187	152,764	177,898	185,894
Composting	- 84,055	- 84,055	- 69,055	- 55,719
Treatment plant	- 137,474	- 234,920	- 232,248	- 230,813
Transfer station	- 971,865	- 1,046,825	- 962,980	- 917,940
Land recovery	14,847	14,847	14,847	14,847
Not in model	85,588	85,588	85,588	85,588

Table C1: Capacity Gap Forecasts – Minimised Growth Scenario; Baseline Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 160,831	147,965	164,673	164,673
Landfill (Hazardous)	8,170	8,170	8,170	8,170
Landfill (C+D)	- 18,596	126,008	289,505	302,884
Energy from waste	84,633	- 460,088	- 452,737	- 445,417
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	- 43,858	- 296,447	- 236,068	- 177,249
Recycling (C+D)	- 160,690	- 85,646	- 69,824	- 69,810
Composting	- 84,438	- 84,799	- 69,870	- 56,534
Treatment plant	- 141,629	- 243,262	- 242,553	- 242,553
Transfer station	- 972,225	- 1,047,530	- 963,784	- 918,784
Land recovery	14,118	13,428	13,294	13,294
Not in model	81,392	77,404	76,629	76,629

Table C2: Capacity Gap Forecasts – Minimised Growth Scenario; Maximised Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 254,057	- 29,351	- 10,869	- 10,869
Landfill (Hazardous)	8,170	8,170	8,170	8,170
Landfill (C+D)	- 166,885	- 170,569	- 7,072	6,307
Energy from waste	98,617	- 433,491	- 426,405	- 419,085
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	35,384	- 145,728	- 86,858	- 28,039
Recycling (C+D)	- 12,401	210,931	226,753	226,767
Composting	- 84,438	- 84,799	- 69,870	- 56,534
Treatment plant	- 141,629	- 243,262	- 242,553	- 242,553
Transfer station	- 972,225	- 1,047,530	- 963,784	- 918,784
Land recovery	14,118	13,428	13,294	13,294
Not in model	81,392	77,404	76,629	76,629

Table C3: Capacity Gap Forecasts – Minimised Growth Scenario; Median Recycling

Stream and function	Gap2015	Gap2020	Gap2025	Gap2030
Landfill (C+I, LACW, Agri)	- 254,057	- 29,351	- 10,869	- 10,869
Landfill (Hazardous)	8,170	8,170	8,170	8,170
Landfill (C+D)	- 123,270	- 83,341	80,156	93,535
Energy from waste	121,922	- 389,161	- 382,520	- 375,200
High temperature incineration	13,632	13,632	13,632	13,632
Recycling (C+I, LACW, Agri)	12,079	- 190,058	- 130,743	- 71,924
Recycling (C+D)	- 56,016	123,703	139,525	139,539
Composting	- 84,438	- 84,799	- 69,870	- 56,534
Treatment plant	- 141,629	- 243,262	- 242,553	- 242,553
Transfer station	- 972,225	- 1,047,530	- 963,784	- 918,784
Land recovery	14,118	13,428	13,294	13,294
Not in model	81,392	77,404	76,629	76,629