

ITEM 8

PAPER NO. WRWA **832**

WESTERN RIVERSIDE WASTE AUTHORITY

MEETING	28 th June 2017
REPORT AUTHOR/DATE	General Manager <i>(Contact Mark Broxup - Tel. 020 8871 2788)</i> 20 th June 2017
SUBJECT	Various matters associated with Recycling performance.
CONTENTS	Page 1 Introduction Page 2 Executive Summary Pages 3 - 29 Additional information Page 29 Recommendations Pages 31 - 47 Appendix - Reproduction of all Graphs and Tables used in this report in a larger format
STATUS	Open
BACKGROUND PAPERS	None

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INTRODUCTION

1. At the previous meeting of the Authority in January 2017, during discussion on Paper No. WRWA 823, it was agreed that the General Manager would submit an in-depth report on recycling to the Authority's meeting in June, which could form the basis for a Members' Forum at Smugglers Way in the Autumn.
2. The development of future European, National and Regional waste priorities and strategies are currently at various stages of development and consultation. In order to effectively contribute to future consultations the Authority needs a firm evidence base for its performance currently and, from that, a better understanding of the steps it can take to improve that performance in both environmental and economic terms.
3. The Authority also needs to explore who should be charged with meeting future recycling targets – producers, packers, wholesalers, retailers, waste management companies or local authorities, or a combination of these stakeholders.
4. An holistic approach also needs to be taken. For example packaging, which at the end of its life might be difficult to reuse or recycle, may well have produced significant environmental benefits earlier in a product's life cycle – for example, by significantly prolonging the 'use by' date of food stuffs, reducing transport impacts or simply by being less damaging than the alternatives.
5. Using this knowledge the Authority, and its constituent councils, will be able more effectively to lobby for a legislative framework that will help maximise waste being managed in accordance with the waste hierarchy.
6. This report compares weight based recycling performance across the Authority's area to that of London and England as a whole over the last decade. It then analyses that performance data against the composition of the Authority's waste and highlights what future recycling performance might be realistically achievable.
7. This report uses data from the Authority's own records and WasteDataFlow and the objective of the report is look for trends that can inform an assessment of how the Authority's waste stream is managed today and how that might change in the future.

8. It is hoped that the final outcome of this work could ultimately lead to the development of a new Joint Waste Strategy between the Authority and the constituent councils during 2018.

EXECUTIVE SUMMARY

9. Weight based targets have driven the UK's recycling performance up over the last two decades, but performance levels have plateaued (and even fallen back) over recent years and performance is currently at levels well below those targeted. This report explores whether or not weight based recycling targets are the most appropriate measure going forward.
10. Over the last decade the Authority and its Constituent Councils have been successful in achieving the aims of the waste hierarchy by:
 - a) reducing the Municipal waste it handles by 18% (London as a whole only saw a 12% reduction) and the Household waste it handles by 26% against a background of increasing population and household numbers (London as a whole only saw a 9% reduction);
 - b) increasing the overall Household recycling rate from 19% to 26% (London as whole increased from 20% to 30%), but the recycling of Dry Recyclables (i.e. the post-consumer elements of the Household waste stream such as paper, glass, plastics and cans) increased from 14% to 21% across the Authority's area, whilst London as a whole saw an increase from 13% to 19%. This performance improvement was achieved whilst the density of the recyclable material being targeted reduced significantly over the decade and despite the Authority's area being among the most urbanised in the country.
 - c) reducing from 80.0% to 0.9% the amount of waste the Authority landfills; and
 - d) using its residual waste to recover energy and with the residues from the recovery process also being recycled.
11. The Mayor of London is expected to review his recycling targets shortly, but the existing targets are to achieve Municipal recycling rates of 50% by 2020 and 60% by 2032 and the EU is currently proposing a Municipal recycling target of 70% by 2030.

12. These existing targets are in contrast to the current Municipal recycling rates of around 30% and 21% being achieved across London and the Authority's area respectively. This report explains why it may be challenging to increase the Municipal recycling performance across the Authority's area to over 30%.
13. The report recommends that the data within it, and the conclusions drawn from it, are independently checked. It also recommends that the suitability of having a range of performance targets be explored, as opposed to the current 'one size fits all' weight based recycling target. Consideration should also be given as to whether or not a different measure, such as one based on Carbon reduction, might be a more effective or complementary target to simple weight based ones.
14. A variety of 'SMART' targets maybe be useful when considering different components of the waste stream; collection challenges between rural and urban areas, low-rise and high-rise accommodation, and Household and Commercial waste.
15. The report also recommends that consideration be given to enhancing the current recycling programme with a new focus on a number of waste minimisation initiatives, including home composting, food waste and nappies. These would focus more attention on the top of the waste hierarchy and could deliver the largest environmental and economic benefits.
16. Whatever policies and measures are pursued in the future, the Authority needs to reconsider how best to communicate them to the public and it is also recommended that further advice be sought on this point. This is particularly important given the diversity of how the public now accesses the media and the high transient nature of the population in the Authority's area.

BACKGROUND INFORMATION

17. It is useful that this report be considered within the legislative and contractual framework that the Authority operates within, together with current and proposed European, National and Regional waste and recycling targets.

Legislative & Contractual Background to the Authority

18. Western Riverside Waste Authority was established in 1986 as an autonomous statutory local government body to undertake the waste disposal functions

prescribed by the Local Government Act 1985 and the Waste Regulation and Disposal (Authorities) Order 1985.

19. The Authority assumed responsibility for waste disposal on behalf of four London Boroughs; Hammersmith & Fulham, Lambeth, Wandsworth and the Royal Borough of Kensington and Chelsea. It is managed by a committee made up of eight Members, comprised of two elected Councillors from each of its four constituent councils.
20. The Authority owns the freehold to two riparian waste Transfer Stations both situated in the Borough of Wandsworth; one in Smugglers Way, SW18 1JS, and the other in Cringle Street, SW8 5BX.
21. The Authority manages around 400,000 tonnes of waste and recyclables per year, most of which is household waste generated by a population of some 850,000 residents within its constituent boroughs.
22. Under Section 45 of the Environmental Protection Act 1990 (the Act) the constituent councils have a duty to arrange for the collection of controlled waste in their boroughs and, under Section 48 of the Act, they have a duty to deliver it to wherever the Authority directs – this is commonly referred to as the Authority’s ‘Power of Direction’. Section 51 of the Act sets out the Authority’s duties for the management of the waste delivered to it.
23. However, under Section 48(2) of the Act, a constituent council can retain waste itself for recycling, but under Section 48(4) it does require the Authority’s permission. As defined in the Act, the Authority has made arrangements to recycle all constituent council waste and a protocol exists for constituent councils to make requests to retain waste for recycling. It should also be noted that, under Section 55 of the Act, the Authority has a power to use waste for the purpose of producing from it heat or electricity or both, but the constituent councils do not.
24. Under Section 52(9) of the Act the Authority can charge the constituent councils directly for the costs of managing the commercial and industrial waste they deliver to it.
25. The Joint Waste Disposal Authorities (Levies) (England) Regulations 2006 give the Authority the power to issue levies on its constituent councils “to meet all liabilities falling to be discharged by it for which no provision is otherwise made”

and this is commonly referred to as the Authority's 'Power of Levy'. The Authority uses its Power of Levy to recover all its liabilities, except those in relation to Section 52(9) of the Act.

26. Since April 2009 the Constituent Councils have unanimously agreed to apportion the levy on a direct cost per tonne basis for each material type. This directly incentivises each council, both environmentally and financially, to maximise its conformity with the waste hierarchy. The Authority is required to set its levy annually by 15th February each year under section 3.3 of the 2006 regulations.
27. In 2016 the broad cost of the Authority's services was £52 million. £47 million (90%) was directly related to the tonnage of waste received. The remaining £5 million was principally made up of fixed costs associated with business rates and capital financing charges with the 'variable spend' (representing about 1% of the overall budget) being mainly associated with staffing, consultancy and other services.
28. Around 80% of the tonnage handled by the Authority and 93% of the £47 million direct spend on waste tonnage received is attributable to General or 'black bag' Waste which cost the constituent councils £142 per tonne. Co-Mingled Recycling cost £25 per tonne, but only represented around 15% of the tonnage and 4% of the cost. All the other waste streams combined (mainly road sweeping detritus and bulk recyclables such as garden waste) amounted to around 2% of the total waste stream and 3% of the direct spend on waste.

European, National and Regional waste and recycling targets

29. In 1996 the Government introduced Landfill Tax, the UK's first environmental tax, to increase the cost of landfill and thereby make it less financially attractive compared to recycling and other alternative waste treatment methods. The Landfill Tax was seen as a mechanism to help enable the UK to meet the targets that were due to be set out in a forthcoming EU Landfill Directive for the landfilling of biodegradable waste.
30. In 1999, The Landfill Directive (Council Directive 1999/31/EC) was introduced to regulate the use of landfill in the European Union. The Landfill Directive required that the biodegradable municipal waste landfilled be progressively reduced to:
 - a) 75% of that produced in 1995 by 2010;
 - b) 50% of that produced in 1995 by 2013; and

- c) 35% of that produced in 1995 by 2020.
31. Given that in 1995 over 80% of municipal waste in the UK was being landfilled, these were demanding targets. The Waste Emissions Trading Act 2003 introduced a Landfill Allowances Trading Scheme (LATS) as an economic driver to help achieve these targets and also included provisions for any EU fines on the UK, for failure to meet the targets, to be passed through by Government to those local authorities that had failed to hit to meet the individual targets set for them as part of the LATS.
 32. The LATS started in 2004 with a £150/tonne penalty for local authorities that landfilled more than their allowance (plus the potential to incur European fines). Landfill Tax at the time was only £15/tonne, having risen from an original level of £7 with increases of only £3 per year announced, with the escalation in Landfill Tax only increasing by £8 per year from 2008. Therefore, during the early and mid 'noughties', LATS was the key economic driver, but by 2009 for various reasons the level of municipal waste being landfilled had changed dramatically and Landfill Tax, then at £72 per tonne, was seen as the primary economic driver and the LATS was abolished in 2013.
 33. In 1999 only around 8% of household waste in the UK was being recycled; through the (Best Value) Performance Standards Order 2001 it set individual recycling targets for local authorities based upon their 1989/90 recycling performance. The Authority's target for 2003/04 was 16% and 24% for 2005/06. There were no financial penalties for failing to meet the targets, but meeting them did allow local authorities certain freedoms and flexibilities.
 34. The Mayor of London is required to publish a Municipal Waste Strategy and local authorities in London are required to work in 'general conformity' with it. The first strategy published in 2003 set a target to recycle 33% of Household Waste by 2015. In subsequent revisions the targets have changed, to recycle or compost at least 45% of Municipal waste by 2015, 50% by 2020 and 60 % by 2031. A new 'London Plan' is due to be published for consultation in the autumn of 2017 and new waste recycling targets are expected to be announced as part of that process.
 35. Since 2008 Directive 2008/98/EC on waste (Waste Framework Directive) has set the basic concepts and definitions related to waste management across the European Union. The Waste Framework Directive (WFD) is implemented in

England and Wales through the Waste (England and Wales) Regulations 2011 which were later amended in 2012.

36. The WFD requires that, by 2020, the UK needs to be preparing for re-use and the recycling of municipal waste to a minimum of 50 % by weight. England and the UK as a whole is currently achieving around 44%, having fallen from a peak in previous years of around 45%. The UK government has not passed these targets onto local authorities and statutory recycling targets for local authorities were abolished in 2010.
37. The EU is currently considering proposals to increase the recycling target to 70% of municipal waste by weight by 2030.
38. The WFD also introduced a new five-step hierarchy of waste management options to waste legislation:
 - a) Waste prevention, as the preferred option, followed by;
 - b) Reuse
 - c) Recycling
 - d) Recovery, including energy recovery; and
 - e) Safe disposal.
39. Another consequence of the WFD directive was that, as of January 2015, local authorities had to provide separate collection of paper, plastics, metal and glass where they are technically, environmentally and economically practicable (TEEP) and appropriate to meet the necessary quality standards for the relevant recycling sectors. Local Authorities are required to formally assess the route they take and to justify comingled collection if that is what they have chosen. Each of the constituent councils and the Authority (for waste collected at the Household Waste and Recycling Centre) have carried out their own TEEP assessments and each independently concluded that co-mingled collection was justified for their area.

WASTE ARISING AND MANAGEMENT

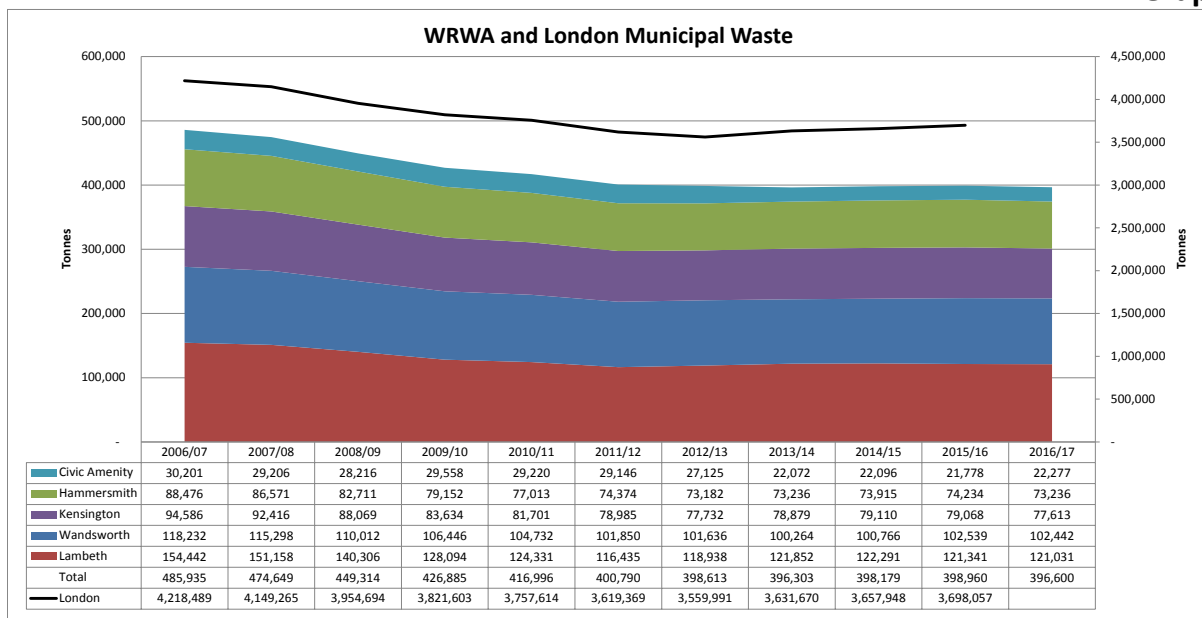
40. Good data is critical to achieving a proper understanding of the Authority's waste streams. For the purposes of this report 2006/07 is generally used as the baseline so as to be able to demonstrate performance over the last decade. Data

in this section is sourced from the Authority's own records and WasteDataFlow, with some packaging information sourced from WRAP.

41. This report does not show detailed figures for every waste stream but rather, in the context of European, national and regional strategies, it tries to explore key policy areas and to highlight what future targets and initiatives might best lead the Authority to finding further environmental and economic improvements.
42. The waste streams are analysed in terms of both Municipal and Household sources and by Local Authority and the analysis concentrates on three major waste groupings:
 - a) 'Residual Waste' (i.e. that which cannot be reused or recycled);
 - b) 'Co-mingled Recycling' (clear sack recycling which is primarily post-consumer material i.e. paper, plastics and glass); and
 - c) 'Other Recycling' (including Reuse and ALL other minor waste streams a number of which, e.g. garden waste, are not affected by consumerism).

Local Authority Collected Municipal Waste

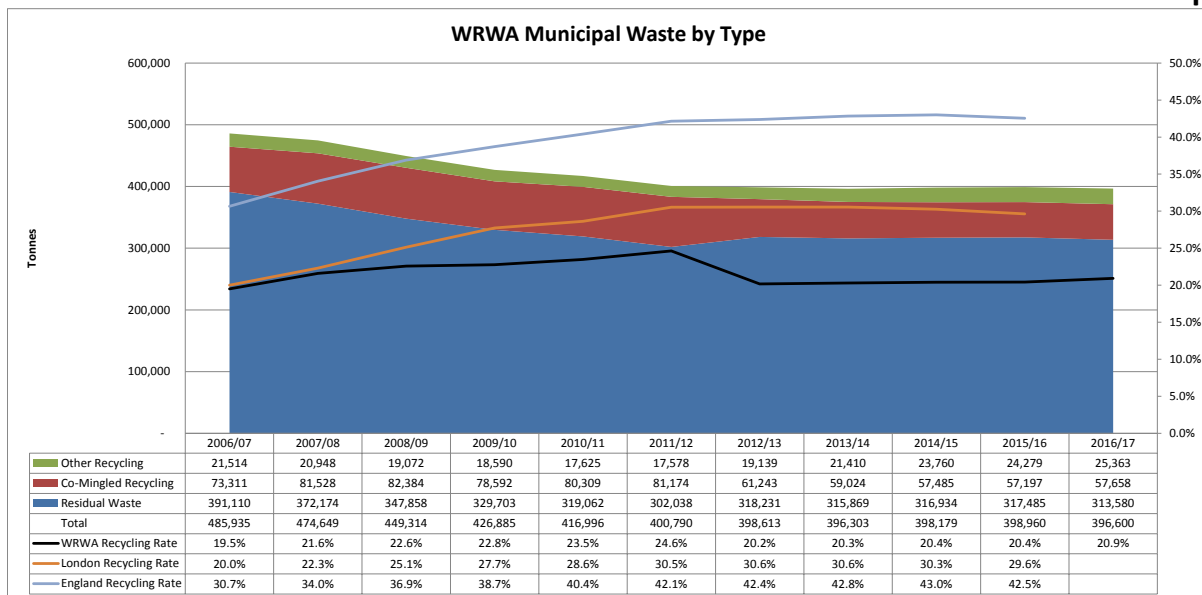
Graph 1



43. Graph 1 above shows that Local Authority Collected Municipal Waste (Household Waste and Commercial Waste) in the Authority's area has fallen by over 89,000 tonnes (18%) in the last ten years. Over the same period London and England

only saw reductions of 12% and 11% respectively. The timing and rate of the reduction is very similar across all four constituent councils as indeed it is across London and, if we showed the equivalent graph for England, the same profile would be evident. Please note that all Graphs and Tables provided in this report have been reproduced in a larger format and attached as an appendix to this report.

Graph 2

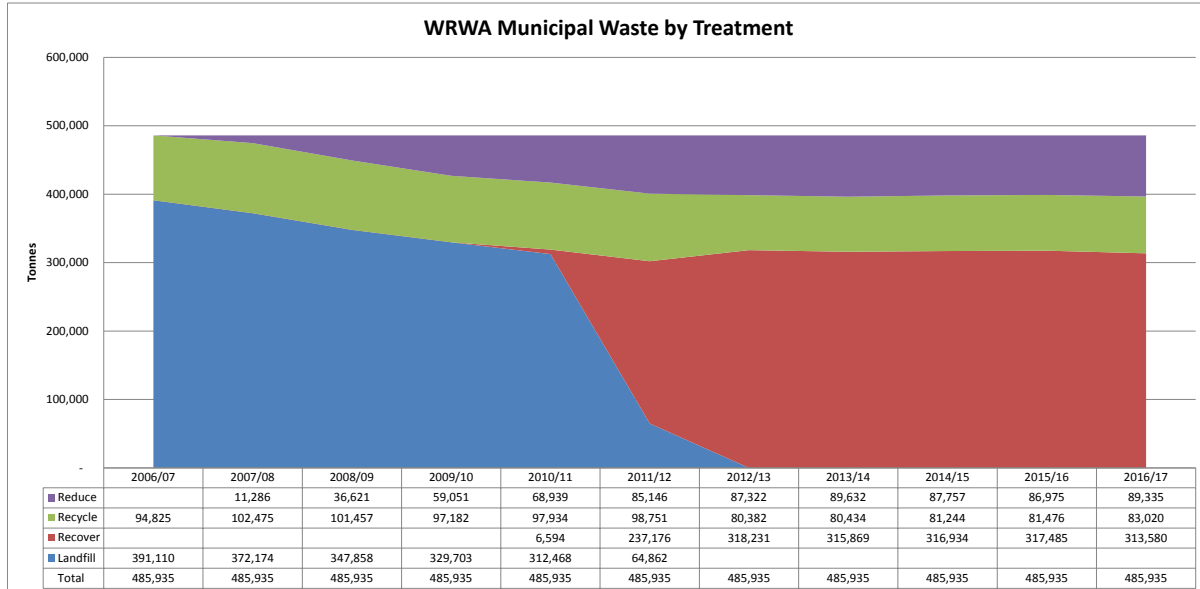


44. Graph 2 shows that the reduction in Local Authority Collected Municipal Waste across the Authority's area has primarily been due to a drop in Residual Waste of over 77,000 tonnes (20%) and Co-Mingled Recycling by nearly 16,000 tonnes (21%), but these reductions have been offset by an increase of almost 4,000 tonnes of 'Other Recycling'.
45. Graph 2 also shows that the Authority's Municipal Recycling Rate has only risen by around 1.5 percentage points from 19.5% to 20.9% over the period. This does not match the increase in recycling rate of around 10 percentage points in both London and England. However, as will be explained in the Household Recycling section below, a large element of this difference in performance is accounted for by the collection of Garden Waste and, in 2012, the Authority being one of the first to recognise the problem of contamination in Dry recycling collections.
46. Graph 3 overleaf shows how the reduction in Local Authority Collected Municipal Waste in the Authority's area over the decade represents a greater tonnage than that now being recycled. Not only is this in conformity with the waste hierarchy, which places more importance on waste reduction than recycling, but it also

represents an annual saving to the Authority and thus to the constituent Councils of up to £11.5 million a year.

47. Graph 3 below shows the Authority’s transition to using its residual waste for energy recovery, rather than sending it to landfill over the decade, again fully in accordance with the waste hierarchy.

Graph 3



Observation:

48. *The fact that Municipal Waste has decreased so significantly and that recycling has increased across the UK as a whole was the reason that LATS became redundant as, by 2012, the amount of Biodegradable Municipal Waste (BMW) sent to landfill across the UK had dropped to 29% – i.e. below the 35% by 2020 target set out under the Landfill Directive.*
49. *In the early ‘2000s’ it had been a widely held view that the necessary reductions in BMW going to landfill would only be achieved in small part by an increase in recycling and the majority of reduction would need to come from non-recyclable waste or ‘residual waste’ switching from landfill to energy recovery methods.*
50. *This led to a large number of waste infrastructure projects, primarily ‘Energy from waste’, being pursued under the ‘Private Finance Initiative’ (PFI) and Public Private Partnership (PPP) process, but these projects were often slow to come to fruition due to planning delays and/or legal and financial complexities.*

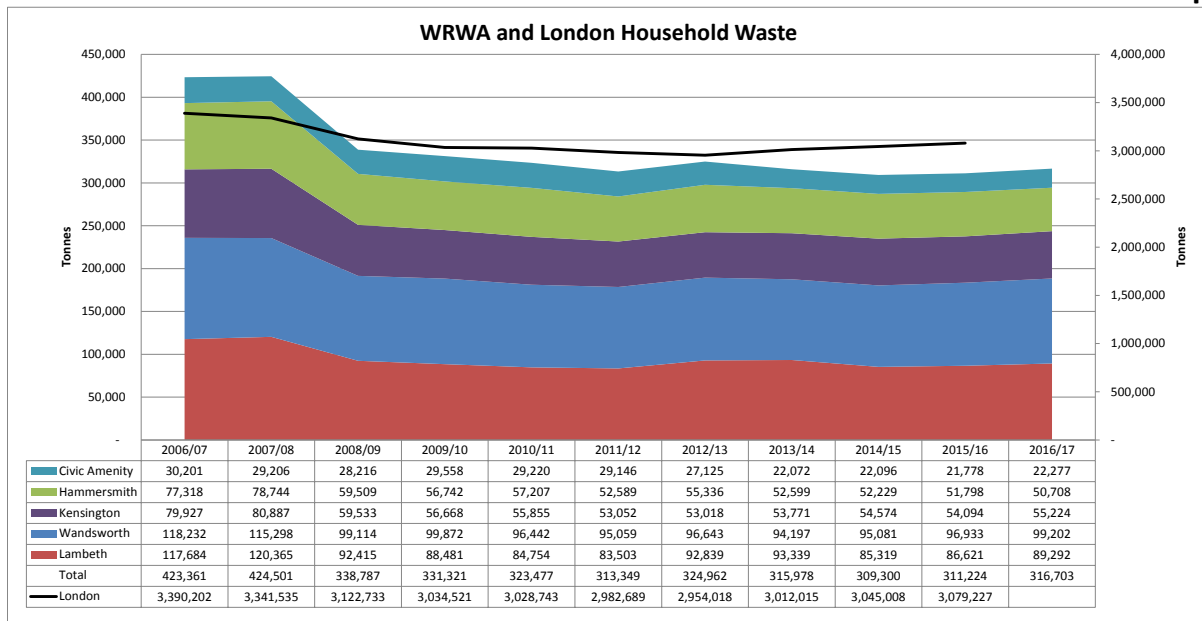
51. *Whilst a significant tonnage of residual waste was ultimately diverted from landfill by these projects (the Authority's own contract with Cory Environmental Limited and the development of the Energy from Waste Facility at Belvedere in the London Borough of Bexley being a good example) other significant factors have also come into play, including:*
- a) *The economic slowdown, following the 2008 banking crisis, caused a significant reduction in waste arisings generally;*
 - b) *The composition of the municipal waste stream changed significantly, for example:*
 - i. *existing packaging became significantly lighter (e.g. glass bottles can now be up to 34% lighter than they were in 2006);*
 - ii. *products became packaged in lighter materials e.g. many liquids are now sold in plastic rather than glass bottles;*
 - iii. *new types of packaging were introduced, e.g. pet food in aluminium pouches*
 - iv. *there was a reduction in the physical size of newspapers when advertising revenue dropped and circulation levels dropped as other types of media outlets grew but, counteracting this, there was an increase in the use of cardboard as more and more consumer items were purchased online and delivered direct to the home.*
 - c) *Collection methods changed in many parts of the country - residual waste bins become smaller and were collected less frequently so as to incentivise the public to minimise or recycle their waste.*
52. *The fact that, over the decade, Local Authority Collected Municipal Waste has changed so consistently across each of the Authority's four constituent councils and London and England as a whole, would seem to indicate that wider economic and environmental factors are the key driving forces behind waste arisings falling and not local initiatives.*

53. *It would appear that these factors are influencing both the Dry Recycling and the Residual Waste streams, both of which are primarily post-consumer driven, as tonnages of both have fallen over the decade.*

Household Waste

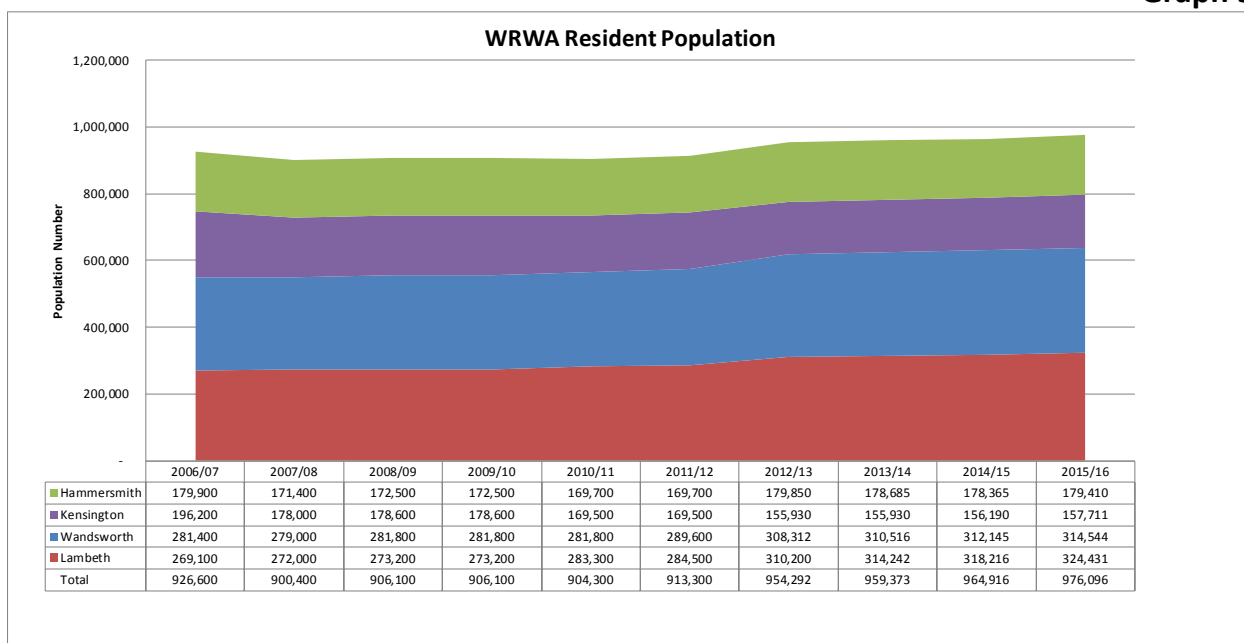
54. Graph 4 below shows how Household Waste arisings across the Authority’s area have fallen over the last decade, notably in 2008/09 following the economic crash, but also due in part to the Authority and the Constituent Councils revisiting their interpretation of the definition of Household Waste at that time. Household Waste in the Authority’s area fell by around 112,000 tonnes over the period, a fall of over 26% compared to falls in both London and England of only 9%.

Graph 4

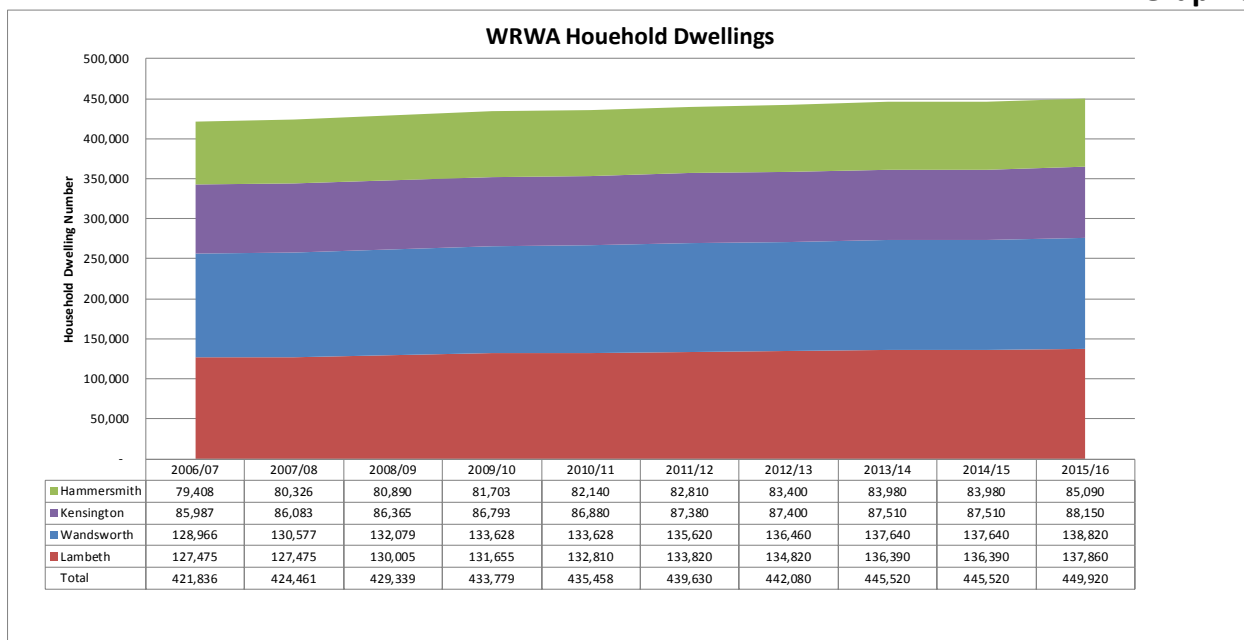


55. Graph 4 also highlights that reductions have not been equal across the four boroughs, with Wandsworth tonnage in particular only falling by 18% compared to 24% in Lambeth and over 30% in Hammersmith & Fulham and Kensington and Chelsea.
56. However, as Graphs 5 & 6 opposite show, this 26% fall in Household Waste arisings in the Authority’s area has been set against increases in both population and household numbers of around 5% and 7% respectively.

Graph 5



Graph 6

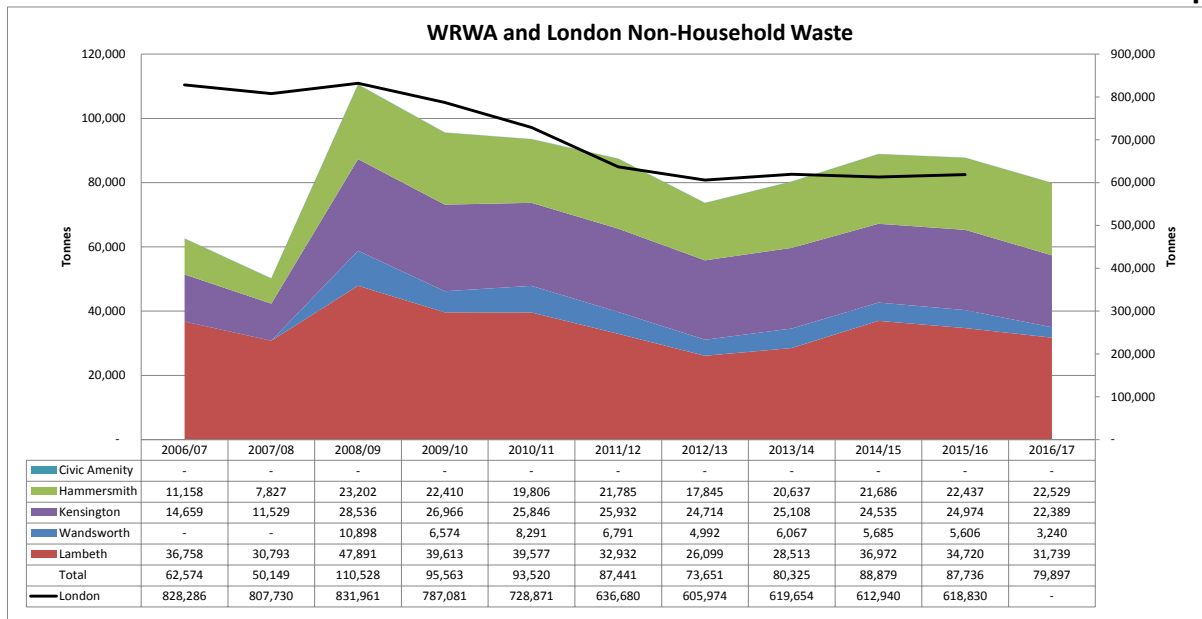


57. Over the decade the average waste arisings per household across the Authority's area have dropped by nearly one third, from around 1,000 kilogrammes per year or 19 kilogrammes per week to 690 kilogrammes per year or 13 kilogrammes per week and the waste arisings per person across followed a similar pattern. Across London and England the falls were lower (21% and 16% respectively).

Local Authority Collected Commercial Waste

58. Graph 7 below shows that, following the readjustment around the definition of household waste in 2008/09, the collection of Non-Household Waste by the four constituent councils has generally followed a similar pattern to that of London as a whole. The graph also highlights the fact that Wandsworth's tonnage is the lowest as, in contrast to the other three boroughs, it does not actively collect commercial waste.

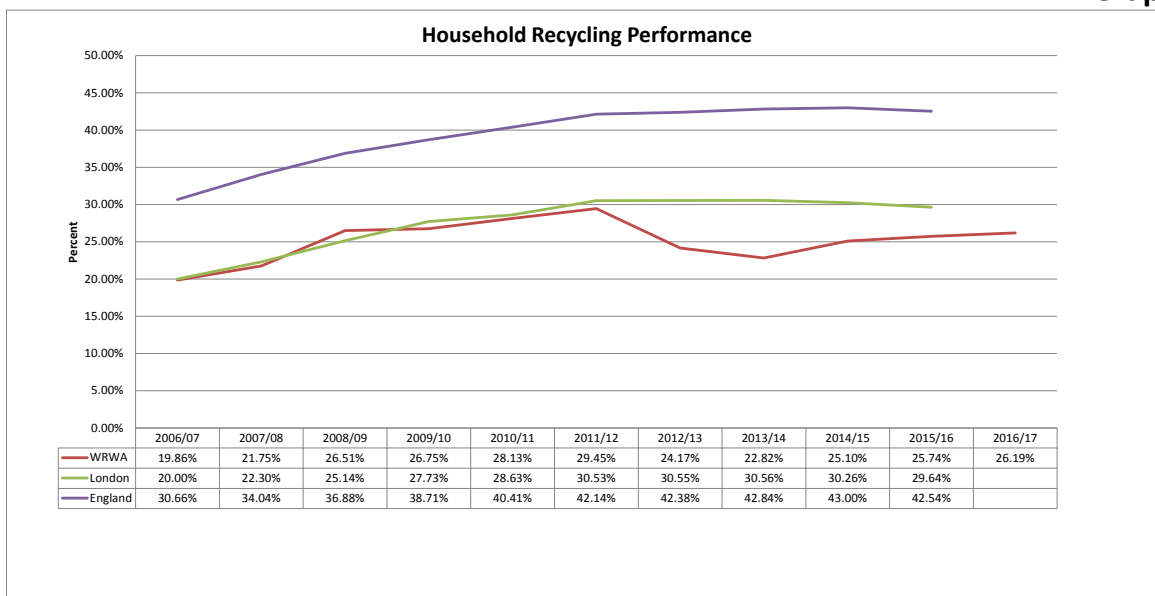
Graph 7



Recycling Performance

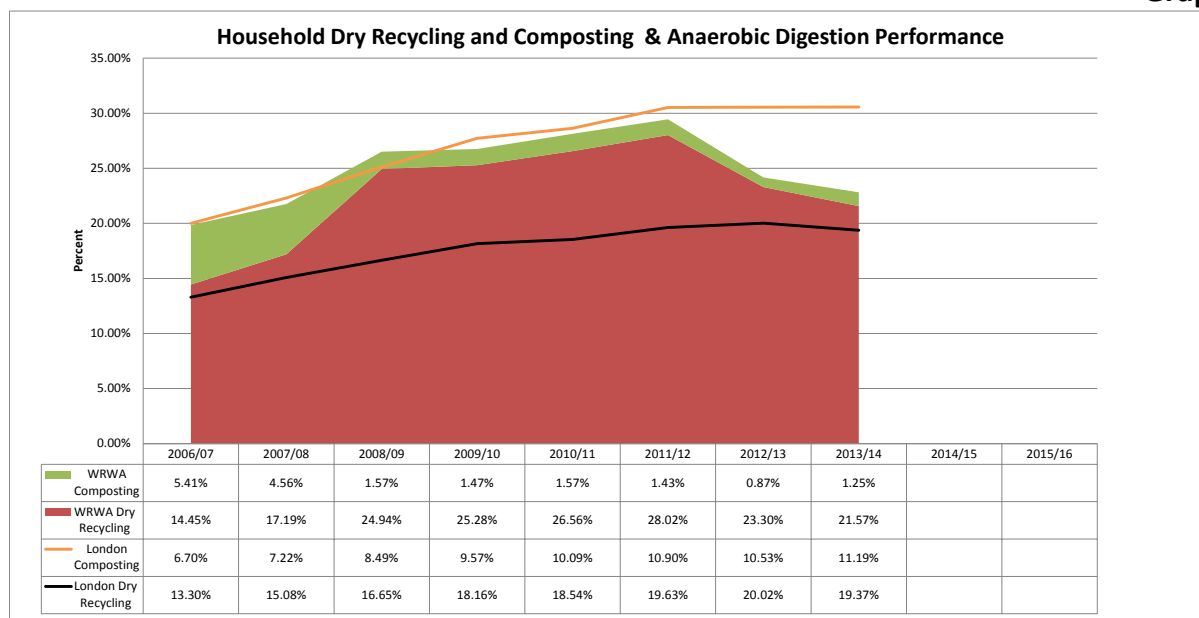
59. Graph 8 opposite shows how the average Household recycling rate for London and England as a whole have both followed the same pattern and, putting aside the impact of reporting recycling contamination between 2011 and 2013, the Authority's recycling rate has followed a similar pattern and in the last few years has improved.

Graph 8



60. Graph 9 below looks at the overall Household recycling performance rate in more detail by splitting it into Dry Recycling, i.e. cans, bottles, paper etc., and 'Composting & Anaerobic Digestion' which is predominately made up of Garden Waste with a small amount of Food Waste.

Graph 9

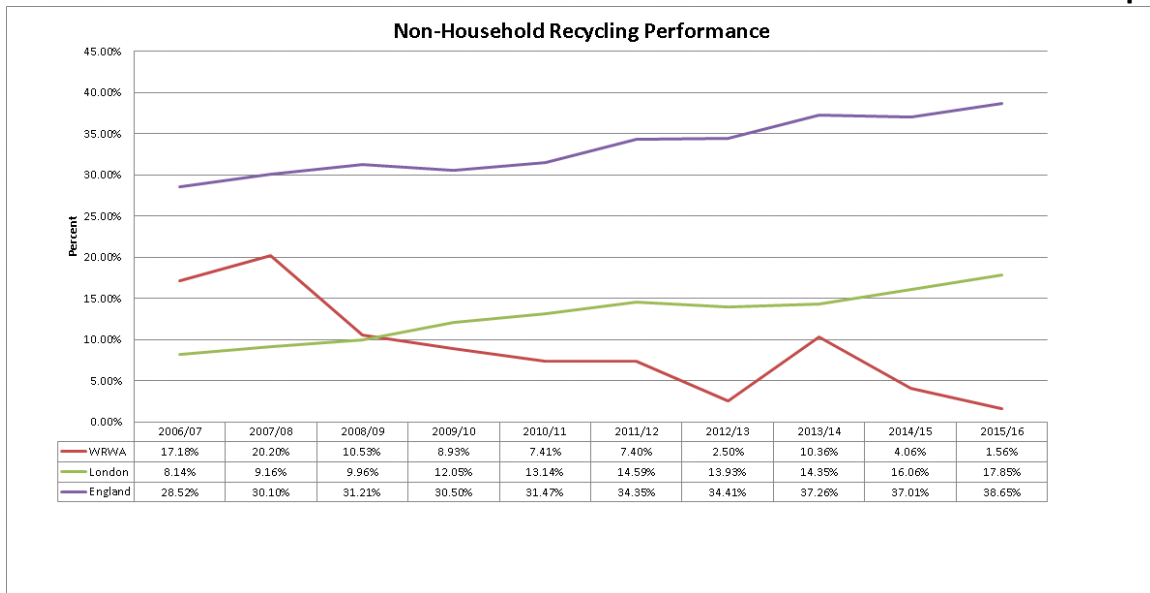


61. Graph 9 clearly shows that the Authority has consistently outperformed London as a whole in terms of Household Dry Recycling performance. It has to be remembered that the Authority's area is densely urban in nature and

consequently there is relatively little Garden waste available for collection. The composting tonnages before 2009 were generally as a consequence of green waste from parks waste being handled by the Authority, but the constituent councils now tend to compost that material on site and it does not get accounted for in government recycling statistics as a result.

62. Graph 10 below shows the recycling performance for local authority collected Non-Household waste (mainly Commercial Waste but including some Industrial Waste) in the Authority’s area, London and England. An important thing to note is that, in each geographical area, the Non-Household waste recycling performance is significantly below the Household waste recycling level. For example, in London as a whole, Household recycling performance is around 30% and Non-Household recycling is around 18%.

Graph 10



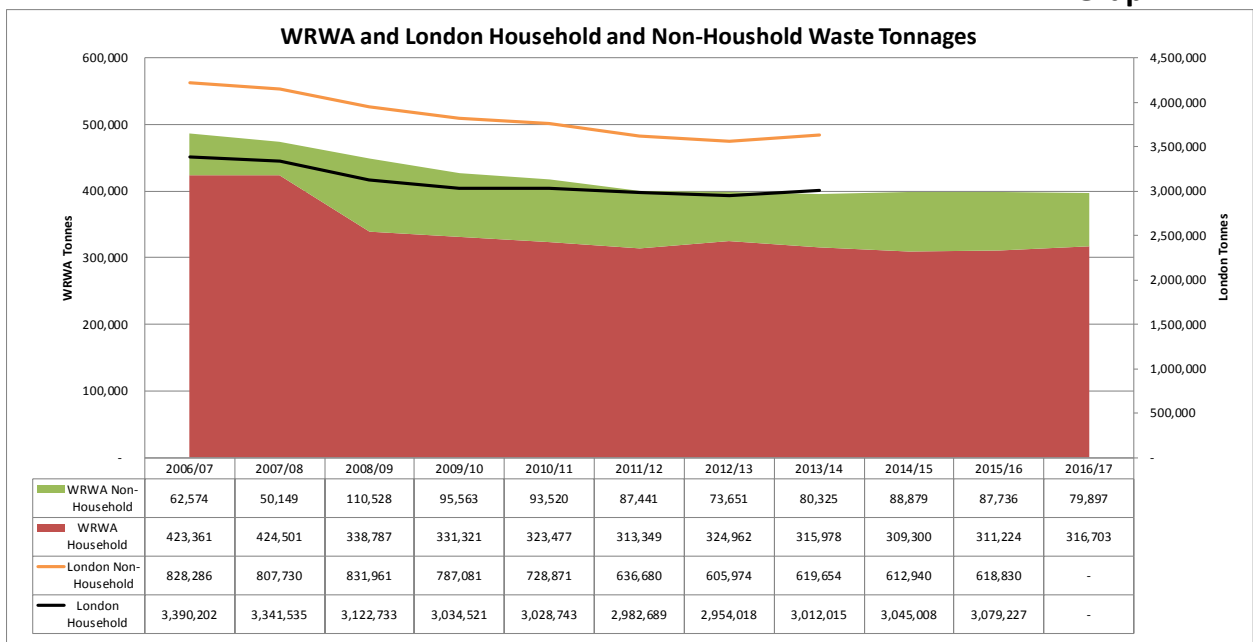
63. Graph 11 overleaf shows that Non-Household waste only makes up around 17% of the Local Authority Collected Municipal waste stream in London, with 83% being from Household sources, and the proportions are round 20% and 80% respectively in the Authority’s area.

64. Therefore, whilst recycling more Commercial waste would be environmentally beneficial, it is unlikely to significantly increase recycling performance against a weight based Municipal waste recycling target in London. Indeed, if London’s local authorities collected more commercial waste, with the current level of

recycling performance, that would lead to a reduction in Municipal recycling performance.

65. Local Authorities, including the Constituent Councils, mainly collect Commercial waste from small to medium sized businesses known colloquially as SME's. Larger businesses tend to deal with their waste as part of their overall logistics chain, or use private sector waste companies. The Commercial waste presented for collection by SME's is often in bags or smaller bins which is usually less attractive to private sector waste contractors. This is often because SME's can struggle with space for bins and this can also deter them from accepting additional recycling containers. Giving price incentives to SME's to recycle more also results in increased contamination of the recycling stream, particularly when economic times are hard.

Graph 11



Weight Based Recycling Targets

66. In paragraphs 60 and 61 above the household recycling performance rate was split into two groups: Dry Recycling, i.e. cans, bottles, paper etc., and 'Composting & Anaerobic Digestion' which is predominately made up of Garden Waste. It was clear that the Authority was doing relatively well in terms of Dry Recycling performance but, due to a relative lack of gardens in a dense urban

environment, the Authority had relatively little Garden Waste available to recycle.

67. Therefore, when looking at the overall recycling figure, this lack of Garden Waste in urban areas makes comparisons unfair. A weight based recycling target can also lead to perverse incentives whereby collecting and maximising recyclable waste can, in terms of recycling targets, be better than pursuing waste management policies higher up the waste hierarchy. The most obvious example of this is collecting Garden Waste that was previously composted at home by residents. Similarly, reducing the amount of material in the waste stream is obviously a good thing environmentally and economically but, if that material was easily recyclable, it is not good for achieving a waste based recycling target.
68. Table 1 below tries to simply explain how weight based recycling targets produce these distortions and their scale, which can be much larger than people appreciate.

Table 1

Scenario	Description	Total Tonnes	Recycled	Composted	Residual	Recycling Percentage	Percentage Change	Cost	Environmental Rank
			£25 per Tonne	£60 per Tonne	£150 per Tonne				
A	Baseline scenario	10	1	1	8	20%		£1,285	
B	Recycling Tonne diverted from residual	10	2	1	7	30%	10%	£1,160	-£125
C	Composting Tonne diverted from residual	10	1	2	7	30%	10%	£1,195	-£90
D	Recycling Tonne Increased	11	2	1	8	27%	7%	£1,310	£25
E	Composting Tonne Increased	11	1	2	8	27%	7%	£1,345	£60
F	Residual Tonne Minimised	9	1	1	7	22%	2%	£1,135	-£150
G	Recycling Tonne minimised	9		1	8	11%	-9%	£1,260	-£25
H	Composting Tonne Minimised	9	1		8	11%	-9%	£1,225	-£60

69. Table 1 uses a Baseline scenario A of a ten tonne waste stream. One tonne is recycled at £25/tonne, one tonne is composted at £60/tonne and eight tonnes of residual waste are sent for energy recovery at £150/tonne. The costs per tonne are broadly comparable with the Authority's costs and give a recycling rate of 20% and a cost of £1,285.
70. Scenario F, minimising the residual waste stream by one tonne is the best scenario environmentally and economically, saving £150, but it only has a modest impact, +2%, on the waste based recycling target.
71. The next best scenarios environmentally are G and H, i.e. to minimise the recycling or composting tonnage handled. Minimising the recycling tonnage, given its composition, is usually more environmentally beneficial. Both scenarios result in economic savings, but they have a very negative -9% impact on the

recycling rate – practically halving it. In paragraph 51 above it was explained how the Authority’s waste stream has changed over the last decade with, for example, glass bottles being up to 34% lighter, and the impact of this is analogous to scenario G. This highlights how local authorities have done well to increase the weight based recycling percentage of dry recyclables, given that the density of their target material has been decreasing at the same time. It also highlights that, whilst encouraging residents to home compost rather than use council Garden waste collection schemes is environmentally and economically preferable (all residents either pick up the costs through their Council Tax or those using the service pay for it directly), it can significantly damage performance against a weight based recycling target.

72. Scenarios B and C, which is to divert recycling or composting material out of the residual waste stream, are the next best outcomes environmentally, are very good economically and have the most positive impact on the recycling rate – +10%. Unfortunately they are also the hardest to achieve in practice.
73. Scenarios D and E, to increase the recycling or composting waste streams with new material (e.g. collecting Garden Waste that was previously being home composted), are the worst scenarios environmentally and economically, but they are both extremely good in terms of achieving weight based recycling targets.

Observation:

74. *The Authority’s Constituent Councils are doing better than London as a whole, in terms of the recycling of Dry Recyclable from Households. This performance is even better when the large proportion of high-rise properties (which are notoriously difficult for recycling) in the Authority’s area is taken into consideration.*
75. *The inclusion of Garden Waste in weight based recycling targets distorts comparisons between the performance against urban and rural authorities and even between central and outer London boroughs.*
76. *A significant factor in the recycling performance difference between the Authority and other areas is the collection of Garden Waste which is not in abundant supply in highly urbanised areas such as the Authority’s.*
77. *In terms of achieving weight based recycling targets, collecting Garden Waste is a positive factor if it captures material that would otherwise end up in the residual*

waste stream. However collecting Garden Waste can be less environmentally friendly than residents simply composting their Garden Waste at home and, if collecting it attracts material that was previously being home composted, then it would represent an additional expense. The waste composition analysis, later in this report, would seem to indicate that 7% of the residual waste stream is Garden Waste and consideration could therefore be given to increasing the amount composted at home and the amount recycled (there will always be some, even from properties with no garden, due to cut flowers and houseplants).

78. *The Authority's constituent councils are doing well compared to London and England in terms of reductions in the amount of household waste generated (26%) and this has been achieved against a backdrop of a 5% increase in population and 7% in dwellings.*
79. *Recycling more Commercial Waste is unlikely to significantly increase Municipal Recycling rates and, if more Commercial Waste is collected without an increase in recycling performance, that would actually lead to a reduction in Municipal recycling performance.*

WASTE COMPOSITION

Household Waste

80. The Authority's most recent compositional analysis survey was carried out in October 2014 by Resource Futures on the kerbside collected residual waste and dry recycling streams (and food waste in Lambeth). As far as was practically possible this mirrored a similar survey carried out in October 2009 by MEL.
81. The results of the residual waste surveys are shown in Table 2 below and the percentages have been applied to the Authority's residual Household waste arisings for each financial year. The proportion of a number of the component elements changed between the surveys, but the most noticeable differences (in tonnage terms) between the two surveys are:
 - a) the 63% increase in the weight of plastics, from around 21,000 tonnes to around 34,000 tonnes;

- b) the decrease in the weight of putrescibles (generally food and garden waste) by 12,500 tonnes (11%);
- c) the decrease in “miscellaneous non-combustables” (usually ceramics or DIY type material such as rubble, cement and gravel) by 11,500 tonnes (77%); and
- d) a reduction in Textiles by around 5,500 tonnes (43%)

Table 2

Household Residual Waste Composition				
	2009/10		2014/15	
Tonnes	242,678		231,660	
	Percentage	Tonnes	Percentage	Tonnes
Paper/Card	13.0%	31,548	14.0%	32,432
Plastic Film	3.8%	9,222	7.4%	17,143
Dense Plastic	4.7%	11,406	7.1%	16,448
Textiles	5.2%	12,619	3.1%	7,181
Misc Comb	10.3%	24,996	12.1%	28,031
Misc non Comb	6.1%	14,803	1.5%	3,475
Glass	3.6%	8,736	4.2%	9,730
Putrescibles	48.0%	116,485	44.9%	104,015
Ferrous Metal	1.5%	3,640	1.5%	3,475
Non Ferrous Metal	1.1%	2,669	1.0%	2,317
WEEE	0.4%	971	1.2%	2,780
Pot Hazard	0.7%	1,699	0.9%	2,085
Fines	1.6%	3,883	1.1%	2,548
Totals	100.0%	242,678	100.0%	231,660

82. Table 3 overleaf uses the residual waste tonnages in Table 2 and adds to them the tonnages of separately collected recyclable waste and the tonnages of waste collected at the Household waste and Recycling Centre. The total tonnage of each component type is then used to calculate its share in percentage terms. The table has an extra row at the end called ‘Other Materials’ which includes waste material such as detritus and timber which do not form part of the normal residual waste stream.

83. The percentage change in component tonnages generally mirrors that of the residual waste stream, but one exception is that the increase in plastics is only around 32% compared to the 63% increase in the Household residual waste alone.

Table 3

Household Waste Composition				
	2009/10		2014/15	
Component	Percentage	Tonnes	Percentage	Tonnes
Paper/Card	20.2%	68,773	24.4%	76,968
Plastic Film	3.3%	11,144	5.4%	17,143
Dense Plastic	5.4%	18,190	6.9%	21,720
Textiles	4.1%	14,035	2.3%	7,359
Misc Comb	7.4%	25,220	8.9%	28,031
Misc non Comb	4.3%	14,779	1.1%	3,475
Glass	10.2%	34,583	8.3%	26,293
Putrescibles	37.1%	126,221	34.4%	108,800
Ferrous Metal	1.7%	5,858	1.7%	5,231
Non Ferrous Metal	1.3%	4,406	0.9%	2,993
WEEE	0.9%	2,899	1.5%	4,619
Pot Hazard	0.5%	1,665	0.7%	2,085
Fines	1.1%	3,907	0.8%	2,548
Other Materials	2.4%	8,180	2.8%	8,741
Totals	100.0%	339,859	100.0%	316,005

84. The rest of this compositional analysis now concentrates on the 2014/15 results as being the most recent and therefore the most likely to be representative of the waste that the Authority is managing today. Table 4 below details how the Household Waste composition in Table 3 was arrived at and then, in the last column, calculates what percentage of each material type is being recycled.

Table 4

2014/15	Residual Waste		Co-Mingled Recycling		Other Recycling		Houshold Waste Stream		Recycled	Recycled
	Percentage	Tonnes	Percentage	Tonnes	Percentage	Tonnes	Tonnes	Percentage	Tonnes	Percentage
Paper/Card	14.0%	32,432	64.6%	43,665	N/A	871	76,968	24.4%	44,536	57.9%
Plastic Film	7.4%	17,143			N/A		17,143	5.4%	-	0.0%
Dense Plastic	7.1%	16,448	7.8%	5,272	N/A		21,720	6.9%	5,272	24.3%
Textiles	3.1%	7,181			N/A	178	7,359	2.3%	178	2.4%
Misc Comb	12.1%	28,031			N/A		28,031	8.9%	-	0.0%
Misc non Comb	1.5%	3,475			N/A		3,475	1.1%	-	0.0%
Glass	4.2%	9,730	24.5%	16,560	N/A	3	26,293	8.3%	16,563	63.0%
Putrescibles	44.9%	104,015			N/A	4,784	108,800	34.4%	4,784	4.4%
Ferrous Metal	1.5%	3,475	1.7%	1,149	N/A	607	5,231	1.7%	1,756	33.6%
Non Ferrous Metal	1.0%	2,317	1.0%	676	N/A		2,993	0.9%	676	22.6%
WEEE	1.2%	2,780	0.4%	270	N/A	1,569	4,619	1.5%	1,839	39.8%
Pot Hazard	0.9%	2,085			N/A		2,085	0.7%		
Fines	1.1%	2,548			N/A		2,548	0.8%		
Other Materials	N/A	N/A	N/A	N/A	N/A	8,741	8,741	2.8%	8,741	
Totals	100.00%	231,660	100.00%	67,593		16,752	316,005	100.0%	84,345	26.7%

85. Table 4 shows that 63% of all the Glass in the Authority's Household waste stream is already being recycled and nearly 58% of the Paper and Cardboard.
86. Table 5 overleaf takes the data in Table 4 and presents it in a slightly different way and also breaks down some of the components a little further from additional information that was in the 2014 compositional analysis.
87. The Green rows in Table 5 are the recycling fractions that the Constituent Councils actively target through the Co-Mingled Clear Sack recycling scheme. The yellow rows are other materials that the Authority recycles, primarily via the Household Waste and Recycling Centre.
88. Food Waste in Table 5 is in blue, this represents around 37% of the residual Household waste stream and 24% of the total Household waste stream. Nappies are in orange, these currently represent around 7% (15,000 tonnes) of the residual Household waste stream and, with residual waste treatment costing around £150 per tonne, the annual cost to the Authority of managing nappies is in the region of £2.25 million.

Table 5

2014/15	Household Waste						Total Household Waste		Recycled Household Waste	
	Residual Waste		Co-Mingled Recycling		Other Waste		Percentage	Tonnes	Percentage	Tonnes
	Percentage	Tonnes	Percentage	Tonnes	Percentage	Tonnes				
Paper/Card	14%	32,432	65%	43,665	5%	871	24%	76,968	53%	44,536
Recyclable Plastic	7%	16,448	8%	5,272			7%	21,720	6%	5,272
Glass	4%	9,730	25%	16,560	0%	3	8%	26,293	20%	16,563
Metals	3%	5,792	3%	1,825	4%	607	3%	8,224	3%	2,432
Garden Waste	7%	17,143			29%	4,784	7%	21,927	6%	4,784
Textiles	3%	7,181			1%	178	2%	7,359	0%	178
WEEE	1%	2,780	0%	270	9%	1,569	1%	4,619	2%	1,839
Food Waste	37%	84,788					27%	84,788		
Nappies	7%	15,058					5%	15,058		
Other Recyclables					52%	8,741	3%	8,741	10%	8,741
Non-Recyclable	17%	40,309					13%	40,309		
Totals	100%	231,660	100%	67,593	100%	16,752	100%	316,005	100%	84,345
										Recycling Rate
										27%
										Residual Waste
										231,660
										IBA Recycling Percentage
										30%
										IBA Recycling Tonnage
										69,498
										Enhanced Recycling Rate
										49%

89. Table 5 then shows that the Authority's overall Household waste recycling rate is around 27%. If we assume that 30% of the residual waste stream ends up as being recycled, either as Incinerator Bottom Ash Aggregate (IBAA), Air Pollution Control Residue aggregate or via extraction of metals, this would lead to an enhanced Household recycling rate of around 49%.
90. What level of recycling could the Authority ever realistically achieve? Getting 90% of the population, recycling 90% of the recyclable material, 90% of the time could be considered an ambitious target. However, even if it that were achieved, we would only recycle 73% of the material available ($90\% \times 90\% \times 90\% = 73\%$). That needs to be contrasted with the fact that the Authority is already capturing 63% of the Glass and 53% of the Paper and Cardboard.
91. In Table 6 overleaf a Scenario A has been created, whereby the Authority does achieve a 73% co-mingled recycling rate and it also doubles its capture of the other recyclables from the residual waste stream, whilst maintaining performance at the HWRC. However, this Scenario A only achieves a Household waste recycling rate of 39%, increasing to 59% if we allow for IBAA recycling.

92. Table 6 below then shows that if we added in 40% food waste recycling to Scenario A the Household waste recycling rate increases to 50% (65% if IBAA recycling is included). However, a recent study by WRAP highlighted that in 2015 the average capture rate for food waste recycling in the UK as a whole was only 13%, although areas with a wide coverage of separate food waste collections did achieve around 35% on average.
93. Collected food waste recycling schemes are undoubtedly environmentally beneficial when compared to landfill, but not necessarily better than efficient Energy from Waste (EfW) Facilities such as that at Belvedere used by the Authority.
94. The Authority last carried out a comparison using the Environment Agency's 'WRATE' Life Cycle Analysis in June 2009 Paper No. WRWA 634 and sending food waste to an Anaerobic Digestion Facility and sending it to the Belvedere EfW Facility, by river, as part of the residual waste stream were jointly the two best options. In the future, if the Belvedere EfW Facility managed to secure a use for its waste heat, then leaving food waste in the residual waste stream might clearly become the better environmental option.

Table 6

2014/15	Household Tonnes	CURRENT CO-MINGLED CAPTURE	CURRENT OTHER CAPTURE RATE	SCENARIO A TARGET CAPTURE RATE	SCENARIO A TARGET RECYCLING TONNES	SCENARIO A TARGET PLUS 40% FOOD WASTE	SCENARIO B TARGET CAPTURE RATE	SCENARIO B TARGET RECYCLING TONNES	SCENARIO B TARGET PLUS 13% FOOD WASTE
Paper/Card	76,968	57%		73%	56,346	56,346	64%	48,956	48,956
Recyclable Plastic	21,720	24%		73%	15,834	15,834	51%	11,121	11,121
Glass	26,293	63%		73%	19,168	19,168	73%	19,167	19,167
Metals	8,224	24%		73%	6,160	6,160	51%	4,211	4,211
Garden Waste	21,927		22%	44%	12,265	12,265	33%	7,236	7,236
Textiles	7,359		2%	5%	525	525	3%	221	221
WEEE	4,619		40%	80%	3,997	3,997	60%	2,771	2,771
Food Waste	84,788					33,915			11,022
Nappies	15,058								
Other Recyclables	8,741				8,741	8,741		8,741	8,741
Non-Recyclable	40,309								
	-								
	-								
Totals	316,005				123,035	156,950		102,423	113,446
					Recycling Rate	Recycling Rate		Recycling Rate	Recycling Rate
					39%	50%		32%	36%
					Residual Waste	192,970	159,055	213,581	202,559
					IBA Recycling Percentage	30%	30%	30%	30%
					IBA Recycling Tonnage	57,891	47,716	64,074	60,768
					Enhanced Recycling Rate	57%	65%	53%	55%

95. To date, the Constituent Councils have generally found that separately collecting food waste is a more expensive option than sending it to the Belvedere EfW Facility. Lambeth does collect some food waste mixed with its charged for Garden Waste collection service. This combined garden/food waste is then treated in an 'In Vessel Composter' which may not be the most environmentally friendly option.
96. Table 6 on this page then considers a Scenario B with some still challenging, but perhaps more realistic, commodity specific recycling targets for the Authority. However, even with a 13% food waste contribution, the Authority would only be able to achieve a Household recycling rate of 36% enhanced to 55% if the recycling of IBAA is included.

Observation:

97. *This analysis would indicate that it will be hard for the Authority to achieve a Household waste recycling rate greater than 39% (increasing to 50% if forty percent of food waste could be recycled and only increasing to 65% if IBAA recycling was included). Even a Household recycling rate of 32% would be extremely challenging (increasing to 36% if thirteen percent of food waste could be recycled and 55% if IBAA could be included).*
98. *As explained previously, at paragraphs 62 to 65 above, the Authority's Municipal recycling rate is currently around 21% and it is likely to remain below the Authority's Household recycling rate. Therefore, on the current method of calculation (without widespread food waste collection and recognition of IBAA recycling), it could be extremely difficult for the Authority to achieve a Municipal recycling rate far in excess of 30%.*
99. *If inner London boroughs, such as those served by the Authority, are only able to achieve a Municipal Recycling rate of just over 30% then outer London boroughs will have to significantly exceed the Mayor's overall target for London to make up for the shortfall and achieving the EU targets will be even more challenging.*

CONCLUSION

100. Over the last decade the Authority has been successful in achieving the aims of the waste hierarchy by:

- a) reducing the total weight of waste it handles by 18% against a background of increasing in population and households;
 - b) increasing the Dry Recyclables it recycles from Households from 14% to 21%, whilst the density of that material has reduced significantly;
 - c) reducing from 80.0% to 0.9% the amount of Municipal waste it landfills and using its residual waste to recover energy with the residues from that process also being recycled.
101. However, this report would seem to indicate that, under the current method of calculation, it will be difficult to achieve a weight based recycling target (Household or Commercial) far in excess of 30% in the Authority's area.
102. This leads to questions of what would be a sensible recycling target for the Authority's area? Should it be weight based or should it be based on some other form of metric, e.g. Carbon? Would it be more appropriate to have a number of targets to distinguish between low rise and high rise properties or Household and Commercial waste?
103. Would it be beneficial to have separate targets for different material types? For example, the Authority is currently only capturing around 24% of the plastic in the residual Household waste stream. Is the Co-mingled recycling scheme the only way to capture that material or are there complementary alternatives that could be explored, e.g. deposit schemes or reverse vending on plastic bottles? Reducing the plastics in the residual waste stream would also be particularly beneficial in terms of Carbon emissions. Plastics originate from oil and are known as sources of non-biogenic (fossil) carbon and, in Energy from Waste (EfW) Facilities, these contribute significantly to the calculation of CO₂ process emissions. Carbon from biological sources (e.g. food) are classified as biogenic carbon and the Intergovernmental Panel on Climate Change has agreed that the release of Carbon from biogenic sources can be discounted from these calculations as the Carbon has only recently been absorbed.
104. Reducing the residual waste stream is the most beneficial outcome both environmentally and economically, but often it only delivers a small benefit to weight based recycling targets. Should the Authority set waste reduction targets and place more emphasis on waste reduction initiatives as well as recycling? Areas to target for waste minimisation highlighted by this study could be food, garden waste, textiles and nappies.

NEXT STEPS

105. It is clear that this report has highlighted a number of areas for deeper investigation and the data used to produce this report needs to be checked and verified by an independent third party. An independent view on what weight based recycling targets might be achievable across the Authority's area, what sub-targets might be appropriate and what alternatives to the weight based recycling targets could also prove to be beneficial.
106. It is clear that, whilst the existing recycling messages need to be enhanced (to increase the current recycling rates), consideration also needs to be given to the promotion of additional recycling and waste reduction initiatives.
107. Differences in performance between the constituent councils, on different waste types, also need to be studied more closely so as to be able to better understand those differences and to identify examples of best practice that can be shared.
108. Whatever future targets and priorities the Authority sets itself, communication with the public will be key to achieving them. Further work on how the Authority might better address points around population diversity, housing type, transient population, education and so forth (i.e. what works what doesn't) is also likely to be beneficial.
109. The Authority is therefore recommended to agree that a tender brief be developed, in consultation with officers from the Constituent Councils, for approval at the September 2017 meeting of the Authority, with an aim to then appoint a consultant at the November 2017 meeting of the Authority. The estimated cost of this work is £50,000.
110. Not all the work this report suggests might be beneficial needs to wait for the input of a consultant. For example, the potential benefits of promoting home composting and real nappies can be assessed by officers and a report produced for the next meeting of the Authority. Similarly, it may be beneficial to increase the work done earlier this year on waste audits in schools (details provided in Paper No. WRWA 827 elsewhere in this agenda) with a particular emphasis on food waste reduction and consideration given to expanding this work further on a trial basis to include Council offices. If employees can better understand the benefits of food waste reduction (environmentally and economically) and can be

assisted in reviewing food portion sizes, purchasing habits and storage methods at work, then good practice learnt might be taken back into domestic life.

111. The Authority is also asked to consider whether or not Members would like officers to organise a Members' Forum at Smugglers Way for them to discuss the matters raised in this report more fully prior to the Authority's next meeting in September.

COMMENT BY THE TREASURER

112. Any initiative that reduces the Household waste or transfers material from the residual waste stream is likely to result in a net saving for the Constituent Councils. A Recycling Initiatives Reserve of £250,000 was set up by the Authority in June 2016 (Paper No. WRWA 804). The estimated cost of the consultants report is £50,000 and the cost of employing consultants in this area will be a call on this reserve

RECOMMENDATIONS

113. The Authority is recommended to:-
- a) agree that a tender brief be developed, in consultation with officers from the Constituent Councils, for approval at the September 2017 meeting of the Authority, with an aim to then appoint a consultant at the November 2017 meeting of the Authority with a view to them advising on:
 - i. the accuracy of the data used to prepare this report and the reasonableness of the conclusions drawn from it;
 - ii. any differences in performance between the constituent councils on different waste types;
 - iii. the suitability of having a range of performance targets, as opposed to the current 'one size fits all' weight based recycling target;
 - iv. the enhancement of the current recycling programme with a new focus on a number of waste minimisation initiatives; and

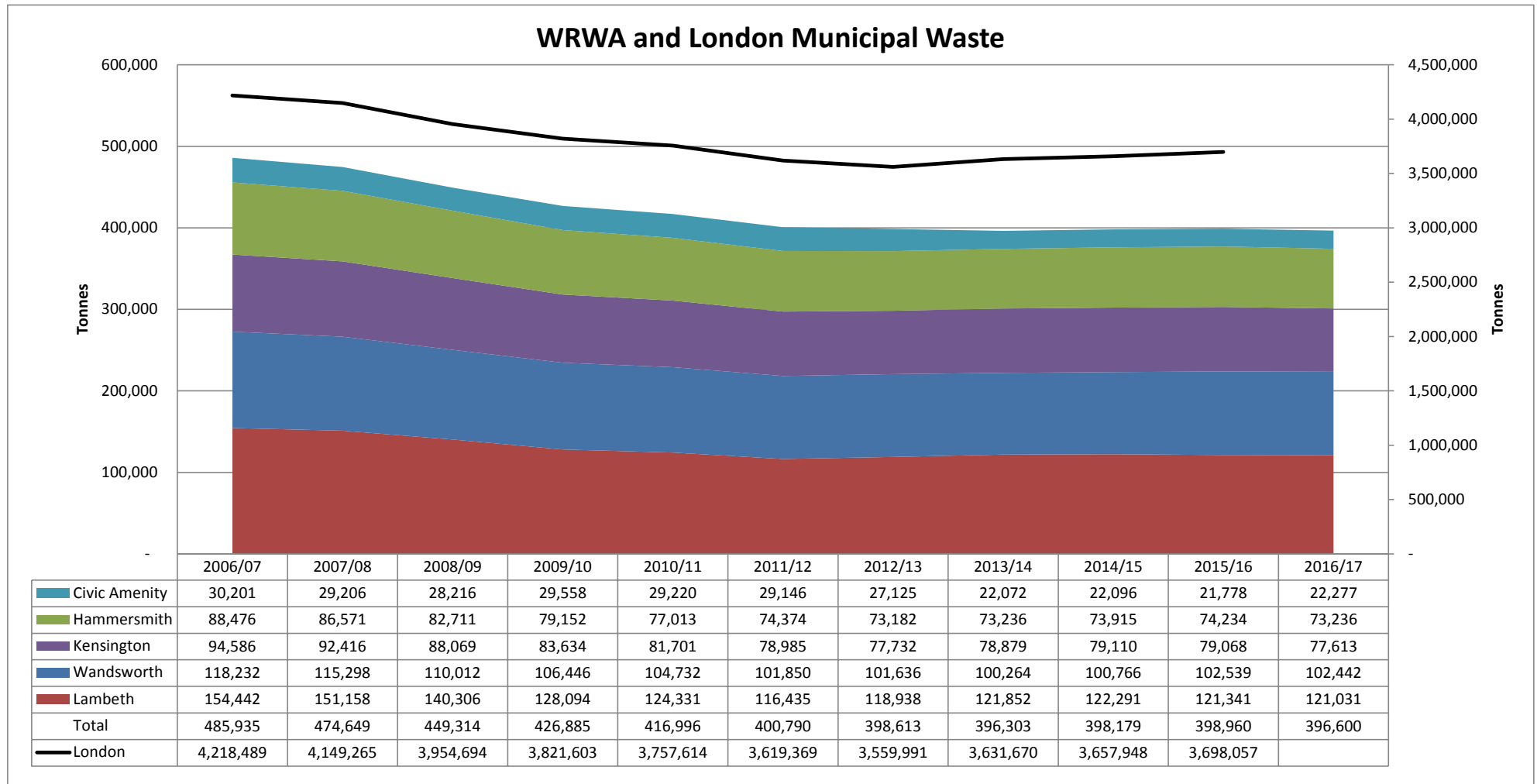
- v. how best the Authority might communicate agreed policies and measures to the public;
- b) consider whether or not Members would like officers to organise a Members' Forum at Smugglers Way for them to discuss the matters raised in this report more fully prior to the Authority's next meeting in September; and
- c) otherwise receive this report as information.

M. Broxup
GENERAL MANAGER

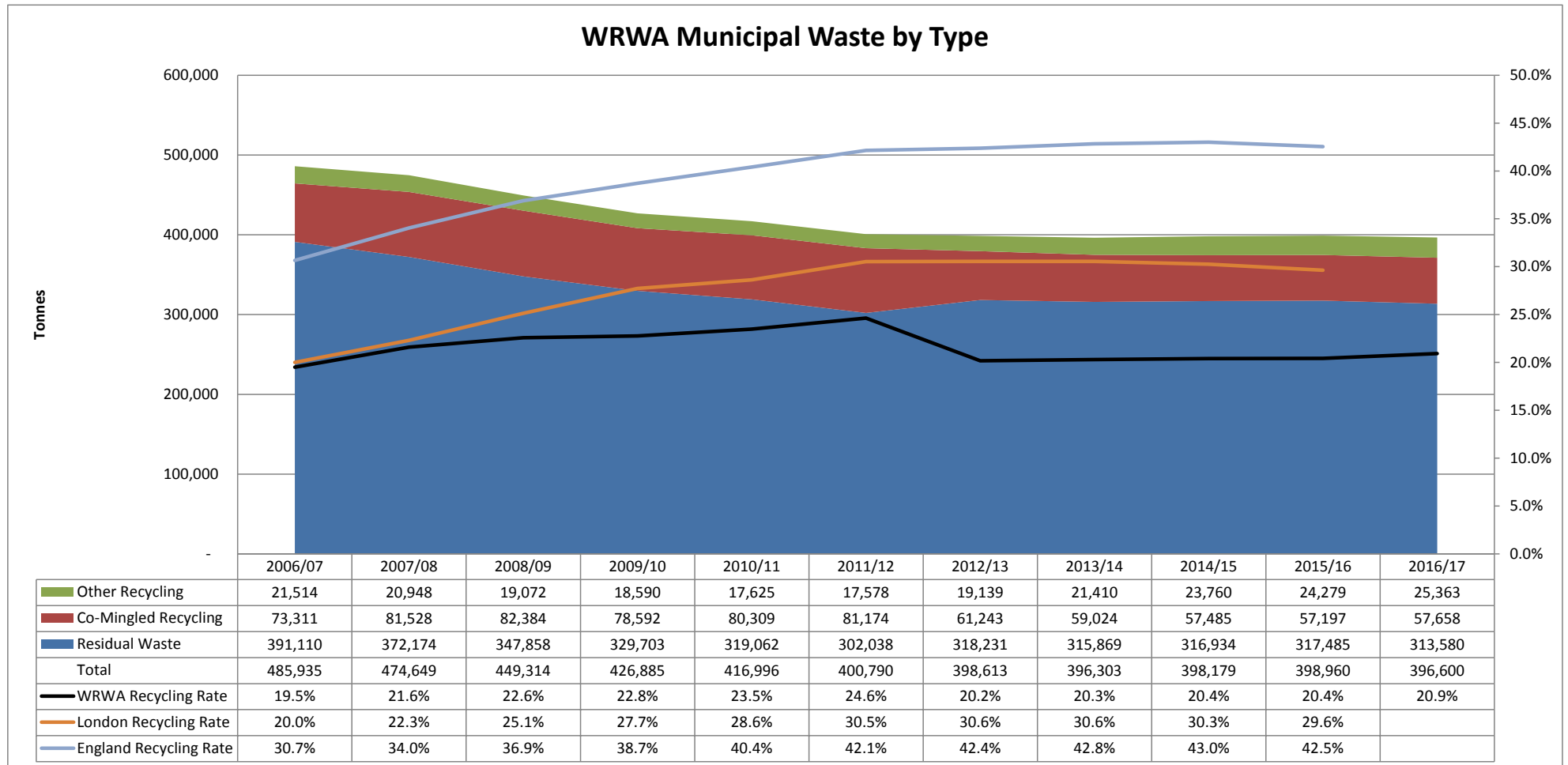
Western Riverside Transfer Station
Smugglers Way
Wandsworth
SW18 1JS.

20th June 2017

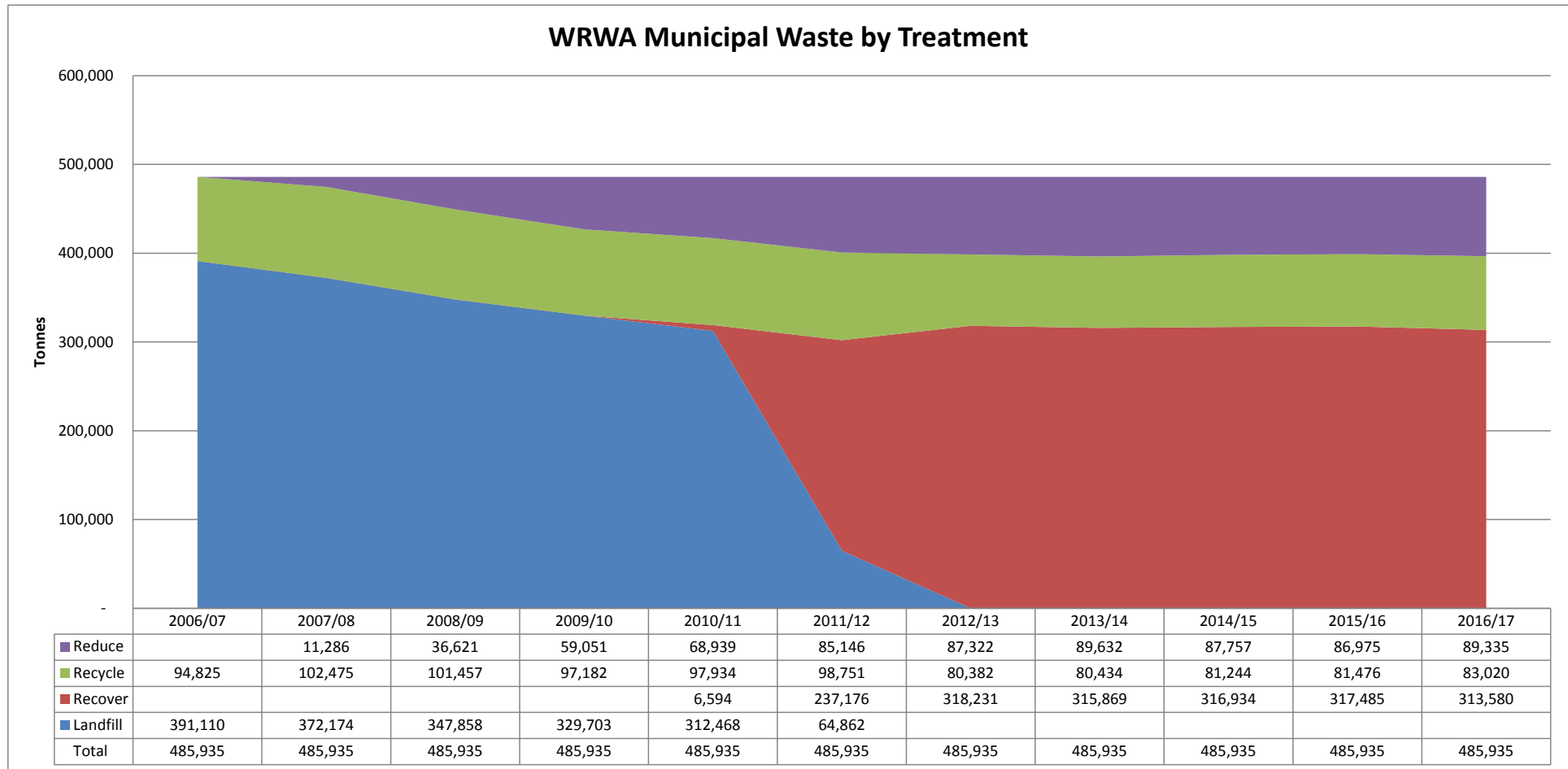
Graph 1



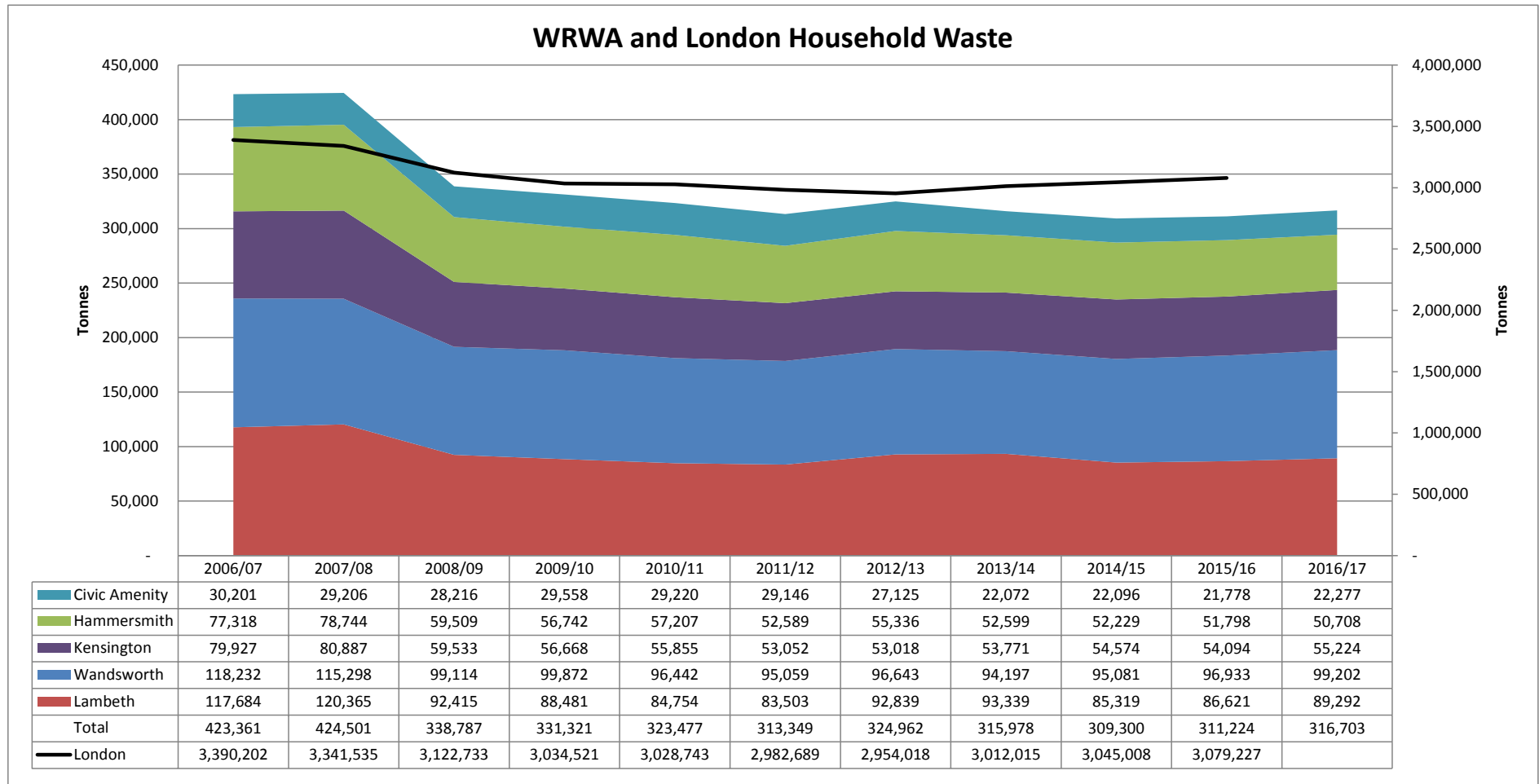
Graph 2



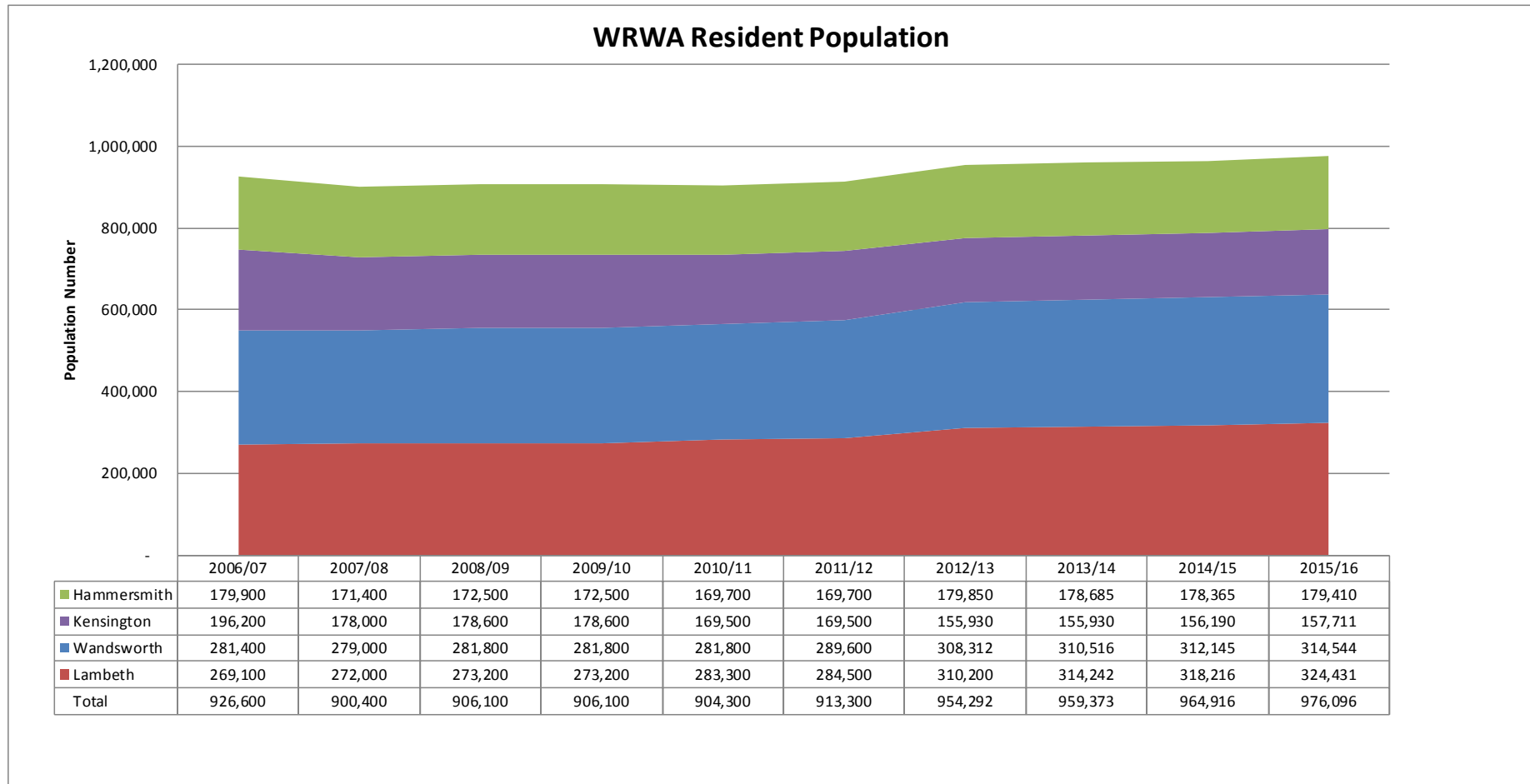
Graph 3



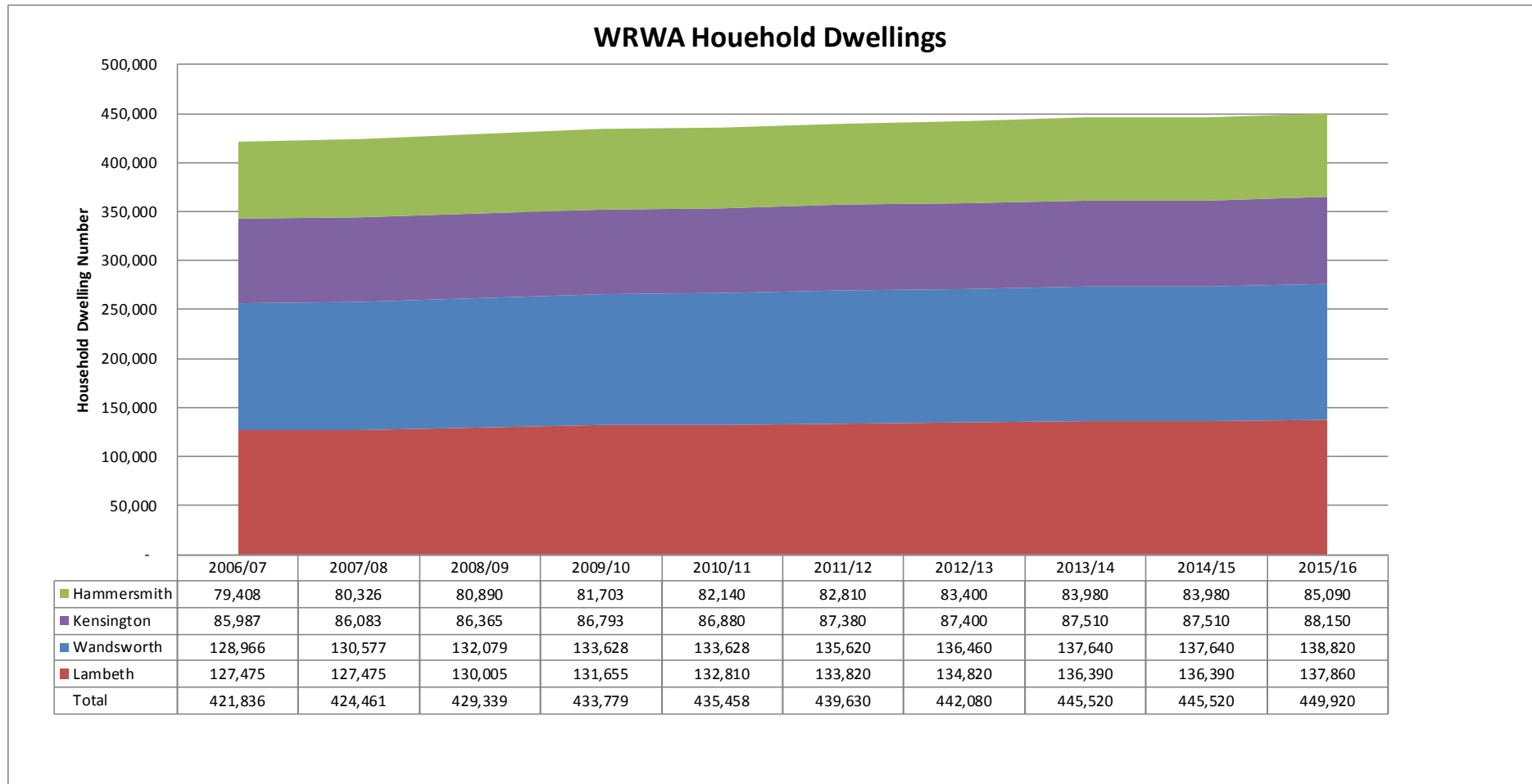
Graph 4



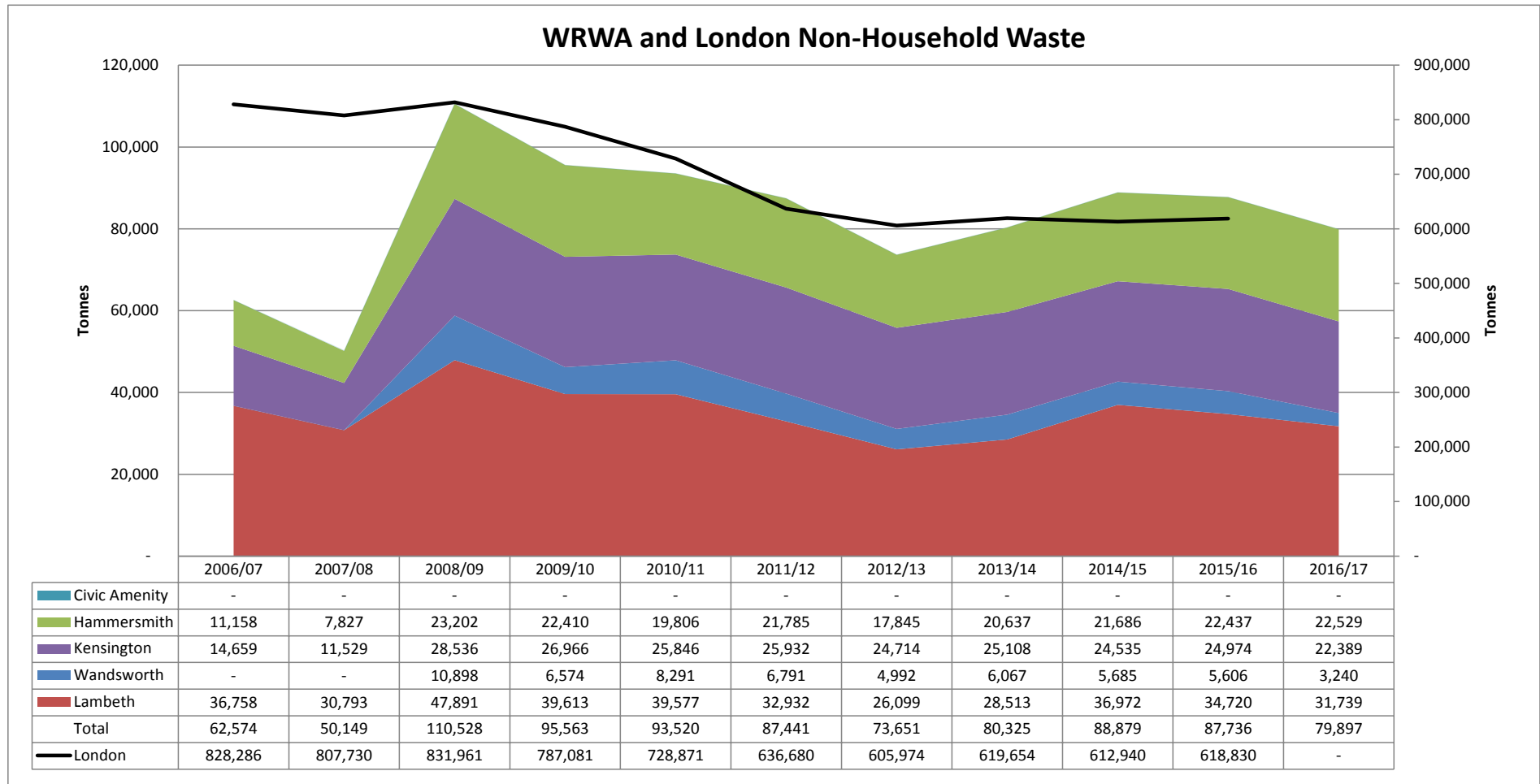
Graph 5



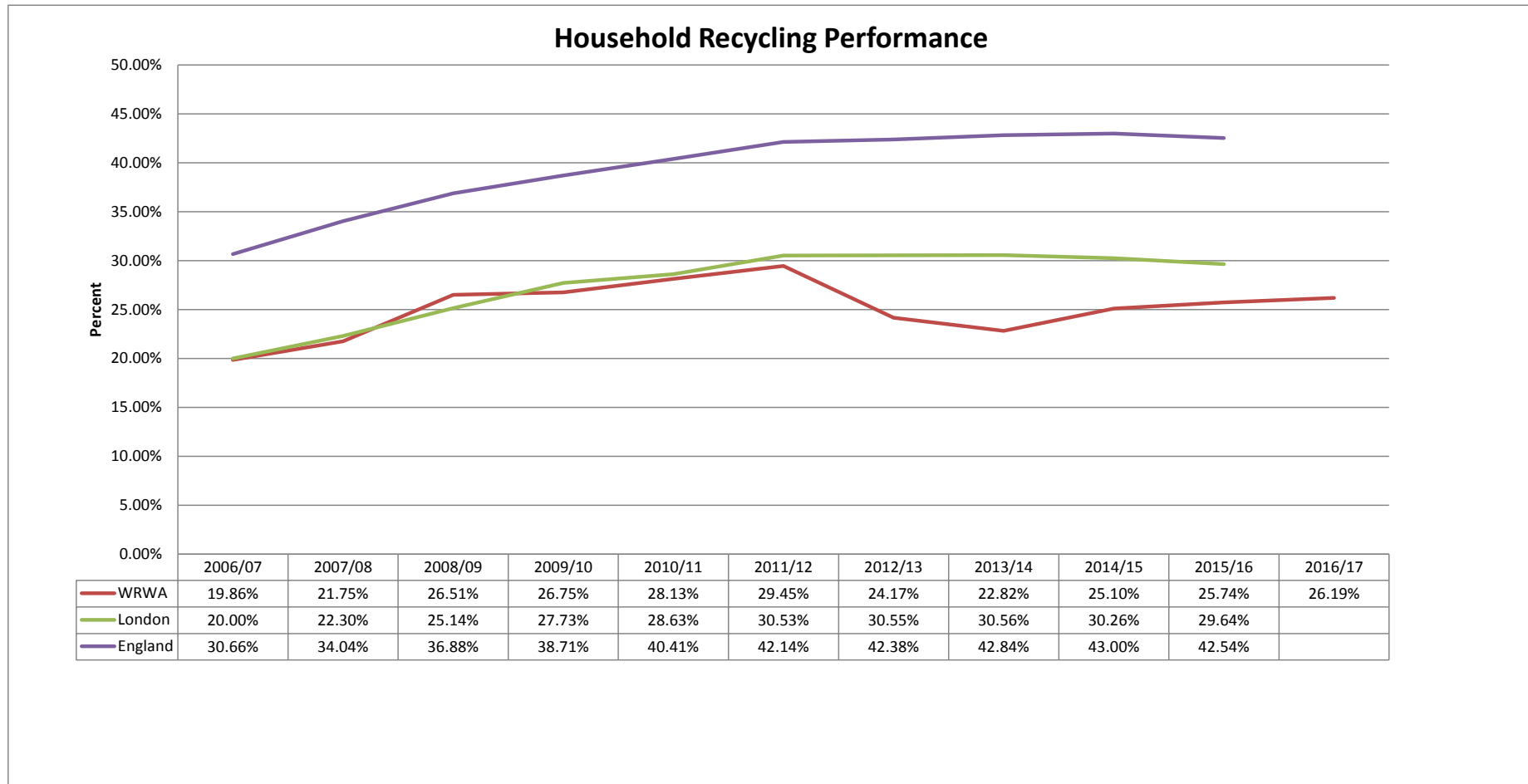
Graph 6



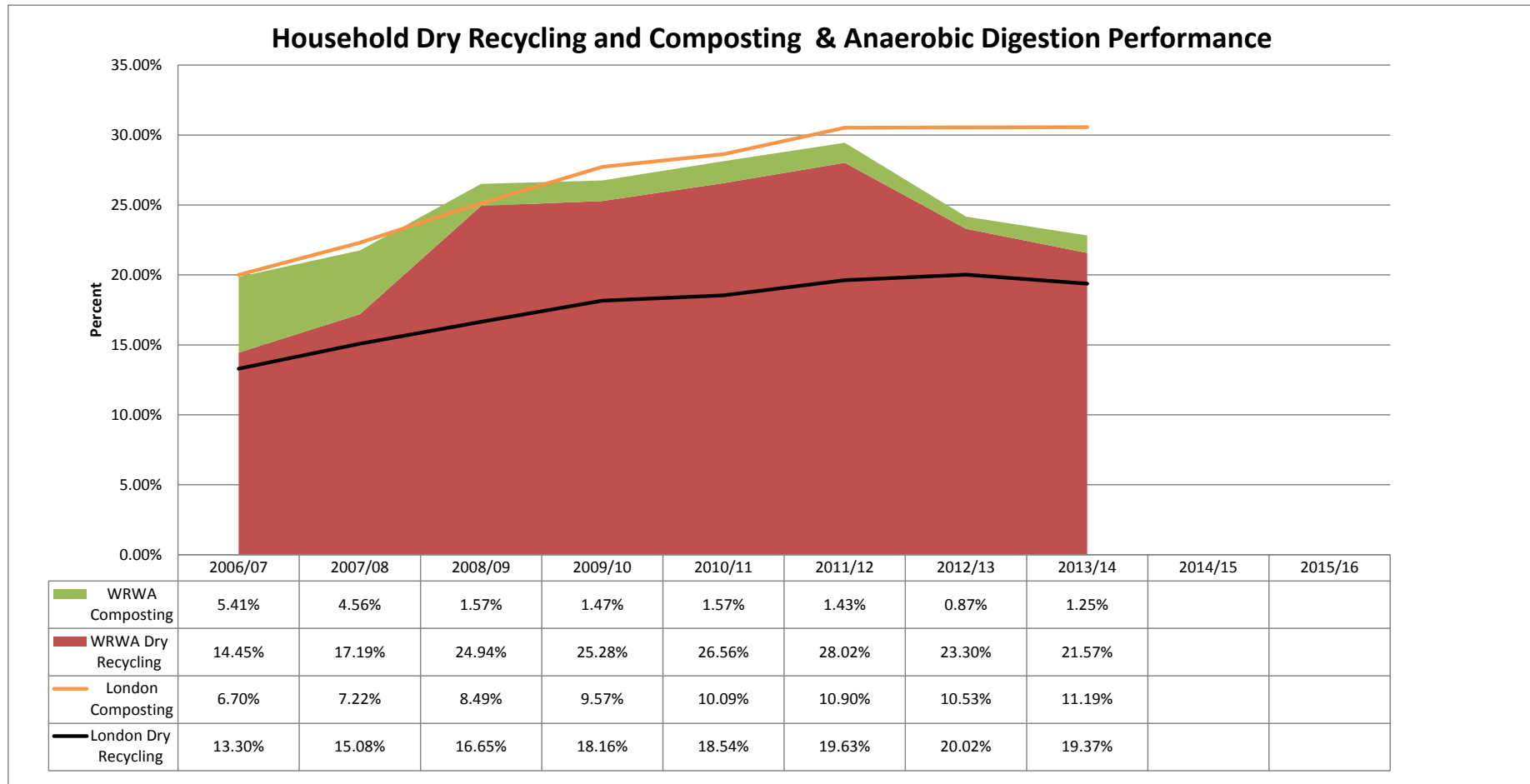
Graph 7



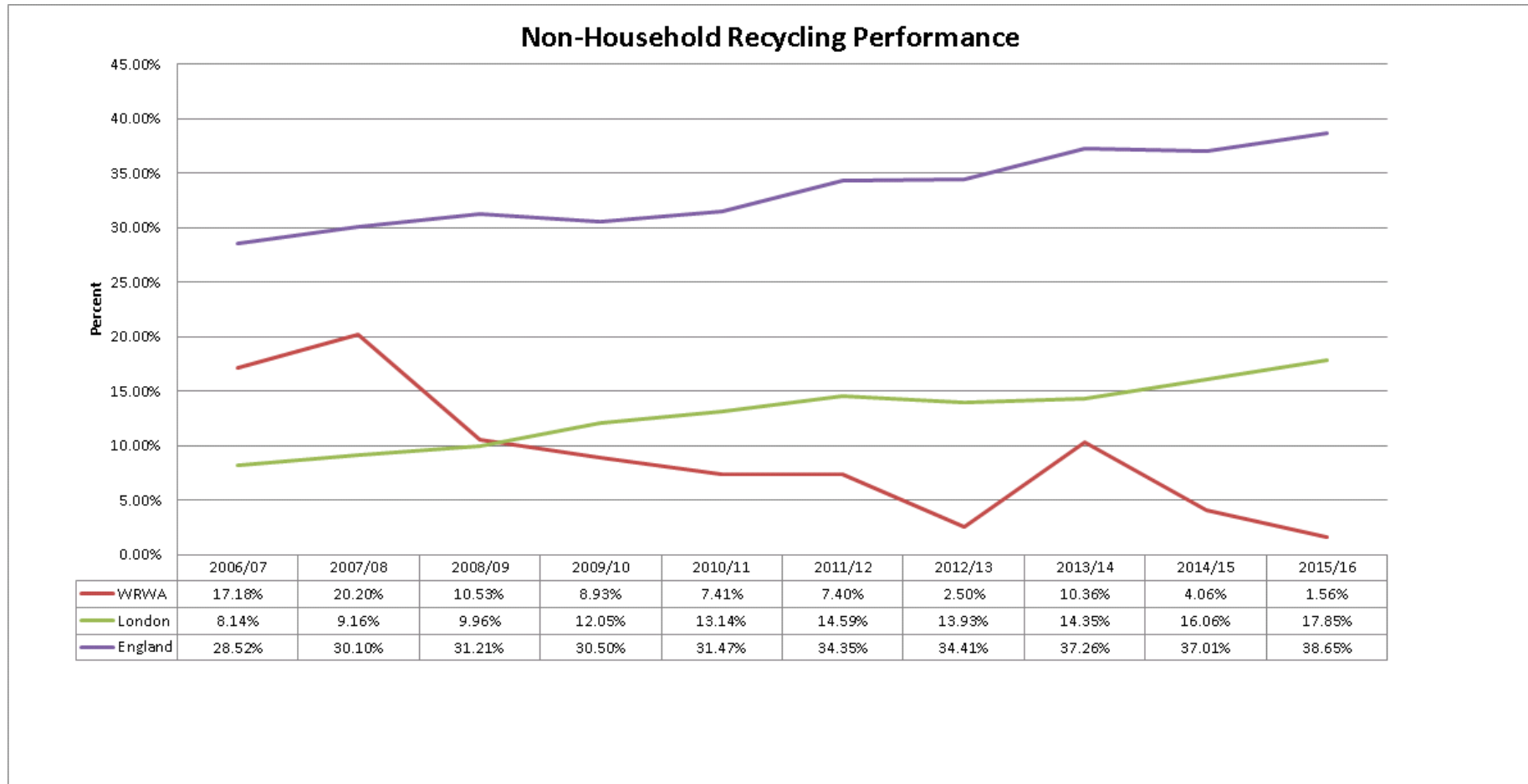
Graph 8



Graph 9



Graph 10



Graph 11

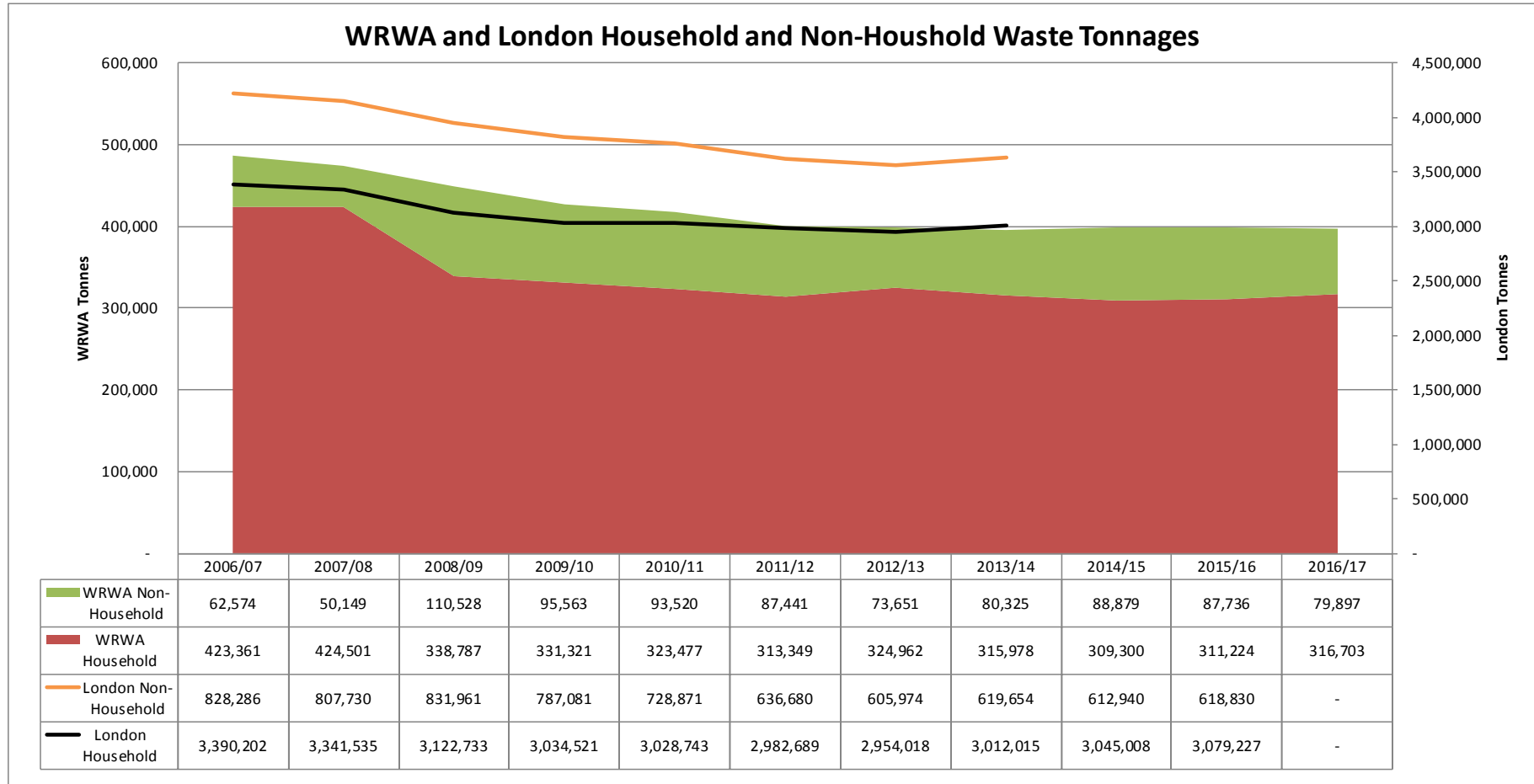


Table 1

					Residual					
			Recycled	Composted	Recovered					
			£25	£60	£150					
		Total	per Tonne	per Tonne	per Tonne	Recycling	Percentage		Cost	Environmental
Scenario	Description	Tonnes	Tonnes	Tonnes	Tonnes	Percentage	Change	Cost	Change	Rank
A	Baseline scenario	10	1	1	8	20%		£1,285		
B	Recycling Tonne diverted from residual	10	2	1	7	30%	10%	£1,160	-£125	4
C	Composting Tonne diverted from residual	10	1	2	7	30%	10%	£1,195	-£90	5
D	Recycling Tonne Increased	11	2	1	8	27%	7%	£1,310	£25	7
E	Composting Tonne Increased	11	1	2	8	27%	7%	£1,345	£60	6
F	Residual Tonne Minimised	9	1	1	7	22%	2%	£1,135	-£150	1
G	Recycling Tonne minimised	9		1	8	11%	-9%	£1,260	-£25	2
H	Composting Tonne Minimised	9	1		8	11%	-9%	£1,225	-£60	3

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Other Materials	2.4%	8,180	2.8%	8,741
Totals	100.0%	339,859	100.0%	316,005

Table 4

2014/15	Residual Waste		Co-Mingled Recycling		Other Recycling		Household Waste Stream		Recycled	Recycled
	Percentage	Tonnes	Percentage	Tonnes	Percentage	Tonnes	Tonnes	Percentage	Tonnes	Percentage
Paper/Card	14.0%	32,432	64.6%	43,665	N/A	871	76,968	24.4%	44,536	57.9%
Plastic Film	7.4%	17,143			N/A		17,143	5.4%	-	0.0%
Dense Plastic	7.1%	16,448	7.8%	5,272	N/A		21,720	6.9%	5,272	24.3%
Textiles	3.1%	7,181			N/A	178	7,359	2.3%	178	2.4%
Misc Comb	12.1%	28,031			N/A		28,031	8.9%	-	0.0%
Misc non Comb	1.5%	3,475			N/A		3,475	1.1%	-	0.0%
Glass	4.2%	9,730	24.5%	16,560	N/A	3	26,293	8.3%	16,563	63.0%
Putrescibles	44.9%	104,015			N/A	4,784	108,800	34.4%	4,784	4.4%
Ferrous Metal	1.5%	3,475	1.7%	1,149	N/A	607	5,231	1.7%	1,756	33.6%
Non Ferrous Metal	1.0%	2,317	1.0%	676	N/A		2,993	0.9%	676	22.6%
WEEE	1.2%	2,780	0.4%	270	N/A	1,569	4,619	1.5%	1,839	39.8%
Pot Hazard	0.9%	2,085			N/A		2,085	0.7%		
Fines	1.1%	2,548			N/A		2,548	0.8%		
Other Materials	N/A	N/A	N/A	N/A	N/A	8,741	8,741	2.8%	8,741	
Totals	100.00%	231,660	100.00%	67,593		16,752	316,005	100.0%	84,345	26.7%

Table 5

2014/15	Household Waste						Total Household Waste	Recycled Household Waste		
	Residual Waste		Co-Mingled Recycling		Other Waste					
	Percentage	Tonnes	Percentage	Tonnes	Percentage	Tonnes				
Paper/Card	14%	32,432	65%	43,665	5%	871	24%	76,968	53%	44,536
Recyclable Plastic	7%	16,448	8%	5,272			7%	21,720	6%	5,272
Glass	4%	9,730	25%	16,560	0%	3	8%	26,293	20%	16,563
Metals	3%	5,792	3%	1,825	4%	607	3%	8,224	3%	2,432
Garden Waste	7%	17,143			29%	4,784	7%	21,927	6%	4,784
Textiles	3%	7,181			1%	178	2%	7,359	0%	178
WEEE	1%	2,780	0%	270	9%	1,569	1%	4,619	2%	1,839
Food Waste	37%	84,788					27%	84,788		
Nappies	7%	15,058					5%	15,058		
Other Recyclables					52%	8,741	3%	8,741	10%	8,741
Non-Recyclable	17%	40,309					13%	40,309		
Totals	100%	231,660	100%	67,593	100%	16,752	100%	316,005	100%	84,345
										Recycling Rate
										27%
										Residual Waste
										231,660
										IBA Recycling Percentage
										30%
										IBA Recycling Tonnage
										69,498
										Enhanced Recycling Rate
										49%

Table 6

2014/15	Household Tonnes	CURRENT CO-MINGLED CAPTURE	CURRENT OTHER CAPTURE RATE	SCENARIO A TARGET CAPTURE RATE	SCENARIO A TARGET RECYCLING TONNES	SCENARIO A TARGET PLUS 40% FOOD WASTE	SCENARIO B TARGET CAPTURE RATE	SCENARIO B TARGET RECYCLING TONNES	SCENARIO B TARGET PLUS 13% FOOD WASTE
Paper/Card	76,968	57%		73%	56,346	56,346	64%	48,956	48,956
Recyclable Plastic	21,720	24%		73%	15,834	15,834	51%	11,121	11,121
Glass	26,293	63%		73%	19,168	19,168	73%	19,167	19,167
Metals	8,224	24%		73%	6,160	6,160	51%	4,211	4,211
Garden Waste	21,927		22%	44%	12,265	12,265	33%	7,236	7,236
Textiles	7,359		2%	5%	525	525	3%	221	221
WEEE	4,619		40%	80%	3,997	3,997	60%	2,771	2,771
Food Waste	84,788					33,915			11,022
Nappies	15,058								
Other Recyclables	8,741				8,741	8,741		8,741	8,741
Non-Recyclable	40,309								
	-								
	-								
Totals	316,005				123,035	156,950		102,423	113,446
					Recycling Rate	Recycling Rate		Recycling Rate	Recycling Rate
					39%	50%		32%	36%
				Residual Waste	192,970	159,055		213,581	202,559
				IBA Recycling Percentage	30%	30%		30%	30%
				IBA Recycling Tonnage	57,891	47,716		64,074	60,768
				Enhanced Recycling Rate	57%	65%		53%	55%