



**London Plan Waste
Forecasts and Apportionments**

Task 4 – Updating the apportionment method
Appendix 1

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GLOSSARY

Capacity - the amount of waste (in tonnes) that each borough can process using existing facilities.

Criteria - Each criterion is a separate factor or set of factors that affects the amount of waste each borough can be apportioned.

Representative Value (RV) - A value from 0 to 100 that signifies how well each borough performs against a particular criterion on a scale defined by the borough that performed best and the borough that performed the least well.

Suitability Index (SI) / Apportionment Percentages (AP) - A percentage value that represents how much waste would be assigned to each borough for each criterion, i.e. if each criterion were the only one being considered.

Waste apportionment - The percentage of the total waste arisings across Greater London each borough would be assigned to manage.

Waste arisings - The amount of waste that each borough currently generates per annum.

Weighting - A percentage value that represent how much each criterion is worth of the final apportionment.

1.0 INTRODUCTION

SLR and LUC have been commissioned to update and verify the GLA's waste arising forecasts and review and revise the apportionment methodology used to calculate waste stream apportionments for each planning authority over the next London Plan period: 2016-2041. This paper summarises the current apportionment methodology (developed in 2006 and used for apportioning forecasted waste arisings in the adopted London Plan period: 2016-2036) before presenting a number of amendment options aimed at simplifying and strengthening the robustness of the apportionment methodology for the new London Plan.

This paper will inform discussions with the Boroughs at the London-wide Waste Planning Meeting on the 22nd of March. Following the workshop and the collection of feedback from the Boroughs, a final Methodological Paper will be prepared setting out an updated apportionment methodology and the new waste arising forecasts and apportionments to be included in the New London Plan.

The paper is organised under 10 chapter headings, one for each of the nine assessment criteria used in the 2006 apportionment methodology and starts with an overarching notes section that presents some general commentary on the number of criteria, data updates and the weighting and calculation process. A series of amendment options are presented for consideration and feedback at the London-wide Waste Planning Meeting on the 22nd of March. Waste apportionment represents the division of Greater London's total waste arisings, assigning each London Borough with an appropriate proportion of the total to manage. Previous versions of the London Plan have focused on apportioning Local Authority Collected Waste (LACW) (formally Municipal Solid Waste) and Commercial and Industrial Waste (C&IW).

This approach is in-keeping with the requirements of Planning Policy Statement 10 (PPS10)¹, which explicitly limits the requirement for apportionment to household waste and commercial and industrial waste, therefore excluding CDEW.

Notably the successor to PPS10, the National Planning Policy for Waste (NPPW)² is not explicit in this regard, though the emphasis of the document is on provisioning for household and commercial and industrial waste streams.

It is considered that the apportionment of Construction, Demolition and Excavation Waste (CDEW) would be problematic for a number of reasons:

- Uncertainties around the arising data for CDEW are substantial. Given this uncertainty, there is potential for significant error in identifying future capacity and landtake requirements.
- A significant proportion of CDEW generation is driven by major new developments. The arising of CDEW can therefore vary significantly over time, and is unevenly spatially distributed. As such it is difficult to predict optimal locations for new CDEW management capacity.
- Much of the CDEW arising (particularly excavation waste) may be managed close to the point of waste generation, without the need for permanent waste

¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/11443/1876202.pdf

²

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/364759/141015_National_Planning_Policy_for_Waste.pdf

infrastructure – it would therefore not be appropriate to allocate waste management capacity for this material.

Rather than apportioning CDEW, the existing London Plan puts forward policy for CDEW in respect of planning decisions, and the development of Local Development Frameworks. These policies include the development of new CDEW at existing sites, use of mineral extraction sites for CDEW recycling, and requirements for major developments to recycle CDEW on site. Given the above considerations, it is arguably appropriate to continue this approach.

In relation to hazardous waste, it should be emphasised that this waste stream is generated by households, commerce and industry, and construction / demolition activities. Since hazardous waste is implicitly included in projections for these waste streams, it would not be appropriate to develop separate apportionments for hazardous waste.

2.0 OVERARCHING NOTES

2.1 Terminology

The term **Suitability Index (SI)** was used to describe the final result for each criterion in the 2006 study. This value represents how much waste would be assigned to each borough if that criterion were the only one being considered and is expressed as a percentage. LUC recommend that it would be more helpful to refer to these values as **Apportionment Percentages (APs)** in the updated study. For consistency with the source information, SI is used when referring to values from the 2006 report, and AP is used when referring to values in the update report.

2.2 The criteria

The 2006 study defined nine criteria;

1. Capacity – Identification of Theoretical Surplus/Deficit in Each Borough
2. Proximity to Waste Arisings
3. Proximity to Sustainable Transport Modes
4. Proximity to the Road Network
5. Ability to Use Sustainable Transport Modes
6. Historic Patterns of Waste Movement
7. Other Land Uses / Environmental Factors
8. Flood Risk
9. Socio-Economic Factors

We set out below recommendations for the removal of Criteria 2, 5 and 6 in the 2017 study but, for the purposes of this document, all criteria have retained their 2006 numbers and names.

2.3 Weighting

It is important to note that, at this stage, **this document does not take into account weightings** and all figures shown within it are not weighted. Once the updated method has been finalised for consideration by the Boroughs, LUC recommend a different approach to applying agreed weighting for each criterion. The reasons for this are set out below.

The 2006 study weighted each criterion as 'High', 'Medium' or 'Low'. A criterion with a 'High' weighting made up 14.3% of the total SI value, one with a 'Medium' weighting made up 9.5%, and one with a 'Low', 4.8%. LUC propose removing the 'High', 'Medium', 'Low' trichotomy in favour of assigning each criterion a simple percentage (%) weighing instead. We believe this makes it clearer how much of the total each criterion is worth, making the method more transparent and simpler to understand.

In the 2006 study, four criteria were grouped into pairs; Criteria 1 and 6, and Criteria 3 and 5. For each pair, the cumulative weighting was applied to their combined SI to give their weighted SI - this meant that each was weighted twice, i.e. the combined Criteria 1 and 6 was classed as 'High', but was worth 28.6% of the total, rather than 14.3%. LUC propose applying only a single weighting to each criterion, again, to aid in understanding and clarity.

If the recommendations in section 2.2 were to be carried forward, this would leave 6 criteria. Each of these criteria would account for 16.7% of the total, if they were all weighted equally.

2.4 Calculating SI values

In order to calculate the SI for each criterion, the 2006 study generated a **Representative Value (RV)** for each borough. The RV signifies how well each borough performs against a particular criterion on a scale defined by the borough that performed best and the borough that performed the least well. In the 2006 study, this gave each borough an RV between 0 and 100 for each criterion, with 100 being the highest performing and 0 the lowest performing. It is important to note that the lowest scoring borough always scored 0, representing the baseline from which all remaining boroughs were scored.

The 2006 study then calculated the SI values for each borough from the RVs by adding the RVs together and calculating as a percentage (%) the proportion each borough's RV was of the total.

LUC recommend simplifying the 2006 study SI³ calculation method described above to improve the overall transparency of the apportionment methodology and allow the lowest scoring boroughs to score more than 0 where appropriate.

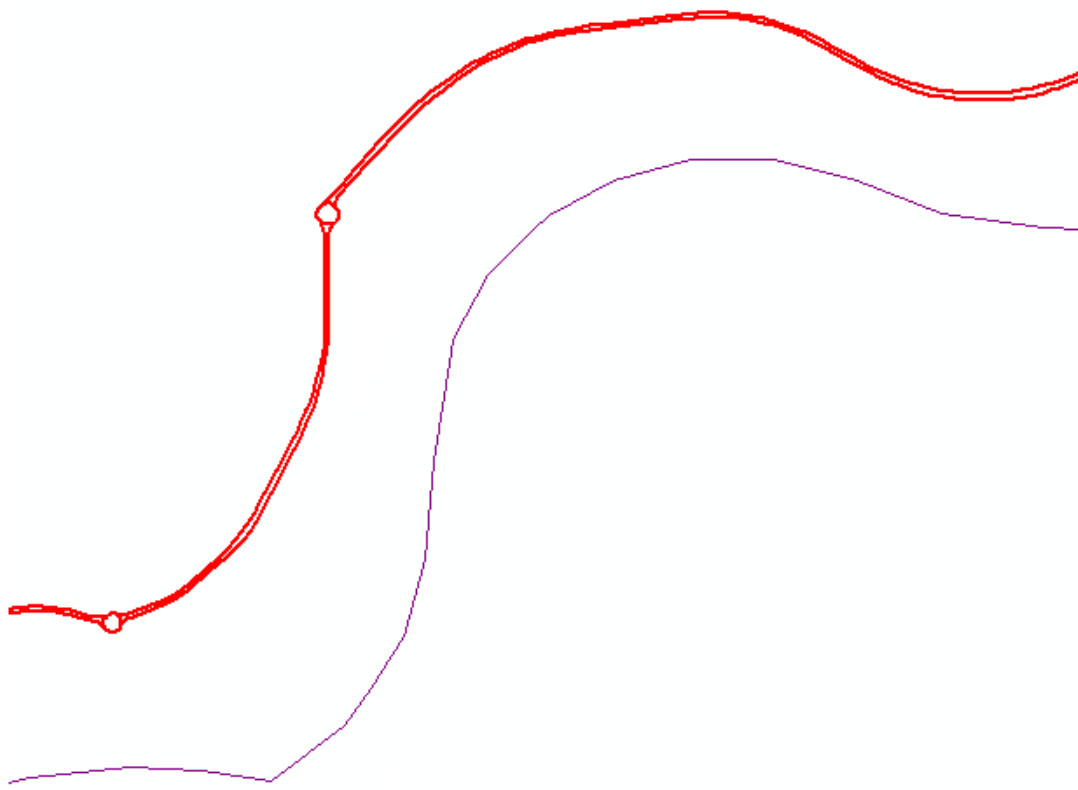
While the 2006 approach is appropriate for some criteria, we suggest that it is not always appropriate to give the lowest performing borough an SI/AP value of 0%. For example, it is appropriate to calculate a value of 0 against criterion 8 (Flood Risk) where a borough is completely washed over by Flood Zone 3. However, under criterion 4 (road network), even boroughs with the lowest road densities can process some waste; therefore, in this case an AP value of 0 would be inappropriate. Instead, we suggest applying a value of 0 only to an absence of the features being assessed, with all other values being a % of the total of the assessed criteria. For example, if the criterion were assessing the amount of unconstrained land, only those boroughs with 0ha of unconstrained land would receive an AP of 0%. If the lowest had 100 ha of unconstrained land, and the total area of unconstrained land within London was 10,000 ha, the lowest borough would receive an AP of 1%.

2.5 Changes to Data

Since 2006 there have been many updates to relevant national, regional and local datasets improving resolution and accuracy. Consequently, some of the updated data used in the new 2017 study will not exactly match the 2006 study. For example, measuring linear features, such as roads and railways, with a greater level of accuracy has the apparent effect of increasing their length. While there may be some significant changes in the datasets used, the same datasets will be used for every borough, making the final AP values in the 2017 study relatively comparable with those calculated in the 2006 study. Figure 1 illustrates this point by showing the same road (offset for clarity) from two different datasets. The top road, representing the updated data set, appears longer than the bottom road due to the increased detail, and the inclusion of roundabouts.

³ The term Suitability Index (SI) may be better named as Apportionment Percentage (AP) as reasoned above (see Terminology section).

Figure 1
The difference between two representations of the same road



It has not always been possible to identify the source data used in the 2006 study. Where this is the case, we have assumed the most readily available data sets were used. In the interests of transparency, the 2017 apportionment methodology will reference all datasets used.

2.6 Units

Table 2.1 outlines the units that have been used consistently in the 2017 study, how they differ from the 2006 and the reason for any changes. It is important to note that the units used in the 2017 calculations have no effect on the results.

Table 2.1

Quantum	Unit used in 2006	Unit used in 2017;	Justification for change
Area	Metres ² and Hectares	Hectares	Consistency between criteria
Length	Centimetres and Metres	Kilometres	Consistency between criteria, and for ease of understanding
Volume of waste	Tonnes	Tonnes	No change
Time ⁴	Seconds	Minutes	For ease of understanding

2.7 Other Criteria Considered

Consideration has been given to using the apportionment methodology to draw-out spatial variations in demand for specific types of waste management facility across London. Specifically, the potential for using the GLA's Heat Map as a proxy for 'opportunity' for new energy from waste facilities in each borough. It was considered that such an approach would introduce a bias to specific types of waste management facilities; a bias which may not be consistent with the London Plan's waste hierarchy. Therefore, LUC do not recommend the inclusion of such a criterion.

Consideration has also been given to how the apportionment methodology might factor-in the potential for/help to encourage the development of London's circular economy, reducing the City's waste and increasing reuse, repair and recycling rates. However, it was concluded that no meaningful measures could be encouraged directly through the apportionment of London's overall waste outputs and that no meaningful predictions could be made as to how the development of London's circular economy might influence waste outputs at the Borough level in the short to medium term, i.e. over the next London Plan period. Therefore, no criteria considering the circular economy are proposed.

⁴ This unit would not be used if Criterion 2 were removed (see Section 4 – Criterion 2)

3.0 CRITERION 1 - IDENTIFICATION OF THEORETICAL SURPLUS/DEFICIT IN EACH BOROUGH

3.1 Intended Purpose

This criterion is intended to allocate a greater apportionment to boroughs with greater potential surplus capacity for waste management.

3.2 2006 Study

In the 2006 study, Criterion 1 was made-up of a number of base components:

- **Current existing capacity** – the amount of waste (in tonnes) that each borough can process using existing facilities.
- **Transfer of Employment Land for Housing Use** – the amount of land that will be redeveloped to meet housing needs. This varied by borough, and came from the unpublished GLA report '*Survey of Industrial and Warehousing Land and Availability in London 2003*'.
- **Potential future capacity** - the total amount of industrial land⁵ potentially available for waste processing use in hectares, minus the Transfer of Employment Land for Housing Use (hectares) multiplied by 80,000 to give an estimated value for the tonnage of waste that could be processed.⁶
- **Current contracted waste** – the amount of waste (in tonnes) brought into and taken from each borough under existing contracts.
- **Current waste arisings**⁷ - The amount of waste that each borough currently generates per annum.

These base components were then used to calculate the following;

- **Total estimated capacity:** 75% of the 'current existing capacity' was added to 95%⁸ of the 'potential future capacity', measured in tonnes.
- **Surplus/deficit:** Total estimated capacity minus the combined 'current waste arisings' and 'current contracted waste', measured in tonnes.

The surplus/deficit value was then used to calculate the SI value.

3.3 2017 study: Proposed Amendment Options

LUC has identified two assessment options for consideration:

Option 1 – Retain arisings and capacity as one criterion

With this option, LUC would use the same method as the 2006 study, with the following amendments:

⁵ Using the categories specified in Table 3.1

⁶ The figure of 80,000 tonnes per hectare is consistent with the 2006 report, which was generated by evaluating the 'Planning for Waste Management Facilities' ODPM report, and data provided by the GLA.

⁷ For this component, the City of London was assigned a value of 100,000 tonnes to take into account that it would not be possible for it to deal with all its own arisings.

⁸ 5% was subtracted from the potential future capacity as 'frictionally vacant industrial land'.

- We recommend that the updated method not take into account the ‘Transfer of Employment Land for Housing Use’ since there are no comprehensive and consistent datasets that shows how industrial/employment land interacts with planned housing sites.
- We recommend that the updated method not take into account waste going into and out of each borough. It is unclear what dataset was used to calculate this in the original study. While some data is available via the Environment Agency’s Waste Data Interrogator tool, it is not considered accurate enough to incorporate into the model, i.e. its inclusion would decrease the accuracy of the outputs rather than increase them.
- The ‘current existing capacity’ would be updated with the data from the London waste map data.
- The ‘current waste arisings’ would be updated with the forecast waste arisings for 2016.

It should be noted that, at this stage, the figures have not been amended to take account of any information received in relation to the current unutilised capacity of existing waste management facilities.

Option 2 – Split arisings and capacity into two separate criteria

This option would include the same amendments outlined in option 1 with the additional amendment that waste arisings and capacity would be split into two separate criteria:

- Arising values would give higher percentage values to boroughs that have higher forecast waste arisings for 2016.
- Capacity values would give higher percentage values to boroughs that have more capacity.

This option would allow the boroughs to weight arisings differently to capacity if this was of interest.

Discussion Point 1.1: Are these criterion amendments acceptable.

Discussion Point 1.2: Should the 3 year average throughput be used instead of the 75% estimate of the licenced capacity.

Discussion Point 1.3: Should the 80,000 tonnes per hectare figure be used (as it was in the 2006 study) or is there another, more up-to-date figure that could be used?

Discussion Point 1.4: Which option (1 or 2) is preferred? Alternatively, please suggest another option.

Table 3.1
2017 data and sources

Dataset	Source	Justification for Inclusion
Forecast waste arisings (2016)	SLR (produced for this study)	Latest projections
Current existing capacity	GLA London Waste Map	Best available dataset for existing capacity
Potential future capacity	<p>GLA - Industrial Land Baseline (2015): Categories of data used:</p> <ul style="list-style-type: none"> • Light Industry • General Industry • Warehouses • Self-Storage • Open Storage • Vacant Land • Land with vacant buildings • Other industrial <p>This excludes uses of land not typically present in industrial areas, such as waste, utilities, transport and wholesale markets. A conversion factor of 80,000 tonnes/ha will be used to estimate the capacity based on land area.</p>	Best approximation of the potential land available for waste uses.

3.4 Splitting facilities

As with the 2006 study, the 2017 apportionment methodology will apportion both London's Local Authority Collected Waste and Commercial and Industrial Waste amongst the London Boroughs. As described above, the calculations for criterion 1 include data on each Borough's current existing waste management capacity made-up of a list of all waste management facilities in each borough and their annual waste through put in tonnes per annum.

It has been assumed that the 2006 apportionment methodology did not establish each waste facility's varying ability to process different waste types and instead used the sum total existing waste management capacity of each borough for both apportionments. However, some waste management facilities are able to process a wider range of waste streams than others. For example, energy from waste incinerators can process most waste streams, whereas composting facilities are limited to processing organic waste. If it can be estimated what proportion of each waste stream (Local Authority Collected Waste and Commercial and

Industrial Waste) each facility can process, LUC will be able to more accurately calculate the existing capacity of each borough to process each stream.

This alternative approach would be quite complex and time consuming, requiring a not insignificant input from the GLA to verify the accuracy of the existing facilities dataset, determine assumptions relating to the full range of facility types across London, how the waste facility types should be grouped and what the proportion assumption would be for each waste stream.

3.5 Additional Questions for Consideration

Discussion Point 1.5: Should 100% of the potential future capacity (minus the 5% frictionally vacant industrial land) be used in the criteria 1 calculations, or should a smaller percentage be used to account for the potential for some of London's existing industrial land being released for housing development? If the latter is of interest, then what should this percentage be?

Discussion Point 1.6: Should the City of London be treated differently (as it was in the 2006 study), or treated the same as all other boroughs?

4.0 CRITERION 2 - PROXIMITY TO WASTE ARISING

4.1 Intended Purpose

This criterion aims to assign higher apportionment percentages to those boroughs with surplus capacity for waste management, based on their proximity to those in deficit using roads and navigable waterways.

4.2 2006 Study

A centre point for each borough was calculated using GIS. The time to travel between the centre point of each borough with a deficit in capacity (calculated in Criterion 1) to each borough with a surplus in capacity (via both roads and navigable waterways) was calculated. Each of these values is then averaged together for each borough to give an average travel time for each borough in capacity to those in deficit.

The above method was used to separately calculate both roads and navigable waterways, and the mean of these two SI values was used as the final SI value for this criterion.

4.3 2017 Study: Proposed Amendments

LUC believe there is a strong case for removing this criterion from the study for the following reasons:

- It assigns higher scores to boroughs closer to those in deficit; however, it is not always practical for the closest boroughs to take the waste over those that are further away.
- Criteria 3 (Proximity to Sustainable Transport Modes), 4 (Proximity to the Road Network) and 5 (Ability to Use Sustainable Transport Modes) tackle the underlying planning implications of this criterion more effectively, i.e. the ability of Borough's in deficit to transport their waste sustainably, safely and quickly.
- Calculating travel time involves extremely detailed and time intensive calculations, which are usually used for calculating travel times between two specific locations. In this case, the start and end points of the analysis (the centre points of the boroughs) are not specific locations, but rather proxies for the average distance needed to travel to reach any point within the borough, i.e. a very accurate analysis is being used to process very vague parameters. This risks giving the impression of accuracy when the results are actually very high level approximations.

Table 4.1
2017 data and sources (If criterion is retained)

Dataset	Source	Justification for Inclusion
Strategic Road Network	A-Roads and Motorways from Ordnance Survey Integrated Transport Network (OS ITN)	A lot of waste is transported by road and so it is important to understand the availability of strategic roads.
Navigable Waterways	<p><u>Canals</u> – GLA <u>Rivers</u> – Ordnance Survey Open Rivers. The specific categories used were:</p> <ul style="list-style-type: none"> • River Thames • Other tidal rivers 	A large amount of waste is transported by waterways, so it is important to identify those boroughs with larger numbers of them.

Discussion Point 2.1: Should this criterion be removed or not?

5.0 CRITERION 3 - PROXIMITY TO SUSTAINABLE TRANSPORT MODES

5.1 Intended Purpose

This criterion aims to assign a higher apportionment value to boroughs with the ability to transport waste via sustainable modes of transport, specifically via railways and navigable waterways.

5.2 2006 Study

Two SI values were calculated for each borough; one for the density of rail track, and the other for density of navigable waterways. The mean of the two was used as the final SI value.

5.3 2017 Study: Proposed Amendments

In the 2006 study, Criterion 3 and 4 were assessed in the same way (using overall density). However, rail and waterways can only be accessed from a small number of locations, whereas roads are much more readily accessible.

As such, we recommend that the updated study takes into account access on to sustainable transport modes as well as the density of sustainable transport routes within the borough. To model this, two AP scores will be calculated – one for the number of rail heads per metres of rail track, and a second for the number of wharves per metres of navigable waterway.

These two scores will be averaged together, as in the previous study, to give an overall score.

Table 5.1
2017 data and sources

Dataset	Source	Justification for Inclusion
Rail track	Network Rail	Waste can be transported by rail, so understanding the availability of rail track is important
Rail heads	Network Rail	Unlike roads, rail has few access points for freight. This data would be included in order to take into account rail access
Navigable Waterways	Canals – GLA Rivers – Ordnance Survey Open Rivers	A large amount of waste is transported by waterways, so it is important to identify those boroughs with larger numbers of them
Protected Wharves	GLA	As with rail, access to waterways requires dedicated access points, so this data would be included in order to take into account access.

Discussion Point 3.1: Is this criterion amendment acceptable?

6.0 CRITERION 4 - PROXIMITY TO THE ROAD NETWORK

6.1 Intended Purpose

This criterion aims to assign a higher apportionment percentage to boroughs with greater access to the strategic road network. This is to highlight those boroughs where heavy goods vehicles have the potential to access the strategic road network more readily, spending less time on non-strategic roads that are more vulnerable to congestion.

6.2 2006 Study

The density of the strategic road network in each borough was calculated, giving a single SI value. Using this approach, City of London emerged as the borough with the highest road density, which has the effect of assigning a higher apportionment to this borough under this scenario.

6.3 2017 Study: Proposed Amendment Options

Option 1

Retain this criterion as is, noting the expected output for City of London above.

Option 2

An alternative method would be to base the total percentage value on the length of strategic road within each borough within 1km of any existing and potential future waste management site locations (potential future capacity). This would be regardless of the borough in which the potential future waste management site resides.

This would produce a figure for each borough showing the length of roads within close proximity of a waste management site – therefore giving a proxy for the level of access the waste facilities in each borough have to the strategic road network.

This approach would more accurately highlight the boroughs that have existing and potential industrial land with greatest access to the strategic road network.

Table 6.1
2017 data and sources

Dataset	Source	Justification for Inclusion
Strategic Road Network	A-Roads and Motorways from Ordnance Survey Integrated Transport Network (OS ITN)	This criterion aims to identify those boroughs where the existing and potential waste facilities are closer to the strategic road network, in order to minimise the nuisance of heavy goods vehicles on smaller, local roads.

Discussion Point 4.1: Which option (1 or 2) is preferred? Alternatively, please suggest another option.

7.0 CRITERION 5 - ABILITY TO USE SUSTAINABLE TRANSPORT MODES

7.1 Intended Purpose

This criterion aims to assign a higher apportionment percentage to those boroughs with a greater ability to use sustainable transport modes to transport waste.

7.2 2006 Study

The previous study assigned an SI value to each borough based on the number of wharves within it. Those with no wharves were assigned a value of 0. The SI of this criterion was then combined with that of Criterion 3.

7.3 2017 Study: Proposed Amendments

Our proposed amendments to criterion 3 (proximity to sustainable transport modes) incorporate the number of wharves (and now rail heads). This amendment would make criterion 5 redundant. Therefore, we recommend that criterion 5 be removed from the apportionment methodology.

Discussion Point 5.1: Is the removal of this criterion acceptable?

8.0 CRITERION 6 - HISTORIC PATTERNS OF HISTORIC WASTE MANAGEMENT CAPACITY

8.1 Intended Purpose

This criterion is intended to take into account existing waste contracts between boroughs.

8.2 2006 Study

In the 2006 study this criterion was not assigned an SI value of its own. Instead, the elements of this criterion were included in Criterion 1 (Capacity). However, the 2006 study still separated out Criterion 1 and 6 when it came to weighting the individual criteria, applying a weighting to both. This had the effect of doubling the weighting applied to Criterion 1 – essentially making it worth twice as much as the other criteria.

8.3 2017 Study: Proposed Amendments

LUC's original intention was to include Criterion 6 within Criterion 1, thus removing this criterion from the study and the unnecessary double weighting. However, LUC have been unable to source a data set that can provide a reasonably accurate⁹, comprehensive and consistent representation of historic patterns of waste management distribution across London. Consequently, we recommend that this criterion be removed from the 2017 apportionment method completely.

Discussion Point 6.1: Is the removal of this criterion acceptable?

⁹ The Environment Agency's Waste Data Interrogator could be used to indicate the distribution of capacity in 2006, but it is unknown how representative this 10 year old data is of the current distribution.

9.0 CRITERION 7 - OTHER LAND USES / ENVIRONMENTAL FACTORS

9.1 Intended Purpose

This criterion assigns an apportionment percentage to each borough based on the amount of the borough's total land not designated by environmental designations. It does not exclude areas that fall within a designation, but simply highlights the amount of land that falls outside of them.

9.2 2006 Study

The previous study took into account the following planning and environmental designations:

- Green Belt
- Metropolitan Open Land (MOL)
- Sites of Importance for Nature Conservation (SINCs)
- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)
- Sites of Special Scientific Interest (SSSIs)
- Ramsar sites

These were combined spatially to avoid double counting of areas (for example, areas that are both SSSIs and SACs). The total 'constrained area' was then taken away from the total area of the borough to give an 'unconstrained area'. Much of the area considered in the apportionment therefore included existing land uses such as housing, open space, infrastructure and employment land – as long as these areas were outside of designations. SI values were calculated from the unconstrained area.

9.3 2017 Study: Proposed Amendments

We recommend that the 2017 study also considers the following cultural heritage designations:

- Scheduled Monuments
- Listed Buildings
- Registered Parks and Gardens
- Conservation Areas
- World Heritage Sites

It is important to note that the Listed Buildings dataset is only available as points, not areas. We therefore propose that a 10 metre radius buffer be applied to each point as a representation of its footprint (equal to 314m² for each Listed Building)¹⁰.

In addition, we also recommend that this constraints analysis should only be applied to the land identified as having potential for future waste management facilities, i.e. potential future

¹⁰ This is in line with previous studies LUC has undertaken, and is intended to function as a notional representation, not an approximation of setting.

capacity, rather than the total area of each borough. This analysis would provide a more accurate picture of the level of constraint of available land potentially suitable for waste management facilities.

Table 9.1
2017 data and sources

Dataset	Source	Justification for Inclusion
Green Belt	GLA	Paragraph 6 of the National Planning Policy for Waste states that waste planning authorities should first look for suitable sites and areas outside the Green Belt for waste management facilities that, if located in the Green Belt, would be inappropriate development.
Metropolitan Open Land (MOL)	GLA	Policy 7.17 (MOL) in the London Plan states that MOL is afforded the same level of protection as Green Belt. Furthermore, para 7.58 in the London Plan's supporting text states that paragraphs 79-92 of the NPPF on Green Belts applies equally to MOL.
SINCs	GIGL (via GLA)	SINCs receive a high degree of protection through policies in the Mayor's London Plan and the land-use planning process, specifically policy 7.19.
SACs	Natural England	Appendix B of the National Planning Policy for Waste highlights the importance of minimising adverse impacts on international and national sites of nature conservation.
SPAs	Natural England	
SSSIs	Natural England	
Ramsars	Natural England	
Scheduled Monuments	Historic England	
Listed Buildings	Historic England	Appendix B of the National Planning Policy for Waste highlights the importance of minimising adverse impacts on heritage assets.
Registered Parks and Gardens	Historic England	
Conservation Areas	GLA	
World Heritage Sites	Historic England	

Discussion Point 7.1: Are these criterion amendments acceptable?

10.0 CRITERION 8 - FLOOD RISK

10.1 Intended Purpose

This Criterion aims to assign an apportionment percentage to each borough based on the area not constrained by flood risk.¹¹

10.2 2006 Study

The 2006 study gave an SI value based on the area of each borough outside of flood areas.

10.3 2017 Study: Proposed Amendments

Option 1

Use the same method but, as with Criterion 7, we would recommend that this analysis only be applied to the area of each borough identified as having potential to accommodate future waste management facilities, i.e. potential future capacity, rather than the total area of each borough.

Furthermore, we would recommend that the areas of flood zone falling within areas defended by flood defences, such as the Thames Barrier, should not be considered to be at risk from flooding.

Option 2

An alternative option would be to include flood zones as an additional constraint considered in Criterion 7. Isolating flood zones within its own criterion offers the potential to weight this constraint more heavily than the other environmental designations listed in Criterion 7, which may or may not be considered appropriate by the Boroughs. We would be interested in the GLA's views as to whether this is still considered to be appropriate.

Table 10.1
2017 data and sources

Dataset	Source	Justification for Inclusion
Flood Zones 2 & 3	Environment Agency via GLA	See footnote 7 for detailed explanation.

¹¹ Paragraph 100 in the NPPF and the Technical Guidance on Flood Risk require Local Plans to apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change and giving preference to locating development in Flood Zone 1, followed by Flood Zone 2 then Flood Zone 3. Table 2 (Flood Risk Vulnerability Classification) in the National Planning Practice Guidance outlines the flood risk vulnerability classifications. Landfill sites and waste management facilities for hazardous waste are considered to be more vulnerable, which means that they are potentially incompatible with flood zones 2 and 3. Other waste, water and sewage treatment works are considered less vulnerable, which means that they are potentially compatible with most flood zones with the exception of flood zone 3b, the functional floodplain.

Discussion Point 8.1: Are amendments to the 2006 apportionment method outlined in Option 1 acceptable?

Discussion Point 8.2: Which option (1 or 2) is preferred? Alternatively, please suggest another option.

11.0 CRITERION 9 - SOCIO-ECONOMIC FACTORS

11.1 Intended Purpose

This criterion aims to assign higher apportionment percentages to those boroughs where waste facilities are likely to cause less significant adverse socio-economic impacts. Specifically it aims to assign higher apportionment percentages to boroughs with lower levels of social deprivation and fewer existing facilities to avoid cumulative impacts.

11.2 2006 Study

The 2006 study calculated two SI values, one for the existing licenced capacity of each borough as an indication of the density of existing waste management facilities, and the other for the borough's deprivation ranking using the 'Average Rank of Scores' index from the Indices of Multiple Deprivation (2004/05) IMD data.

Originally, the 2006 study based this criterion on the assumption that any adverse socio-economic impacts generated by waste facilities would be balanced by the positive socio-economic impacts, such as job creation. However, following the stakeholder workshop event, the criterion was amended to take to acknowledge the adverse effects of waste facilities in areas of high deprivation, and the cumulative effects of existing facilities.

11.3 2017 Study: Proposed Amendments

Option 1

Option 1 would use the original method using an updated dataset. Due to changes in the methodology used for calculating deprivation between 2005 and 2015, it is now recommended to use the 'Average Rank of Ranks' index, rather than the 'Average Rank of Scores' index in the (2015) IMD data. Using this newer dataset does not affect the way this criterion is calculated, as both indices assign a single value to each borough of between 1 and 326 (with 1 being the most deprived).

Option 2

A second option would be the same as Option 1, but with the existing licence capacity component replaced with either the number of facilities per hectare or the number of facilities per head of population, instead of the number per borough. This eliminates the bias whereby smaller boroughs, which will have less space for facilities, will be at a disadvantage.

Option 3

A third option would be to exclude the half of this criterion that assigns higher apportionment percentages to boroughs with fewer existing facilities. There are two reasons for considering this:

- Criterion 1 includes a component that gives boroughs with greater capacity a higher apportionment percentage. Having this criterion apportion values the opposite way is somewhat contradictory, albeit the contradiction being for different reasons. This has the effect of the two criteria cancelling each other out to a degree (depending on the final weightings). Since, for both criteria, the capacity component makes up only part of the final apportionment percentage, this cancelling effect is likely to be small.
- The method behind this calculation serves to reduce the difference between boroughs. This is because the range of values created is very small, so this reduces the difference shown in the half of this criterion that assesses deprivation.

Table 11.1
2017 data and sources

Dataset	Source	Justification for Inclusion
Current Existing Capacity	SLR/GLA	This data would be used to identify those boroughs with fewer existing facilities, to avoid cumulative impacts. If options 2 or 3 were chosen, this data would not be used.
Number of Existing Facilities	SLR/GLA	This data would be used to identify those boroughs with fewer existing facilities, to avoid cumulative impacts. If options 1 or 3 were chosen, this data would not be used.
IMD 2015 Deprivation Ranking	ONS	The study aims to apportion more waste to boroughs with lower levels of social deprivation, and IMD is the most complete dataset for examining this.

Discussion Point 9.1: Are amendments to the 2006 apportionment method outlined in Option 1 acceptable?

Discussion Point 9.2: Which option (1, 2 or 3) is preferred? Alternatively, please suggest another option.

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