

**Greater Manchester Waste Plan**  
**PPS25 Flood Risk Sequential Test**

August 2010

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## **1. Introduction**

- 1.1 Greater Manchester has the largest population of any sub-region within the North West and is the largest producer of waste for all streams, including, municipal waste, commercial and industrial, construction and demolition and hazardous waste.
- 1.2 Traditionally Greater Manchester has relied upon landfill to dispose of the waste it generates which has largely been exported out of the conurbation. However, as a result of European legislation and Government targets, a range of new waste management facilities will be required for recycling, composting, treatment and recovery if Greater Manchester is to successfully manage the waste that arises within the conurbation. This will reduce the volume of residual waste that finds its way to landfill and land raising sites. Nevertheless, Greater Manchester will also need to provide solutions for disposing of its final residual waste in the most appropriate sustainable manner.
- 1.3 To provide a sound basis for the provision of waste management infrastructure agreement was reached in 2006 for the ten metropolitan districts of Greater Manchester; Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan, to produce a Joint Waste Development Plan Document (the 'Waste Plan').
- 1.4 The Waste Plan will form part of each Authority's statutory development plan and runs from 2012 to 2027. It aims to set out a waste planning strategy to enable adequate provision of waste management facilities in appropriate locations for municipal, commercial and industrial, construction and demolition and hazardous wastes.
- 1.5 The Waste Plan will contain a series of sites and areas that are, in principle, suitable for waste management facilities. In order for development to take place on these sites and areas an assessment of flood risk is needed to avoid inappropriate development in areas at risk of flooding. Therefore the purpose of this document is to determine whether the identified sites and areas are suitable for the proposed waste facility, based upon the level of flood risk present at each site. This will be achieved through the application of the 'Sequential Test'.

## 2. Flood Risk Context

- 2.1 Planning Policy Statement 25 (PPS25): *Development and Flood Risk* (March 2010) sets out the Government's policy on development and flood risk. It requires planning authorities to take flood risk into account at all stages in the planning process and seeks to avoid inappropriate development in areas at risk of flooding by steering new development to areas of lowest risk. Where new development is, exceptionally, necessary in areas of higher risk, PPS25 aims to make it safe, without increasing flood risk elsewhere, and, where possible, reducing flood risk overall.
- 2.2 PPS25 advocates the application of a risk based sequential approach, consisting of a hierarchy of management actions to avoid, substitute, control and mitigate flood risk. To ensure that this approach is embedded within the plan preparation process, PPS25 stipulates that planning authorities identifying land for development in their Local Development Documents, of which the Greater Manchester Waste Plan is one, should apply a Sequential Test to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed.
- 2.3 The Sequential Test is a simple decision making tool designed to ensure that sites and areas at little or no risk of flooding are developed in preference to those at higher risk. The Flood Zones identified on Environment Agency mapping provide the starting point for the application of the Sequential Test. These Flood Zones are outlined in Figure 1 below and defined in more detail in PPS25. They refer to the probability of flooding from rivers and the sea only, ignoring the presence of existing defences. For this reason they are often referred to as the 'undefended' zones.

Figure 1: Flood Zones

Flood Zone	Probability of Flooding	Definition
Zone 1	Low	Land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).
Zone 2	Medium	Land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% – 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% – 0.1%) in any year.
Zone 3a	High	Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
Zone 3b	Functional Flood Plain	Land where water has to flow or be stored in times of flood. This zone is not defined by a rigid probability parameter but it is advised that land which would flood with an annual probability of 1 in 20 (5%) or greater in any year, or is designed to flood in an extreme (0.1%) flood, should provide a starting point for discussions to identify the functional floodplain.

- 2.4 The Sequential Test specifies that only where there are no reasonably available sites in Flood Zone 1 should consideration be given to sites at a medium risk of flooding (Flood Zone 2) and then sites at a high risk of flooding (Flood Zone 3), depending on the vulnerability of the development.
- 2.5 If, following application of the Sequential Test, it is not possible, consistent with wider sustainability objectives, for the development to be located in zones of lower probability of flooding, PPS25 states that planning authorities may need to apply a further test, known as the Exception Test.
- 2.6 The Exception Test provides a method of managing flood risk while still allowing necessary development to occur. PPS25 advises that the Exception Test is only appropriate for use where the Sequential Test alone cannot deliver acceptable sites, but where some continuing development is necessary for wider sustainable development reasons, taking into account the need to avoid social or economic blight and the need for essential civil infrastructure to remain operational during floods.
- 2.7 For the Exception Test to be passed:
- a) It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a Strategic Flood Risk Assessment (SFRA) where one has been prepared;
  - b) The development should be on developable previously-developed land or, if it is not on previously developed land, that there are no reasonable alternative sites on developable previously-developed land; and
  - c) A FRA must demonstrate that the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.
- 2.8 As certain types of development and the people who use them are more at risk from flooding than others, PPS25 classifies developments according to their vulnerability. Five vulnerability classifications are defined, these are: Essential Infrastructure, Highly Vulnerable, More Vulnerable, Less Vulnerable and Water-compatible Development. Full definitions are provided in Table D.2 of PPS25, including the types of development that fall under each classification. According to the flood risk vulnerability classification index in PPS25 waste treatment facilities are considered to be a 'less vulnerable use'. However, landfill and sites used for waste management facilities for hazardous waste are both classified as 'more vulnerable uses'.
- 2.9 PPS25 also specifies which particular forms of development are incompatible with the level of flood risk and the instances where it is necessary for the Exception Test to be applied. This is reproduced in Figure 2 below:

Figure 2: Flood Risk Vulnerability and Flood Zone ‘Compatibility’

Flood Risk Vulnerability classification (see Table D2)		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
	Zone 3b ‘Functional Flood plain’	Exception Test required	✓	✗	✗	✗

Key:

✓ Development is appropriate

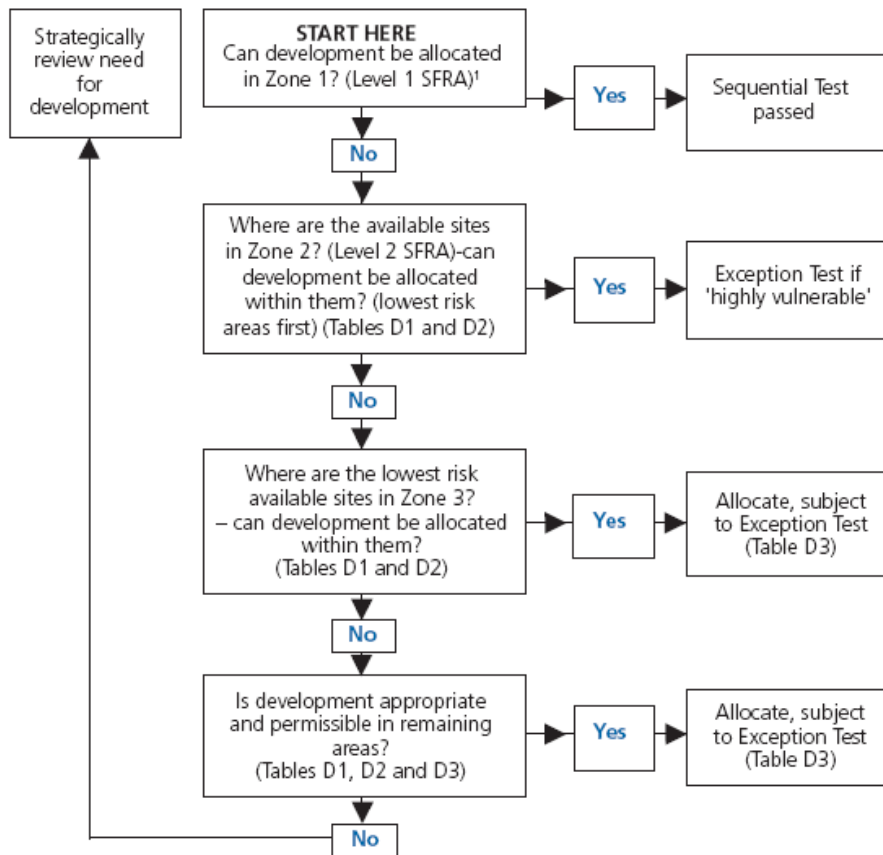
✗ Development should not be permitted

- 2.10 As a ‘less vulnerable use’, non-hazardous waste management facilities are considered to be compatible with the level of risk in Flood Zones 1, 2 and 3a. Landfill/landraise and hazardous waste management facilities are however both considered to be ‘more vulnerable uses’ and, as such, are compatible with Flood Zones 1 and 2 but can only be located in Flood Zone 3a when an Exception Test has been passed. At the Local Development Document stage, only the likelihood of passing the Exception Test can be assessed, as actually passing the test will require the completion of a site specific FRA to determine if the development site and its occupiers/users will be safe during times of flood.
- 2.11 No types of waste management facility are considered to be appropriate uses in Flood Zone 3b.

### 3. Methodology

3.1 The approach to undertaking the Sequential Test for the Waste Plan is based upon Government guidance contained within PPS25 and the PPS25 companion Practice Guide (2009). PPS25 sets out the broad approach which should be followed when applying the Sequential Test. This is outlined in Figure 3 below:

Figure 3: Application of the Sequential Test at the Local Level for LDD Preparation (source: PPS25)



3.2 In addition, the Sequential Test for the Waste Plan has drawn upon information contained within Strategic Flood Risk Assessments. A sub-regional Greater Manchester Strategic Flood Risk Assessment (SFRA), commissioned by the ten AGMA districts, was published in August 2008. This used existing data to assess broad flood risk arising from each of the sources identified in PPS25 but, whilst it offered useful data on flooding from rivers and groundwater, provided more limited information on canals, sewers and surface water. To enable these data gaps to be filled a number of Level 2 SFRAs are being undertaken for the constituent authorities of Greater Manchester. These studies provide a more detailed understanding of flood risk from all sources to help support the application of the Sequential Test.

3.3 Once the flood risk has been determined for each site/area included within the publication version of the Waste Plan, consideration is given to the vulnerability of the development to flooding and whether it is deemed to be appropriate. This is based upon the Flood Risk Vulnerability and Flood Zone

'Compatibility' matrix in Figure 2. The next stage of the Sequential Test is to look at the risk of flooding to potential development sites in greater detail and assess whether development can be directed to a site/area at a lower risk.

- 3.4 As the Waste Plan applies to the whole of Greater Manchester, the geographical area of search for the Sequential Test will be the entire the sub-region. Specifically, when assessing whether there are any sites/areas at a lower risk of flooding that could accommodate waste management facilities consideration will be given to all sites/areas identified during the plan preparation process either through the site identification process or through the various call for sites exercises. In accordance with guidance contained within PP25 sites have only been included as part of the Sequential Test where they are reasonably available.
- 3.5 Furthermore, and in accordance with paragraph 18 of PPS25, any alternative site at a lower risk of flooding which is capable of accommodating the proposed development should also be consistent with other sustainability objectives. The sites will therefore be expected to comply with the spirit and purpose of relevant Unitary Development Plan and emerging Core Strategy policies.

## 4. Sequential Test of Proposed Site / Area Allocations

- 4.1 Government guidance contained within PPS10: *Planning for Sustainable Waste Management* (2005) states that local planning authorities should identify in development plan documents sites and areas suitable for new or enhanced waste management facilities for the waste management needs of their area. As such, one of the main purposes of the Waste Plan is to allocate land that is suitable for waste management to enable the future development of sufficient waste management facilities to meet Greater Manchester's needs.
- 4.2 A search for suitable sites/areas for the location of future waste management facilities in Greater Manchester was undertaken in 2007. This involved an assessment of all land in Greater Manchester with the potential to provide for built waste management facilities or residual waste disposal.
- 4.3 A comprehensive and systematic approach to the identification of these sites and areas was adopted to ensure that all reasonable, relevant and realistic options for siting waste management facilities were explored during the preparation of the Plan. This involved establishing an initial long list of potentially suitable sites and areas from a variety of sources of land use information, including:
- National Land Use Database (NLUD);
  - Employment Land Availability data;
  - Contaminated land database;
  - Industrial/commercial land schedules;
  - Brownfield land studies;
  - Derelict Land Studies;
  - Strategic Flood Risk Assessments;
  - Urban Potential Studies; and
  - Existing waste management facilities.
- 4.4 In addition, landowners, developers and other interested parties have been invited to nominate potential sites throughout the plan preparation period and six call for sites exercises were carried out during the process of Issues and Options, this included adverts in local press, on the Waste Plan website and direct contact with landowners and the waste industry. This initial long list of sites and areas was then whittled down or "sieved" by assessing them against inclusionary and exclusionary criteria, which were developed through consultation with English Heritage, Natural England, Environment Agency and consultants carrying out Sustainability Appraisal of the Waste Plan. Where a site / area on the 'long list' would clearly and directly have a major adverse impact on any of the exclusionary criteria if it were to be brought forward as a waste management facility, that site / area was not shortlisted.
- 4.5 As a result of this exercise, the *Stage Two Issues and Options: Built Facilities Report* contained in total 75 areas and 42 sites which were identified as being potentially suitable for waste development. A similar process of initial site identification was also used at Stage Two Issues and Options: Residual Waste Disposal. Each of these identified sites and areas was subject to sustainability appraisal to assess the extent to which the site would contribute to the achievement of a range of social, environmental and economic objectives. The sites/areas that appear in the final Waste Plan are based on the outcomes from all of the Issues and Options stages, the Preferred Option

stage and also the performance of the site in terms of the sustainability appraisal.

### Site Allocations for Built Waste Management Facilities

- 4.6 To ensure the delivery of the capacity requirements for the plan period, the publication version of the Waste Plan identifies seven sites for built waste management facilities. These are considered to be the most sustainable locations for future waste management development in Greater Manchester when considered against a range of environmental, economic and social factors.
- 4.7 The Plan does not stipulate precisely what type of built facility will be accommodated on each site. Instead, in recognition of the fact that a full assessment of the suitability of the site for a particular type of facility will need to be undertaken by the developer prior to applying for planning permission, the Plan lists all potential types of built waste management facility that would be suitable on each site. These include both 'enclosed' facilities, where waste is processed inside a building, and 'open facilities' which, although occasionally are partially enclosed, largely deal with the waste in the open air.
- 4.8 In accordance with PPS25, the first stage of the Sequential Test is to identify the level of flood risk associated with each of the proposed site allocations for built waste management facilities contained within the publication document. Figure 4 below contains the results of this analysis:

Figure 4: Built Waste Management Facility Sites and Flood Risk

Site Reference	Site Name	Authority Area	Flood Risk Zone
BL9	Watersmeeting C South Triangle	Bolton	Flood Zones 1, 2 and 3a
BL11	226 – 228 Waterloo Street	Bolton	Flood Zone 1
OL4	Land off Mossdown Road	Oldham	Flood Zone 1
OL5	Land at Millstream Lane, Clayton Bridge	Oldham	Flood Zones 1, 2 and 3a
ST2	Plot 4 and 5, Bredbury Parkway	Stockport	Flood Zone 1
TR8a	Land adjacent to Tank Farm Chemical Treatment Works	Trafford	Flood Zone 1
W4	CA Site, Markerfield Way	Wigan	Flood Zone 1

- 4.9 Five of the proposed sites for built waste management facilities are located entirely within Flood Zone 1 and are therefore considered to be at a low risk of flooding from rivers. The remaining two sites, Watersmeeting C South Triangle (BL9) and Land at Millstream Lane, Clayton Bridge (OL5), both contain land that falls within Zones 1, 2 and 3a. However, in relation to Watersmeeting C South Triangle, the majority of this site actually falls within Flood Zone 1 (lowest risk) and only a very narrow strip adjoining the river falls within Flood Zones 2 and 3a (medium and high probability of flooding). Although PPS25 specifies that most waste management facilities are acceptable in Flood Zones 2 and 3a it is still necessary for the Sequential Test to be applied. In order for this Test to be applied it will still however be necessary to consider whether there are any alternative, reasonably available

sites that are at a lower risk of flooding which could accommodate built waste management facilities.

- 4.10 The *Stage Two Issues and Options: Built Facilities Report* identified 42 sites as being potentially suitable for waste development. It is proposed to include seven of these in the Waste Plan. The remaining 35 sites that were removed will be considered as part of the Sequential Test to establish whether there are any reasonably available sites at a lower risk of flooding that could accommodate built waste management facilities. These 35 sites are listed below in Figure 5:

Figure 5: Sites for built waste facilities considered through the plan preparation process but excluded from the publication version of the Waste Plan

Site Reference	Site Name
BL2	Bolton Road, Kearsley
BL3	Mabels Brow
BL4	Land to the rear of Halliwell Mills, Ragland Street
BL5	Land off Derby Street
BL6	Mill Street / Mule Street
BL7	Adjacent to Hanbury's Emlyn Street
BL8	Weston Street
BL10	Bolton Waste Water Treatment Works
BL12	Raikes Lane Industrial Estate
BU7	Daisyfield Industrial Estate, Wellington Road
BU9	Former Drum Works, Park Road
BU10	ISM Waste, Kenyon Street
OL2	Land at Lumm Farm, Droylsden
OL6	Rugby Mill / Ram Mill, Oldham
SL11	Mitchell Shackleton
ST1	Vacant plot at junction of Ashton Road / Bredbury Road, Bredbury Industrial Estate
ST9	Land east of former Council Yard, Whitefield Road, Bredbury
TA3	Land at Shepley Industrial Estate (north), Audenshaw
TA6	Remainder of Park Mill, Park Road, Dukinfield
TR1	Land at Partington Wharfside, including former BP depot, Manchester Road, Partington
TR2	Blagden Packaging N.V. 1130, Nash Road, Trafford Park
TR3	Carbo Site, Churchill Way, Trafford Park
TR4	G Gervin & Sons Ltd, Thompson Road, Trafford Park
TR6	Land to the north of Nash Road, Trafford Park
TR7	Plot A, Central Park Estate, Trafford Park
TR8	Tank Farm Chemical Treatment Works, Nash Road, Trafford Park
TR9	Progressive Waste Disposal, 9 Nash Road, Trafford Park
TR10	Lavelle & Sons, Churchill Way, Trafford Park
TR11	Thompson Road, Trafford Park
TR14	Shell Site, Common Lane, Carrington
TR15	Britannia ImportExport Ltd, Twining Road, Trafford Park
TR16	Carrington Vehicle Storage Site, Carrington
W7	Westleigh Lane, Leigh
W8	Ince Moss Junction Sidings, Cemetery Road, Ince
W12	Templeton Road, Platt Bridge

- 4.11 Nine of these 35 sites (BL2, BL6, BU7, BU9, OL6, ST1, TA6, TR4 and W7) were removed from the Waste Plan because they are unlikely to come forward for a waste management facility, either because the landowner has stated that the site is to be developed for a non-waste use or because the site is either already fully developed or under a long-term lease. As a consequence, these sites are not considered to be reasonably available and they have therefore been excluded from the alternative sites being considered as part of the Sequential Test.
- 4.12 Thirteen of the sites (TA3, TR1, TR2, TR3, TR6, TR7, TR9, TR10, TR11, TR14, TR15, TR16 and W8) were not included as sites in the Plan because they had been merged to form an area allocation. As such, these sites have also been excluded from the alternative sites being considered as part of the Sequential Test. Furthermore, one site (ST9) has planning permission for waste development, two (BU10 and TR8) are existing waste management facilities and another (BL12) has been included within a range of sites being developed through the Greater Manchester Waste Development Agency's (GMWDA) PFI contract. These sites will also be excluded from the Sequential Test as they would not contribute towards the additional capacity requirements that have been identified for Greater Manchester.
- 4.13 Of the nine remaining sites, seven (BL3, BL4, BL5, BL7, BL8, OL2 and SL11) are located entirely within Flood Zone 1 and are therefore considered to be at a lower risk of flooding than the Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5) sites. Therefore, in order for the Sequential Test to be passed it is necessary to assess whether it is possible, consistent with wider sustainability objectives, for the development to be located on these sites. This is considered below.
- 4.14 The two other sites identified as being potentially suitable for waste development but not included within the publication version of the Plan (BL10 and W12) fall within Flood Zones 1, 2 and 3. There is no more detailed information for either site. These sites are therefore not considered to be at a lower risk of flooding than the Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5) sites. As such, they will not be considered further as part of the Sequential Test.

#### **BL3 – Mabels Brow**

- 4.15 Mabels Brow is located entirely within Flood Zone 1. The site however only covers an area of 0.77 hectares. As a result, it is too small for a number of waste management facilities, including Conventional Thermal Treatment, Advanced Thermal Treatment, Mechanical Heat Treatment, In-Vessel Composting and Material Recycling Facilities.
- 4.16 Mabels Brow would need to be accessed through a developing residential area. It is within 20m of residential properties and is also adjacent to the playing fields of Kearsley West Primary and Nursery School. By virtue of their proximity to the site, an Open Air Waste Management Recycling Facility or an Open Windrow Composting facility would be likely to have a detrimental impact on these sensitive receptors. As a consequence, the site is not considered to be suitable for these open waste management facilities. The proximity of the site to housing also restricts its suitability for Mechanical Biological Treatment and Anaerobic Digestion.

- 4.17 Therefore, although the Mabels Brow is at a lower risk of flooding than both Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5), locating a waste management facility on this site would not be consistent with other sustainability considerations. It is therefore concluded that Mabels Brow does not represent an appropriate location for the type of development or land use proposed.

**BL4 – Land to the rear of Halliwell Mills, Ragland Street**

- 4.18 The site is located entirely within Flood Zone 1. There are however a number of environmental and amenity issues facing the site and, at 0.94 hectares, it is considered to be too small to accommodate a number of waste management facilities, including Conventional Thermal Treatment, Advanced Thermal Treatment, Mechanical Heat Treatment, In-Vessel Composting and Material Recycling Facilities.
- 4.19 There is a row of detached houses 40m south-east of the site. The location of a waste management facility on the site is likely to have an adverse impact on the perceived environmental quality and character of this nearby residential area. A waste management facility on this site would also be likely to impact on the amenity of the occupiers of these dwellings through odours, noise or vibration. As a result, the Sustainability Appraisal concluded that the land to the rear of Halliwell Mills is also unlikely to be suitable for Open Air Waste Management Facilities, Mechanical Biological Treatment or Anaerobic Digestion.
- 4.20 Therefore, although the site is at a lower risk of flooding than both Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5), locating a waste management facility on the land to the rear of Halliwell Mills would not be consistent with other sustainability considerations. It is therefore concluded that the site does not represent an appropriate location for the type of development or land use proposed.

**BL5 – Land off Derby Street**

- 4.21 The land off Derby Street is located entirely within Flood Zone 1. Furthermore, at 2.24 hectares, the site is of a sufficient size to accommodate a wide range of facilities. Nevertheless, there are a significant number of sensitive receptors located near to the site. Specifically, there are several rows of terraced houses adjacent to the site boundary, including terraces situated approximately 10m south-east of the site on Gregson Field and Abbott Street, 30m north-east of site on Parrot Street and on the opposite side of Derby Street from the site. In addition, Bolton Muslim Girls School is just over 100m south-west of site, Clarendon County Primary School is approximately 170m east of site, there is a library and community centre 90m south of site and a health centre 160m to the north-west.
- 4.22 The proximity of the site to these sensitive receptors, together with its location on a major road frontage into Bolton, means that developing the site for a waste management facility is likely to have a detrimental impact on amenity and the street scene. As a consequence, the Sustainability Appraisal of the site concluded that it would not be appropriate for the complete range of waste management facilities, including Open Air Waste Management Facilities, Conventional Thermal Treatment, Advanced Thermal Treatment,

Mechanical Heat Treatment, In-Vessel Composting, Material Recycling Facilities, Mechanical Biological Treatment and Anaerobic Digestion.

- 4.23 Therefore, although the site is at a lower risk of flooding than both the Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5) sites, locating a waste management facility on the land off Derby Street would not be consistent with other sustainability considerations. Therefore, the land off Derby Street does not represent an appropriate location for the type of development or land use proposed.

#### **BL7 – Adjacent to Hanbury's, Emlyn Street**

- 4.24 The site is located entirely within Flood Zone 1. Nevertheless, at only 0.78 hectares, it is too small for a number of waste management facilities, including Conventional Thermal Treatment, Advanced Thermal Treatment, Mechanical Heat Treatment, In-Vessel Composting and Material Recycling Facilities.

- 4.25 There are a number of sensitive receptors within the vicinity of the site. Two rows of terraced housing are within 10m of the northern boundary of site, there are three small reservoirs within a 250m radius of the site and Cobden Mill, a Grade II listed building, is just over 100m to the south-east of site. An Open Air Waste Management Recycling Facility or an Open Windrow Composting facility would be likely to have a detrimental impact on some of these sensitive receptors, particularly the dwellings to the north of the site. Consequently, the site is not considered to be suitable for these open waste management facilities. The proximity of the site to housing also restricts its suitability for Mechanical Biological Treatment and Anaerobic Digestion.

- 4.26 Therefore, although the site is at a lower risk of flooding than both the Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5) sites, it is considered that locating a waste management facility on the land adjacent to Hanbury's would not be consistent with other sustainability considerations. It is therefore concluded that the land adjacent to Hanbury's does not represent an appropriate location for the type of development or land use proposed.

#### **BL8 – Weston Street**

- 4.27 The identified site on Weston Street is located entirely within Flood Zone 1. The small size of this site however renders it unsuitable for a wide range of waste management facilities, including landfill, Conventional Thermal Treatment, Advanced Thermal Treatment, Mechanical Heat Treatment, In-Vessel Composting and Material Recycling Facilities.

- 4.28 The site is also in close proximity to a number of sensitive receptors. In particular, there are residential properties approximately 20m to east of the site boundary, semi-detached properties about 90m to the south-east and a reservoir, designated as a Site of Biological Importance (SBI), immediately to the north of the site. The proximity of the site to these sensitive receptors means that it is likely to be unsuitable for open waste facilities, Mechanical Biological Treatment or Anaerobic Digestion.

4.29 Therefore, although the site on Weston Street is at a lower risk of flooding than both Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5), locating a waste management facility on this site would not be consistent with other sustainability considerations. Therefore, it is concluded that the site on Weston Street does not represent an appropriate location for the type of development or land use proposed.

**OL2 – Land at Lumm Farm, Droylsden**

4.30 The site is within Flood Zone 1 and, although parts of the site are susceptible to surface water flooding, it is considered to be at a lower risk of flooding than both the Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5) sites.

4.31 The site is however located entirely within the Green Belt and, as such, built development on the site is considered to be inappropriate and would not be permitted unless there are very special circumstances. As a result, it is unlikely that the site would be suitable for Advanced Thermal Treatment facilities, a Material Recycling Facility, Mechanical Heat Treatment, Mechanical Biological Treatment, Anaerobic Digestion or In-Vessel Composting. The site is also situated over a major aquifer, which restricts the use of the site for landfill, and it is of insufficient size to accommodate a Conventional Thermal Treatment facility.

4.32 The site is on the periphery of a significant residential area. It is also adjacent to the Hollinwood Branch Canal, a Grade A SBI, and the Manchester and Ashton Under Lyne Canal SBI. This close proximity to a residential area and sites of nature conservation value is considered to make the site unsuitable for developments that would create vibrations, odours, noise, high levels of dust or visual intrusion. The environmental impacts of open waste facilities, such as Open Air Waste Management Recycling Facilities or Open Windrow Composting, would therefore preclude such development on this site.

4.33 Therefore, although the land at Lumm Farm is at a lower risk of flooding than both the Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5) sites, it is considered that locating a waste management facility on this site would not be consistent with other sustainability considerations. Accordingly, it is concluded that the land at Lumm Farm does not represent an appropriate location for the type of development or land use proposed.

**SL11 – Mitchell Shackleton**

4.34 Mitchell Shackleton is located within Flood Zone 1 and, although a relatively small portion of the site is susceptible to surface water flooding, the site is at a lower risk of flooding than both the Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5) sites.

4.35 There are a number of amenity issues facing the site, such as the close proximity of residential development and the adjacency of Mitchell Shackleton to the Bridgewater Canal, which is a SBI. Furthermore, there is also a Grade II listed building and a Conservation Area within 250m of the site. As a result, the site is not considered to be suitable for open waste facilities, such as Open Air Waste Management Recycling Facilities or Open Windrow Composting.

- 4.36 Salford City Council have stated that the regeneration plans for the site and the adjoining area are presently unknown and consider that the site may potentially come forward for an alternative use. As a result, it is contended that the allocation of the site for a waste management facility would be premature. Mitchell Shackleton cannot therefore be regarded as an appropriate location for the type of development or land use proposed.

### Conclusion

- 4.37 The above analysis demonstrates that locating a waste management facility on any of the seven sites at a lower risk of flooding than the Watersmeeting C South Triangle (BL9) and Land at Millstream Lane (OL5) sites would not be consistent with wider sustainability considerations. As a result, it is considered that there are no reasonably available sites at a lower risk of flooding that would be appropriate to the type of development or land use proposed. The sites included within the Plan are therefore considered to pass the Sequential Test.

### Area Allocations for Built Waste Management Facilities

- 4.38 To ensure the Waste Plan is sufficiently flexible to cope with any future change in circumstances, the publication version of the Plan identifies 24 areas for built waste management facilities. Whereas a 'site' constitutes an individual plot of land, an 'area' is a number of individual plots of land combined within a wider area, for example, an industrial estate or employment area. Although it may not be possible to know which plots within an area will be available in the future, it is accepted that the area is broadly suitable for waste development and could accommodate one or more waste management facilities.
- 4.39 The sites identified waste management facilities designed to provide the capacity identified by the Plan. The purpose of the areas for waste management facilities identified in the Plan is to provide additional choice to developers/investors, particularly for new unidentified waste management technologies.
- 4.40 In accordance with PPS25, the first stage of the Sequential Test is to identify the level of flood risk associated with each of the proposed area allocations for built waste management facilities. Figure 6 below contains the results of this analysis:

Figure 6: Built Waste Management Facility Areas and Flood Risk

Area Reference	Area Name	Authority Area	Flood Risk Zone
BU1	Dumers Lane EGA, Radcliffe	Bury	Flood Zones 1, 2, 3a and 3b
BU3	Pilsworth Industrial Estate	Bury	Flood Zone 1
BU4	Part of Fernhill EGA	Bury	Flood Zone 1
BU8	Land at Pimhole, Pimhole Road	Bury	Flood Zone 1
MC1	Ardwick Yards	Manchester	Flood Zone 1
OL1	Land in the area between Higginshaw Lane and the Higginshaw railway	Oldham	Flood Zones 1, 2, 3a and 3b

OL3	Land off Higginshaw Lane	Oldham	Flood Zone 1
RD3	Heap Bridge Industrial Estate	Rochdale	Flood Zones 1, 2 and 3a
RD6	Mandale Park, Rochdale	Rochdale	Flood Zones 1 and 3a
RD8	Rhodes Business Park	Rochdale	Flood Zone 3a
SL2	Clifton Industrial Estate	Salford	Flood Zone 1 and 2
SL3	Cobden Street	Salford	Flood Zone 1
SL6	Oakhill Industrial Estate	Salford	Flood Zone 1
SL12	Ashtons Field	Salford	Flood Zone 1
ST4	Green Lane Industrial Estate	Stockport	Flood Zone 1
ST6	Whitefield Road Industrial Estate	Stockport	Flood Zone 1
ST7	Bredbury Industrial Estate (north)	Stockport	Flood Zone 1
ST8	Bredbury Industrial Estate (south)	Stockport	Flood Zone 1
TA3a	Shepley Industrial Estate	Tameside	Flood Zone 2
TR17	Land at Trafford Park	Trafford	Flood Zones 1, 2 and 3a
TR18	Carrington Area: Part A – Shell Site, Common Lane; Part B – Carrington Vehicle Storage Works; Part C – Partington Wharfside.	Trafford	Flood Zones 1 and 2
W1a	Miry Lane Employment Area	Wigan	Flood Zone 1
W8a	Ince Moss Junction Sidings, Cemetery Road	Wigan	Flood Zone 1
W13a	Martland Park	Wigan	Flood Zone 1

4.41 Fifteen of the proposed areas for built waste management facilities are located entirely within Flood Zone 1 and are therefore considered to be at a low risk of flooding from rivers. Of the remaining areas identified for waste management facilities, one is considered to be exclusively within Flood Zone 2 (TA3a – Shepley Industrial Estate) and another is entirely within Flood Zone 3a (RD8 – Rhodes Business Park). The remaining seven areas contain land within Flood Zone 1 and at least one other flood zone.

4.42 The *Stage Two Issues and Options: Built Facilities Report* identified 75 areas as being potentially suitable for waste development. It is proposed to include 24 of these in the Waste Plan. The remaining 51 areas that have been removed are listed below in Figure 7:

Figure 7: Areas for built waste facilities considered through the plan preparation process but excluded from the publication version of the Waste Plan

Area Reference	Area Name
BL1	Salford Road (Cutacre Tip)
BU2	Eton Hill, Industrial Estate
BU5	Freetown EGA
BU6	Warth Mills (former MacPhersons Factory), Warth Road

MC2	Central Park (southern part)
MC3	Roundthorn Industrial Area
MC4	Sharston Industrial Area
MC5	Teesland IDG, Queens Road
RD1	Fieldhouse Industrial Estate
RD2	Grimshaw Lane, Middleton
RD4	John Lee Fold, East Middleton
RD5	Manchester Street, Heywood
RD7	Phoenix Industrial Estate, Heywood
RD9	Spring Vale, CA Site
RD10	Stakehill Industrial Estate, Bentley Avenue
RD11	Summercastle, Chichester Street
RD12	Todmorden Road, Littleborough
RD13	Rochdale Waste Water Treatment Works
SL1	Agecroft Industrial Estate
SL4	Nasmyth and Lyntown Industrial Estate
SL5	Northbank Industrial Estate
SL7	Lester Road Industrial Estate
SL8	Wardley Industrial Estate
SL9	Wharton Lane, Cutacre Extension (east and west)
SL10	Swinton Hall Road / Pendlebury Road Industrial Estate
ST3	Crossley Park Industrial Estate
ST5	White Hill Industrial Estate
TA1	Windmill Lane, Denton
TA2	Broadway Industrial Estate, Dukinfield, Hyde
TA4	Tame Valley
TA5	Former Primestock Building, Edge Lane and Fairfield Road / vacant land near Bridge Street, Droylsden
TA8	Denton Waste Water Treatment Works
TR5	Land at former Partington Gas Works, common Lane
TR12	Davyhulme Waste Water Treatment Works
TR13	Altrincham Waste Water Treatment Works
W1	Springfield and Miry Lane Employment Area
W2	South Lancashire Industrial Estate
W3	Chanters Industrial Estate, Hindsford
W5	Victoria Street, Leigh
W6	Prescott Street
W9	Lamberhead Industrial Estate, Pemberton
W10	Warrington Road Industrial Estate
W11	Coal Pit Lane, Platt Bridge
W13	Walthewhouse Lane
W14	Cemetery Road, Ince
W15	Platt Bridge Sewage Works
W16	Cale Lane
W17	Edge Green Colliery (Kelbits)
W18	Ince in Makerfield Waste Water Treatment Works
W19	Tyldesley Waste Water Treatment Works
W20	Land adjacent to Gibfield Park Avenue

- 4.43 In providing a flexible approach to waste management, the allocation of areas in the Waste Plan aims to supplement the allocation of sites and enable the Plan to respond to changing circumstances and accommodate new, unidentified waste management technologies. However, at present the likely

future number of new technology facilities, if any, is unknown. The discrete site within the area on which any potential waste management development will come forward is also unknown at this time. As a consequence, it is not possible to know which Flood Zone any new facility would be within. It has therefore not been possible to apply the Sequential Test to these areas as set out in PPS25.

- 4.44 Applications for built waste management facilities which come forward within an area allocation must therefore demonstrate that they are in accordance with the sequential approach to site selection as set out within PPS25. It has been demonstrated that the areas identified in the Waste Plan are the only areas suitable for waste management facilities within the Plan area. Therefore the sequential test need only consider the other areas contained within the Plan and the other sites in the particular area in which the application site is located. The sequential test carried out by an applicant should therefore direct development towards lower flood risk land within an area. The only land excluded from waste management development, as advised by PPS25, is land within Flood Zone 3b.

### Site Allocations for Extensions to Existing Landfill/Landraise

- 4.45 There is an identified need for non-hazardous residual waste disposal capacity in Greater Manchester. The publication version of the Waste Plan specifies that this need for non-hazardous residual waste disposal will be met through existing disposal sites until capacity is no longer available and, where acceptable, by allocating extensions to existing sites before identifying new sites for non-hazardous landfill.
- 4.46 As part of the preparation the Waste Plan a site search for potential non-hazardous residual waste disposal sites has been undertaken. However, this failed to identify any potential new sites. Consequently, the publication version of the Plan proposes to meet Greater Manchester's need for non-hazardous residual waste disposal by allocating three extensions to existing sites. These sites have capacity and the Waste Plan considers that they are the only deliverable and realistic options available.
- 4.47 In accordance with PPS25, the first stage of the Sequential Test is to identify the level of flood risk associated with each landfill/landraise site identified in the Waste Plan publication document. Figure 6 below contains the results of this analysis:

Figure 8: Landfill/Landraise Sites and Flood Risk

Site Reference	Site Name	Authority Area	Flood Risk Zone
BU11	Pilsworth North Quarry and Landfill	Bury	Flood Zone 1
BU12	Pilsworth South Quarry and Landfill	Bury	Flood Zone 1
W21	Whitehead Landfill	Wigan	Flood Zone 1

- 4.48 All three of the proposed extensions to existing landfill/landraise sites are located within Flood Zone 1 and are therefore considered to be at a low risk of flooding from rivers. Sites for landfill/landraise are considered to be a 'more vulnerable use' for the purposes of PPS25. More vulnerable developments

are deemed to be acceptable in Flood Zone 1 and, as such, the three identified sites are all considered to be appropriate for landfill/landraise based upon the level of flood risk posed. Nevertheless, PPS25 specifies that within each Flood Zone new development should be directed to the sites at the lowest probability of flooding.

- 4.49 There are limited options for the disposal of non-hazardous residual waste in Greater Manchester. This is largely due to the fact that the sub-region is a relatively densely populated urban area and it is therefore very difficult to find suitable sites for landfill/landraise which would not have an unacceptable impact on residential amenity or the environment. The site search exercise for potential non-hazardous residual waste disposal sites undertaken as part of the preparation of the Waste Plan failed to identify any potential new sites. Consequently, it is considered that there is a paucity of alternative sites, within Flood Zone 1 or otherwise, which are capable of meeting the sub-region's requirements for residual waste disposal.
- 4.50 In addition to the three proposed extensions to existing landfill/landraise sites included within the publication version of the Waste Plan, a further five residual waste disposal sites were nominated by industry. These are shown in Figure 9 below.

Figure 9: Sites for landfill/landraise nominated by industry during the plan preparation process but not included within the publication version of the Waste Plan

Area Reference	Area Name
RW23	Fletcher Bank
RW49	Highmoor Extension
RW60	Land off Coal Pit Lane
RW79	Land at Vickers Hall Lane
RW92	Offerton Sand and Gravel

- 4.51 The landowner and site operator of one of these five sites (RW49) has requested that the site be removed from further consideration for use as a residual waste disposal site. As such, this site is not considered to be readily available. In addition, another one of the sites (RW23) is an existing landfill site and there are no proposals to extend it. This site will therefore also be excluded from the Sequential Test as it would not contribute towards the additional capacity requirements that have been identified for Greater Manchester.
- 4.52 Two of the remaining sites (RW79 and RW92) fall partly within Flood Zones 2 and 3a. These sites are therefore at a greater risk of flooding than the three sites for landfill/landraise included within the publication version of the Waste Plan.
- 4.53 The remaining residual waste disposal site nominated by industry (RW60 - Land off Coal Pit Lane) is within Flood Zone 1. However, parts of this site have a medium to high susceptibility to surface water flooding and there is a range of sustainability considerations which has meant that the site is not considered to be suitable for residual waste disposal.
- 4.54 Consequently, it is considered that there are no reasonably available sites for residual waste disposal at a lower risk of flooding than the three sites identified for landfill/landraise in the publication version of the Waste Plan. These sites are therefore considered to pass the Sequential Test.

## 5. Conclusions

- 5.1 To provide a sound basis for the provision of waste management infrastructure in Greater Manchester, the Association of Greater Manchester Authorities are producing a joint Waste Development Plan Document for the sub-region.
- 5.2 PPS25 sets out the Government's policy on development and flood risk. It requires planning authorities to avoid inappropriate development in areas at risk of flooding by steering new development to areas of lowest risk. To ensure that this approach is embedded within the plan preparation process, PPS25 stipulates that planning authorities identifying land for development in their Local Development Documents, of which the Greater Manchester Waste Plan is one, should apply a Sequential Test to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed.
- 5.3 It is proposed to include 7 sites and 24 areas in the publication version of the Plan. This report has sought to examine whether these sites and areas are suitable locations for waste management facilities, based upon the level of flood risk present at each site, and whether there are any available sites at a lower risk of flooding that would be appropriate for the development proposed.
- 5.4 Five of the proposed sites for built waste management facilities are located entirely within Flood Zone 1 and are therefore considered to be at a low risk of flooding from rivers. The remaining two sites, Watersmeeting C South Triangle (BL9) and Land at Millstream Lane, Clayton Bridge (OL5), both contain land that falls within Zones 1, 2 and 3a. The Sequential Test has been applied to these two sites to establish whether the development could be directed to a site at a lower risk of flooding. This exercise focussed on the 35 sites that were identified as being potentially suitable for built waste development but not included within the publication version of the Plan. This exercise established that there are no reasonably available sites at a lower risk of flooding that would be appropriate to the type of development or land use proposed taking into account wider sustainability issues. As a result, the Sequential Test has been passed.
- 5.5 In relation to the areas, which are intended to provide additional choice to developers/investors, as the likely future number of new technology facilities, if any, is unknown at this time, and development is expected to come forward on discrete sites within the area allocations, it has not been possible to apply the sequential test to these areas. Instead applications for built waste management facilities which come forward within an area allocation must therefore demonstrate that they are in accordance with the sequential approach to site selection.
- 5.6 In relation to sites for landfill/landraise, all three of the proposed extensions to existing landfill/landraise sites contained within the publication version of the Plan are located within Flood Zone 1 and are therefore considered to be at a low risk of flooding from rivers. It has been demonstrated that there are no reasonably available sites for residual waste disposal at a lower risk of flooding than these three sites. As a result, the Sequential Test has been passed.