

Central and Eastern Berkshire Authorities

Joint Minerals and Waste Plan

Methodologies Report

June 2017
(Issues & Options)



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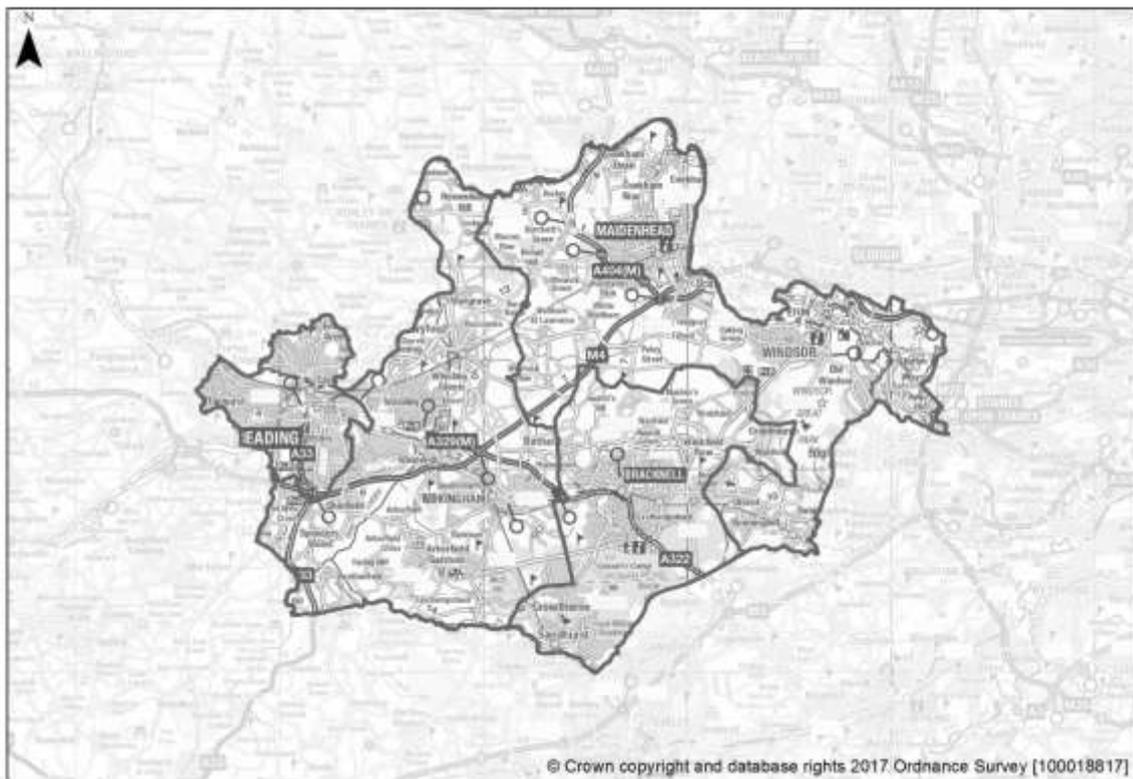
Prepared by Hampshire Services
Hampshire County Council
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1. Introduction

- 1.1 Bracknell Forest Council, Reading Borough Council, the Royal Borough of Windsor & Maidenhead, and Wokingham Borough Council (collectively referred to as 'Central & Eastern Berkshire Authorities') are working in partnership to produce a Joint Minerals & Waste Plan which will guide minerals and waste decision-making in the Plan area.
- 1.2 The Joint Minerals & Waste Plan will build upon the formerly adopted minerals and waste plans for the Berkshire area and improve, update and strengthen the policies and provide details of strategic sites that we propose will deliver the vision.
- 1.3 The Plan will cover the administrative areas of Bracknell Forest, Reading, Windsor & Maidenhead and Wokingham, all of which are minerals and waste planning authorities (see Figure 1).

Figure 1: Central & Eastern Berkshire Authorities administrative areas



Purpose of this Report

- 1.4 This Report has been produced to outline the proposed methodologies for the following assessments:
 - Industrial estates and employment land review;
 - Landscape and visual impact assessment; and
 - Strategic traffic and transport assessment.
- 1.5 This Report supports the 'Issues and Options' consultation of the Joint Minerals & Waste Plan and provides an opportunity for interested parties to comment on the proposed methodologies.
- 1.6 A separate report has been produced which outlines the overall sites assessment process and the criteria for site selection. The assessments outlined above, will help inform this process.

2. Industrial Estates & Employment Land Review Methodology

Industrial activities and waste management

- 2.1 Waste management needs are changing, and lots of waste management activities are considered suitable for industrial locations. This is as a result of technological advancements in dealing with waste but also due to improvements to mitigation techniques available to deal with potential impacts of waste management operations. This means that a greater range of waste management activities take place within enclosed and purpose designed buildings.
- 2.2 Many uses fall within the 'general industrial class' in the Use Class Order. It is important to remember that some of the best opportunities for driving waste management up the 'waste hierarchy' are likely to exist through on-site management of Commercial & Industrial (C&I), Construction & Demolition (C&D) and agricultural wastes.
- 2.3 Industrial estates and areas predominantly contain 'Class B' uses, these are uses defined under the [Town and Country Planning \(Use Classes\) Order 1987 \(as amended\)](#). The statutory instrument interprets Class B uses as industrial land - land used to carry out an industrial process. It is feasible that the built development which hosts these types of industrial operations could be adapted and modified to host waste management activities (subject to the necessary planning permission and licences). This is particularly relevant to Class B2 and Class B8.
- 2.4 The use class classification and the type of industrial development typically found on industrial estates and areas in Central & Eastern Berkshire Authorities are as follows:
- **Class B1 (Business)**
 - B1 (a): Office uses other than that which are used for financial and professional services (Class A2)
 - B1 (b): Business use for research and development of products or processes (e.g. laboratories or hi-tech businesses)
 - B1 (c): Light industrial Processes (industrial processes with no impact on local amenity)
 - **Class B2 (General Industrial)**
 - Industrial uses being carried out which do not fall within Class B1 may fall into this category
 - **Class B8 (Storage and Distribution)**
 - Use for storage or as a distribution centre (e.g. Warehousing)

Types of waste management facilities located in industrial areas

Definition of 'industrial areas'

- 2.5 To avoid confusion, the study will consider a range of different types of industrial estates and employment sites under the definition of 'industrial areas'. This collective term will consider all land types including large industrial estates as well as business parks; trading estates; and smaller employment land uses, all of which could potentially be suitable for waste uses. The key consideration is that this study will focus on established industrial area (regardless of whether they are termed industrial estates or parks).
- 2.6 Industrial areas are typically characterised by their proximity to transport networks and distance from sensitive receptors, notably residential areas. These can be occupied by a range of businesses, such as those within storage, haulage and vehicle repair. These industrial areas are typically characterised in planning policy terms as 'employment land'. This is land allocated for business, general industrial and storage / distribution uses defined by Use Classes B1, B2 & B8. If permitted therefore, this land could generally be developed for any type of employment use with no distinction being made between general industrial uses, warehousing and commerce.
- 2.7 A range of different waste management facility types can be accommodated in industrial areas and examples of these are described in Appendix 1.
- 2.8 Industrial estates can often be appropriate locations for waste management development, particularly for smaller enclosed development and waste transfer stations. However the waste management activities listed in Appendix 1 will not necessarily be suitable for every industrial area. For example, some open-air uses such as storage may not be appropriate on industrial estates close to residential areas due to potential amenity issues.
- 2.9 Many industrial areas will be allocated for employment uses in Local Plan. However, allocations may be restricted to particular types of employment uses such as manufacturing development. This is another factor that may limit the support for industrial-type waste management development that could potentially be provided by some industrial areas.

Co-location

- 2.10 Minerals and waste operations often demonstrate the potential for the co-location of complementary activities. Minerals and/or waste facilities, together and alongside other activities can develop 'symbiotic' relationships that use residues, recyclables, heat or other by-products instead of primary resources;

use shared infrastructure; and reduce transport and primary resource costs. Examples of potential co-location include co-locating and energy from waste incinerator and an industrial unit heated by waste heat from the boiler. Minerals and waste developments can contribute to increasing resource recovery and efficiency therefore, due to the co-location of compatible minerals and waste facilities, and also with supporting reprocessing, manufacturing or industrial uses.

Methodology for identifying and assessing suitable industrial areas

Information gathering

- 2.9 This will involve a systematic desk based assessment of employment land and industrial estates in Central & Eastern Berkshire. This will be conducted by using existing employment land review information, land supply data and pre-existing strategic planning policy information & up to date evidence base from the Central & Eastern Berkshire Authorities. Information will also be sourced from the relevant Local Enterprise Partnerships (LEPs) to gather intelligence on opportunity sites and large scale employment land development proposals.

Identifying industrial areas in Central & Eastern Berkshire

- 2.10 Outlined below is a simplified description of how the industrial areas will be identified for further investigation:
- A: Identify and verify all areas identified by the various sources mentioned above as suitable for further examination;
 - B: Undertake site visits for all areas identified in step A;
 - C: Rule out business parks deemed unlikely to be suitable following site visits;
 - D: Undertake suitability assessments of remaining areas.

Business Parks

- 2.11 Normally waste activities are not considered compatible with high value business parks and trade parks (incorporating trade retail units). These types of industrial areas may well be considered as part of the initial assessment of industrial areas however it is likely that they will need to be ruled out of consideration as part of this process. It is likely that the majority of these types of site will be ruled out of this process because they are unlikely to be suitable based on:
- Site is occupied predominantly by offices / prestige office (potential conflict of use);
 - Site is relatively small;

- Site is unlikely to accommodate large vehicles;
- Site frequented by members of the public (to access trade counters etc.)

2.12 Business parks and trade parks that are ruled out after an initial assessment and site visit will not be surveyed further for the purposes of the study.

Detailed Assessments of the Suitability of Industrial Areas for Waste Management in Central & Eastern Berkshire

2.13 Suitable previously developed land, including industrial land, provides opportunities for new waste facilities, but may also be suitable for other development. Employment Land Reviews and Strategic Housing Land Availability Assessments offer a useful source of information of potential land use conflicts and these will need to also be considered when assessing industrial areas in Central & Eastern Berkshire.

2.14 Each of the industrial areas that are deemed suitable for further examination will require a site visit. Each site will be subject to systematic testing using a set of defined criteria (See Table 1). The findings of each site visit will be recorded and a 'Detailed assessment of the suitability of an industrial area for waste management uses' will be made.

2.15 In testing the suitability of sites and areas, the assessment will often depend on the envisaged waste management facility on the site in terms of type and scale. As it is not possible at this stage to speculate on the type of facility that could be located in an existing industrial area the detailed assessment stage is intended to provide a theoretical guide to which areas could offer potential.

2.16 The criteria that will be used for these detailed assessments is largely derived from national planning policy and where appropriate by locally specified criteria. The detailed assessment stage includes an assessment of the physical and environmental constraints on development (including existing and proposed neighbouring land uses). The main source of this information will be site visits by officers and Geographic Information Systems (GIS) analysis of data.

2.17 The criteria provide a framework for considering the planning issues which may restrict the ability to locate waste uses on industrial areas in principle. Industrial areas which have a number of identifiable constraints will be less likely to be considered as 'potentially suitable' for waste uses.

2.18 The criteria that will most likely rule sites out as 'potentially suitable' for waste uses will be traffic and access; proximity to sensitive human and environmental receptors; and potential land use conflict. Whilst it is likely that many of the planning issues which arise throughout this assessment could potentially be

addressed through design and mitigation associated with a development proposal, the aim of the assessment process at this early stage is to highlight those industrial areas which are less constrained.

'Potentially suitable' – Indicates that despite some identified constraints, the industrial area could feasibly accommodate waste management uses.

'Unlikely to be suitable' – Indicates that due to some major constraint(s), it is unlikely that waste management facilities could feasibly be accommodated.

2.19 The assessment criteria shown in Table 1 have been adapted slightly for the purposes of the study. A number of criteria may be scoped out due to the fact that they are not relevant at this level of study¹. Criteria referring to the impacts associated with waste operations including for example, noise, odour and litter have been scoped out, because the type of technology which could potentially be used in industrial areas is not identified at this level of study.

2.20 However, since the criteria which have been scoped out are associated with the potential impacts on both environmental and public health, a new 'proxy' criterion has been developed to address this. This considers the proximity of the industrial area being investigated to sensitive human and environmental receptors such as housing, schools, hospitals, allotments, care homes etc.

2.21 The potential for the co-location of waste management facilities is also to be included within the environmental and amenity criteria, as this may help to reduce the possible impact created by vehicle movements. Other issues will also be addressed such as the potential impact on rights of way.

2.22 Sites and areas should be assessed for the **cumulative effect** of previous waste facilities on the well-being of the local community, including any significant adverse impacts on environmental quality, social cohesion and inclusion or economic potential. The capacity of existing transport infrastructure (including modes other than road transport) to support the sustainable movement of waste should also be considered. These factors were also considered when undertaking the detailed assessment of potential areas.

2.23 As well as the wider environmental issues, wider economic issues with regards to waste should also be considered when planning for sustainable waste management. Waste management facilities provide opportunities for employment of the local labour pool within the surrounding communities. The number of employees that can potentially be employed by a waste

¹ 'Land instability' as a criterion has been 'scoped out'. Areas liable to be affected by land instability are not normally suitable for waste uses.

management facility depends on the type of waste development being considered (which is not determined in this study).

Table 1: Environmental and amenity criteria to be considered when assessing the suitability of industrial areas for waste management activities (for use during site visit)

Location	
Current use (specify class classification)	
Comments	
Assessment criteria	Comments
Protection of water resources	
Visual intrusion	
Nature conservation	
Historic environment and built heritage	
Traffic and access	
Proximity to sensitive human and environmental receptors	
Proximity to aerodrome safeguarding areas	
Potential land use conflict	
Opportunity for co-location	
Other issues (e.g. public rights of way)	
Outcome from assessment:	

3. Landscape & Visual Impact Assessment Methodology

Introduction

- 3.1 This draft report has been produced to give an overview of the intended methodology and site assessment process that will be used to carry out Landscape and Visual Impact Assessments, to inform potential site allocations in the *Central and Eastern Berkshire Joint Minerals and Waste Plan (JMWP)*, and as such will act as supporting documentation, to the JMWP development.
- 3.2 The objective of the study will be to carry out an assessment of the likely landscape capacity of each of the suggested sites to accommodate mineral and waste development, without significant detriment to its character or that of its larger character area, taking into account current practices of mitigation and restoration.
- 3.3 It is considered that landscape impacts will be one of the assessment criteria that form part of the suite of evidence studies for the *JMWP*, to examine the suitability of sites and areas nominated for minerals and waste development. The analysis will aim to identify landscape constraints and sensitivities in a broad sense, which would lead to identifying which sites may or may not be deemed suitable locations for development.
- 3.4 The study will set out to assess in detail the residual landscape impacts of the proposed developments on their locations.

Study Aim

- 3.5 The aims of the study will be to:
- Assess the landscape character and visual impact capacity of each of the proposed minerals and waste development sites.
 - Consider the extent to which the proposals could be implemented without significant impact on the areas character or setting, taking into account current design practices and mitigations measures.
 - Inform, test and review the development criteria produced for the proposed minerals (and waste) sites *in the proposed Central and Eastern Berkshire Joint Minerals and Waste Plan*.

Policy Context

National

3.6 The National Planning Policy Framework ² contains the following policies of particular relevance to Landscape:

- Chapter 9: Protecting Green Belt Land ³
- Chapter 11: Conserving and Enhancing the Natural Environment⁴.

Local

3.7 The proposed JMWP, covers four Unitary Authority Areas:

- Bracknell Forest Council
- Reading Borough Council
- Royal Borough of Windsor and Maidenhead
- Wokingham Borough Council

3.8 The emerging Comprehensive Local Plan, for Bracknell Forest Council⁵, is expected to have policies relating to, amongst other issues:

- development within the green belt
- development within the countryside

3.9 The Bracknell Forest Council Saved Local Plan Policies brought forward from the 2002 Local Plan include:

- En1: Protecting tree and hedgerow cover
- En2: Supplementing tree and hedgerow cover
- En8: Development on Land outside settlements
- En10: Areas of landscape importance, including the Blackwater Valley, Windsor Great Park, Cabbage Hill and Land south of Forest Road, West of Chaveydown Road and south west of Warfield Park.
- En12: Historic Parks and Gardens

3.10 The Bracknell Forest Core Strategy adopted in February 2008:

- Policy CS1: Sustainable development principles, includes the following relevant policies
 - i) Makes efficient use of land, buildings and infrastructure

² <https://www.gov.uk/guidance/national-planning-policy-framework>

³ <https://www.gov.uk/guidance/national-planning-policy-framework/9-protecting-green-belt-land>

⁴ <https://www.gov.uk/guidance/national-planning-policy-framework/11-conserving-and-enhancing-the-natural-environment>

⁵ <http://www.bracknell-forest.gov.uk/comprehensivelocalplan>

And it Protects and enhances the following

vii) the quality of natural resources including water, air, land, buildings and infrastructure.

viii) the character and quality of local landscape and wider countryside

3.11 The Reading Borough Council boundary is drawn tightly around the existing urban boundaries, therefore no reference is made to protection of the countryside or direct reference to Landscape character or quality.

3.12 The Reading Borough Council Core Strategy adopted January 2008 with alterations adopted in January 2015 contains the following environmental policies:

- Policy CS33 Protection and enhancement of the Historic Environment, requires listed buildings, Conservation Areas and Historic Parks and Gardens to be protected and where appropriate enhanced.
- Policy CS37 Major Landscape Features and Strategic Open Space: Planning permission will not be granted in the Thames Valley, The Kennet and Holybrook Meadows, The west Reading Wooded Ridgelines, The east Reading Wooded Ridgelines, and the north Reading Dry Valleys, if development would detract from the character and appearance of these designated areas.
- Policy CS38: Trees, hedges and Woodlands; will be protected from damage and removal.

3.13 Reference may need to be made to the Chilterns Area of Outstanding Natural Beauty (Policy SA17, of current Local Plan, on north west border of Unitary Authority boundary).

3.14 The Royal Borough of Windsor and Maidenhead do not have a new Local Plan and therefore, currently have saved policies. All the land outside the large settlements is covered by the Metropolitan Green Belt Designation. The following saved local plan policies are relevant to this plan;

- Policy GB1: Within the Green Belt, as defined on the proposals map, approval will only be given, save in very special circumstances. This policy does not preclude the possibility of engineering, other operations and material changes in the use of the land as long as the openness of the land is maintained. If the land is subject to extraction and restoration, this procedure will be carried out to the highest standard and the after use is appropriate to the Green Belt.
- Policy N1: Areas of Special Landscape Importance. Development will not be permitted in these areas if they detract from the special qualities

of that landscape and adversely affect formal landscape features and their setting. There are two designated areas

- 1) Cookham, Bisham, Hurley; this area is where the River Thames cuts through the southern extension of the Chilterns
 - 2) Home Park, Windsor Great Park and Windsor Forest; this area is a southerly extension from Windsor and Windsor Castle which extends across the boundary into Bracknell Forest Council's administrative area.
- Policy N2: The Borough will conserve and enhance the setting of The Thames as defined on the proposals maps, to ensure that no development will adversely affect the character and setting of the river.
 - Policy N3: Landscape Enhancement; The borough Council will seek appropriate landscape enhancement including the creation or restoration of landscape features. Tree planting, positive land management and the protection and creation / restoration of wildlife habitats will be required.
 - Policy N6: Tree Surveys and detailed Planting replacement plans will be required as part of an application for new development.
 - Policy N7: Retention of Hedgerows and important boundary features. Replacement hedgerows will be required if they are lost to development.

3.15 The Wokingham Borough Council Local development Strategy, Core Strategy, Adopted January 2010 contains the following relevant policies:

- **Policy CP1:** Sustainable Development
Planning permission will be granted for development proposals that:
1) Maintain or enhance the high quality of the environment;
- **Policy CP3** - General Principles for development Planning permission will be granted for proposals that:
a) Are of an appropriate scale of activity, mass, layout, built form, height, materials and character to the area together with a high quality of design without detriment to the amenities of adjoining land users including open spaces or occupiers and their quality of life;
c) Have no detrimental impact upon important ecological, heritage, landscape (including river valleys) or geological features or water courses.
- The text relating to Policy CP3 states: "*Proposals should also take account of the results of the Council's Landscape Character Assessment and the vegetation in the area. Areas that are important to the Borough's landscape include Areas of Special Landscape Importance and Sites of Urban Landscape Value.*"
- **Policy CP12** - Green Belt
Planning permission will not be granted for inappropriate development within the Metropolitan Green Belt as defined in PPG2.

The Metropolitan Green Belt in the borough as illustrated on the key diagram comprises the land north and east of Twyford but excluding Wargrave. It also includes the land in the parish of St. Nicholas Hurst east of The Straight Mile and north of Carter's Hill.

3.16 Wokingham Borough Council Development Plan, Adopted Feb 2014 contains the following relevant policies:

- **Policy CC01 – Presumption in Favour of Sustainable Development**
 1. Planning applications that accord with the policies in the Development Plan for Wokingham Borough will be approved without delay,
- **Policy CC03: Green Infrastructure, Trees and Landscaping**
 1. Green Routes and Green Route Enhancement Areas are defined on the Policies Map.
 2. Development proposals should demonstrate how they have considered and achieved the following criteria within scheme proposals:
 - a) Provide new or protect and enhance the Borough's Green Infrastructure networks, including the need to mitigate potential impacts of new development
 - b) Promote accessibility, linkages and permeability between and within existing green corridors including public rights of way such as footpaths, cycleways and bridleways
 - c) Promote the integration of the scheme with any adjoining public open space or countryside
 - d) Protect and retain existing trees, hedges and other landscape features
 - e) Incorporate high quality, ideally, native planting and landscaping as an integral part of the scheme.
 3. Development proposals which would result in the loss, fragmentation or isolation of areas of green infrastructure will not be acceptable.
 4. Development proposals within the River Valley areas shall improve or contribute toward
- **Policy TB01: Development within the Green Belt**
 1. The Green Belt is defined on the Policies Map.
 2. Within the Green Belt, development for the purposes set out in paragraphs 89 and 90 of the National Planning Policy Framework and as set out in point 3 below will only be permitted where they maintain the openness of, and do not conflict with the purposes of including land in, the Green Belt.
- **Policy TB21: Landscape Character**
 1. Proposals must demonstrate how they have addressed the requirements of the Council's Landscape Character Assessment,

including the landscape quality; landscape strategy; landscape sensitivity and key issues.

2. Proposals shall retain or enhance the condition, character and features that contribute to the landscape.

- **Policy TB22: Sites of Urban Landscape Value**

1. Sites of Urban Landscape Value are defined on the Policies Map.

2. Planning Permission will only be granted for development proposals within or affecting Sites of Urban Landscape Value where they demonstrate that they;

a. Retain and enhance the special landscape features and qualities that make the site valuable to the character, townscape and urban form

b. Minimise the visual impact of the development site on the Sites of Urban Landscape Value

c. Protect, manage and enhance the sites' capacity for informal recreation

- **Policy TB23: Biodiversity and Development**

1. Sites of national or international importance are shown and sites of local importance are defined on the Policies Map.

2. Planning permission for development proposals will only be granted where they comply with policy CP7 – Biodiversity of the Core Strategy and also demonstrate how they:

a) Provide opportunities, including through design, layout and landscaping to incorporate new biodiversity features or enhance existing

b) Provide appropriate buffer zones between development proposals and designated sites as well as habitats and species of principal importance for nature conservation

c) Ensure that all existing and new developments are ecologically permeable through the protection of existing and the provision of new continuous wildlife corridors, which shall be integrated and linked to the wider green infrastructure network.

Landscape Character Assessments

3.17 The **Bracknell Forest Borough Landscape Character Assessment**, prepared by LUC, September 2015, for Bracknell Forest Borough Council, was used as part of the evidence base in the preparation of the Bracknell Forest Comprehensive Local Plan, (Ref CLP/EV/5a) along with the Bracknell Forest Landscape Recommendations Report, also prepared by LUC, September 2015 (Ref CLP/EV/5b). This Assessment will be used as the primary source of reference for landscape character and sensitivity, in this assessment⁶.

⁶<http://www.bracknell-forest.gov.uk/evidencebaseforcomprehensivelocalplan>

Bracknell Forest & Wokingham Joint Green Belt Review (AMEC) June 2016 (CPL/Ev/5c), has assessed the potential for development within individual parcels of land in the Green Belt, against the five purposes set for its designation in national policy, these include: “*to assist in safeguarding the countryside from encroachment*”.

- 3.18 There is no apparent Landscape Character Assessment for the Borough of Reading, because the boundary of the Borough is tightly drawn around the existing urban area, therefore the **National Landscape Character Designations** will be referenced.
- 3.19 **Windsor and Maidenhead Landscape Character Assessment Report**, prepared by Landscape Design Associates (LDA), September 2014. This report identified that “*The sand and gravel of the Thames valley floodplain is one of the Royal Borough's primary resources. However, many areas are already worked-out or effectively sterilised by development. In the past some use has been made of other formations and lithology's, and clays are now in demand for the lining and sealing of landfill sites to protect aquifers and rivers from leachate pollution. Chalk and clay, though locally exploited in the past, are not considered to be major mineral resources in the borough now. There has been renewed interest in the area for hydrocarbon exploitation, including the Windsor structure in particular.*”
- 3.20 The rich alluvial deposits found within the floodplain primarily comprise of silt and clay with seams of sand and gravel. These seams have been commercially extracted in many locations, particularly within the locality of Wrasbury in the south east of the borough. This has left a legacy of man-made waterfilled pits and reservoirs which are now primarily used for recreational reasons, as marinas, water sport centres or informal nature reserves. The principal areas of active mineral working within the borough are found north of Maidenhead, around Bray and within the Horton/Wrasbury area.
- 3.21 **Wokingham Landscape Character Assessment**, prepared by LUC 2004. This document identified the main areas that are subject to Mineral Extraction are within Landscape type A; River Valleys, including the River Thames, Lodden and Blackwater Valley. The landscape character within these areas has been impacted as result of sand and gravel extraction and the document identifies that this is likely to continue. At Knowle Hill there is the Star Brick and Tile Works.
- 3.22 Landscape and Visual Impact Assessments will be produced in accordance with the methodology described in **Guidelines for Landscape and Visual Impact Assessment Third Edition** (GLVIA3) produced by Landscape Institute and Institute for Environmental Management & Assessment, published 2013.

Methodology for Site Assessments

Desk Study

3.23 A desktop survey will include a review of the following existing information for each of the sites identified (this will be dependent on the initial screening of sites):

- National Planning Policy Framework and other Central Government Guidance
- Relevant Local Planning Policy and Proposals maps, for , *Bracknell Forest Council, Reading Borough Council, Royal Borough of Windsor and Maidenhead, and Wokingham Borough Council*;
- Ordnance Survey maps including Historic OS mapping;
- Aerial photographs of the site and surrounding area;
- The relevant Unitary Authority Data sets of heritage features and environmental designations;
- Unitary Authority designations including Tree Protection Orders and 'important' hedgerows as defined under the hedgerows designation.
- National, County and District scale Character Assessments; and
- Magic (DEFRA) and Natural England Data sets.

Field Study

3.24 Character and visual sensitivity assessments should be made for each of the sites identified by Hampshire County Council Landscape Officers from the Environmental Initiatives Team. Each site will be assessed from publically accessible locations. Character and Visual assessments will be undertaken and receptors identified in the field. Results for each site will be recorded on survey forms.

3.25 Limitations and assumptions of the studies can be summarised as follows: Distances of view points will be approximated from the centre of the site; where no direct view of the site is available, direction may have to be estimated; visibility from individual private buildings or land has not been checked as part of the LVIA fieldwork. Where important, views from private buildings will be estimated from within the site; seasonal limitation provided by leaf cover dictates that winter visibility is estimated.

Data Analysis and Presentation of Results

3.26 The sites will be assessed in the field to give a categorisation (**high, medium, low or negligible**) for each site's **landscape character sensitivity, visual sensitivity** and **landscape value**. These will be used to assess the site's

capacity to accommodate the proposed use, which will be described as: **Large adverse; Moderate adverse; Slight adverse; Neutral, or; Slight Positive.**

- 3.27 If the development on a particular site varies significantly from the information provided or the development and mitigation is designed poorly without adequate reference to landscape characters and views, the impact of the site is likely to be greater than indicated in this assessment.
- 3.28 Proper design and implementation is essential to the delivery of any proposal.

Mitigation and restoration

- 3.29 Where possible ideas for mitigation and restoration are included in the assessment for each site in the form of a brief text. Where tree planting is proposed to screen a proposed site, this would need to be established a few years prior to the commencement of works for it to be effective. It will also need to be managed to ensure it establishes quickly and is maintained as a dense screen.
- 3.30 Further detailed work (including a Landscape and Visual Impact Assessment (LVIA)) would be undertaken as part of any future planning application.

Landscape Character

- 3.31 The study of landscape character has formalised the components of character into themes of physical, experiential, biodiversity, historic environment and visibility. Analysis will be made of their significance (which is a combination of the landscapes sensitivity and susceptibility to change and the value of the landscape receptor), robustness and where possible condition. The study will go on to analyse the effect on the proposed sites of mineral extraction, waste or recycling activities (MW&R) on each component and how this in turn affects the landscape character. The reporting scale will be in accordance with local District or Borough Council Landscape Types or where such reports do not exist at National Character area.
- 3.32 The proposed approach draws on the guidance set out in 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA) Third Edition 2013. Topic Paper published by the Countryside Agency in 2014.
- 3.33 The key analysis and background documents will include:
- National Character Area Profiles – September 2014
 - Wokingham Borough Landscape Character Assessment (LUC), 2004
 - Bracknell Forest Borough Landscape Character Assessment ,(LUC), September 2015

- Bracknell Forest Green Belt Review - 2015
- Bracknell Forest & Wokingham Joint Green Belt Review (AMEC) June 2016.
- Windsor and Maidenhead Landscape Character Assessment Report, September (LDA), September 2014

Defining threshold criteria sensitivity levels

3.34 The following five point reporting scale will be used to make the assessment.

Character Sensitivity – Landscape Character criteria used to determine the magnitude of change (operation and restoration potential considered)

Summary of effect	Criteria	MW&R Scale
Large adverse	<p>The proposed site is very damaging to the landscape in that:</p> <ul style="list-style-type: none"> • It is at considerable variance with the landform, scale and pattern of the landscape • The Landscape may be designated at national level • It is likely to degrade, diminish, or even destroy the integrity of a range of characteristic features and elements and their setting • It will be substantially damaging to a high quality or highly vulnerable landscape, causing it to change and be considerably diminished in quality. Likely to be in a highly inherent sensitive landscape • It can not be adequately mitigated • It is in serious conflict with government policy to respect and enhance landscape character • the cumulative operations of other proposed sites results in an unacceptable loss or detriment to character • it is adverse to several key issues/priorities or strategies for the LCA 	Red
Moderate adverse	<p>The proposed site is out of scale with the landscape, or at odds with the local pattern and landform.</p> <ul style="list-style-type: none"> • It is probably not possible to fully mitigate for/mitigation will not prevent the scheme from scarring the landscape in the longer term, as some features of interest will be partly destroyed or their setting reduced or removed. Likely to be in a medium high or highly inherent sensitive landscape. • The landscape may be designated at a local level 	Orange/Amber

	<p>or have significant historic associations</p> <ul style="list-style-type: none"> • It is in conflict with national and local policy to respect and enhance landscape character across a wide range of character themes. • The potential cumulative operations of other proposed sites results in an unacceptable loss or detriment to character, unless sequential operating restrictions must be enforced. • Adverse to a few (at least 2) of the key issues/priorities or strategies for the LCA. 	
Slight adverse	<p>The site does not quite fit the land form and scale of the landscape.</p> <ul style="list-style-type: none"> • The proposals can probably not be completely mitigated for because of the nature of the proposal itself or the character of the landscape it is in. Likely to be in a medium or higher inherent sensitivity landscape. • In conflict with national and local policy to respect and enhance character across a few character themes. • There is a slight potential of cumulative operations of other proposed sites resulting in loss or detriment to character, sequential operating restrictions may need to be enforced. • It is at variance with some aspects of the LCA. 	Yellow
Neutral effect	<p>The proposal is likely to be able to complement and fit the scale, landform and pattern of the landscape.</p> <ul style="list-style-type: none"> • Mitigation measures are likely to ensure the scheme will blend in well with surrounding landscape character components • Will probably maintain existing landscape character with specific planning conditions and be of a medium to low inherent sensitivity. • Likely to be in a degraded landscape or one with a restoration objectives (identified in unitary authority assessments). • Likely to be isolated or small site with minimal cumulative effect from neighbouring operations. 	Light green
Slight beneficial	<p>The proposal will probably fit well in the landform, pattern and historical use of the area.</p> <ul style="list-style-type: none"> • By incorporating measures for mitigations it will ensure that landscape character is enhanced and improved, such as habitat creation, restoration of previously degraded landscape. Likely to be medium low or of low inherent sensitivity • Could incorporate national and local policy to enhance landscape character • Likely to be isolated or small site with no likely cumulative effect from neighbouring operations. 	Dark Green

3.35 The following sensitivity analysis will be applied:

Generic sensitivity analysis of components of landscape character from MW&R activities

Character theme/ Proposed activity	Landscape character components with least tolerance to MW&R activities	Landscape character components with most tolerance to MW&R activities
Physical		
Soils (Waste and minerals extraction)	Associated with high grade agricultural, or types that are difficult to restore/recreate the profiles of. One which are supporting a high capacity of one or several functions; including biodiversity, food/biomass production, water/hydrological influence.	Previously extracted areas, type that are relatively easy to recreate soil profiles, existing contaminated soils. Ones which are supporting a function which is at odds with the most suitable function(s).
Landcover	Landcover patterns which are already fragmented, intricate small scale, older stand types. Very complex landform/landcover (difficult to replicate).	Large extensive tracts of single landcover type that are at odds with the management objectives, simple/limited composition which is relatively young/immature or types which are fast growing/shorter time to reach climax vegetation.
Landform	Flat (especially land raising, landfill sites), high and prominent landform, short landcover type. Widespread exploitation. Ones which are rich in desirable mineral resources. Landforms with naturally distinct profiles, river valleys and dip and scarp slope systems.	Landscapes with existing man made landforms. Landscape with lake/pond systems (extraction sites)
Experiential		
Tranquillity	Remote, rural, inherently quiet, landscapes. Dark night skies.	Disturbed landscape by other man made influences. Non tranquil areas.
Access	Sites with long operation periods in areas with plenty of existing access facilities/type. Severance and fragmentation of routes and access opportunities during operation.	Sites with short operation time-spans. Restoration criteria can bring increased availability of access opportunities, therefore reducing sensitivity to MRS operations.
Biodiversity		
	Habitats which are difficult to restore. Older more ancient habitats.	Habitats and plant communities which can be recreated rapidly.

Historic Environment		
Historic Landscape Characterisation (HLC)	Older more complex landscapes or remnant individual types or assemblages that are rare survivals. Designed parklands.	Historic landscape patterns which can most easily be restored e.g. young, small, non-treed hedgerow field boundaries.
Archaeology	Considered irreplaceable, finite or not possible to recreate in true sense.	
Built Environment	Considered as irreplaceable, finite or not possible to recreate in true sense. Indirect effect of works traffic on settlements.	

3.36 **Visual Sensitivity** The criteria used to determine the visual receptors (people viewing the MW&R site) sensitivity to change in view and visual amenity is mainly a function of:

- The occupation or activity of people experiencing the view at particular locations; and
- The extent to which their attention or interest may be focused on the views and the visual amenities.

3.37 Judging the overall sensitivity of a visual receptor will be a combination of assessing the sensitivity of each receptor and the magnitude for each effect. Sensitivity and magnitude can then be combined to assess the overall significance.

Sensitivity of the location or receptors

Criteria for receptors	Visual sensitivity of receptors
<ul style="list-style-type: none"> • Residents at home • People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focused on the landscape and particular views • Visitors to heritage assets, or to other attractions, where the surroundings are an important contributor to the experience; • Communities where views contribute to the landscape setting enjoyed by residents in the area • Little or no natural screening. 	High
<ul style="list-style-type: none"> • Users of public rights of way, accessible landscape and visitor attractions, wildlife designations and historic features on county lists, national registers and/or of international significance that are not focussed directly upon the landscape, but the site is considered to fall within its setting. • Receptors with 'mid views' of sites • People travelling through or past the proposed sites in cars and trains and other modes of rapid transport. Work places with a 	Medium

<ul style="list-style-type: none"> • 'near view or the site; • Limited natural screening. 	
<ul style="list-style-type: none"> • People engaged in outdoor recreation or sport which does not involve or depend on the appreciation of views of the landscape • People travelling through or past the proposed sites in cars and trains and other modes of rapid transport. Residential or commercial premises with an indirect view/partial existing screening of the site, no nearer than 'mid view'. 	Low
<ul style="list-style-type: none"> • People at their place of work, recreational users, residential, industrial or commercial premises whose view of the proposed improvements is no nearer than a 'distant view' and/or the site is heavily screened. 	Negligible

Magnitude of visual effects

3.38 Each of the visual effects identified needs to be evaluated in terms of size or scale, and geographical extent of the area influenced and its duration and reversibility. Visibility of receptors is directly related to distance from a site. A professional judgement has to be made as to when the site becomes less prominent. Seasonal variations of leaf cover should be taken into account in the assessment.

3.39 Zone of Theoretical Visual Influence (ZTV's) should be reserved for sites with particularly sensitive receptors.

3.40 Judging the magnitude of size and scale includes;

- the scale of the change in the view with respect to the loss or addition of features in the view and changes to its composition, including the proportion of the view occupied by the proposed development;
- the degree of changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale, mass, line, height, colour and texture;
- the nature of the view of the development, in terms of the relative amount of time over which it will be experienced and whether views will be full or partial or glimpses.

3.41 The geographical extent of a view will vary from each location depending on;

- the angle of the view
- the distance from the view
- and the extent of the area visible

3.42 Mineral extraction sites are by their nature temporary developments. However the restoration however extensive is unlikely to return the landscape to the

exact nature and character found prior to works starting on the site. GLVIA describes the duration of landscape effects on the following basis;

- Short term – one to five years;
- Medium term five to ten years
- Long term ten to twenty five years

Visual sensitivity (criteria used to determine the magnitude of change)

Summary of effect	Criteria	MW&R Scale
Large adverse	High receptor sensitivity. The project, or a part of it would become the dominant feature or focal point of the view.	Red
Moderate adverse	Medium Receptor sensitivity The proposed development occupies much of the view and may even obstruct a portion/view of the landscape	Orange/Amber
Slight adverse	Low receptor sensitivity The site or part of it would be visible but not alter the overall balance of features and elements that comprise the existing view.	Yellow
Neutral effect	Negligible receptor sensitivity Only a very small part of the site would be discernible, or it is such a distance that it would be barely noticeable feature or element in the view	Light Green
Slight positive	No sites are considered to be in this category? No part of the project or activity associated with the site is discernible	Dark Green

Proposed Assessment Structures

3.43 The sites assessed will be listed in the following order:

- By Unitary Authority
- By type of development:
 - Minerals Extraction Extensions
 - Minerals Extraction Proposed New Sites
 - Waste Extension Sites
 - Waste Proposed New Sites

3.44 The Format of Individual Site Assessments will be set out as follows:

- Site: *Name*
- Location/description: Address
- Landscape Character
- Landscape Type
- Key characteristics (of the whole character area)
- Impact on key characteristics

- Condition
- Landscape sensitivity to proposal
- Visual impact
- Mitigation measures and restoration

Cumulative Assessments

Cumulative Impact Assessment will need to be undertaken for all sites as part of any future planning application.

Proposed Assessment Summary

This section will provide an overview of the likely impact on landscape and visual character of each of the proposed sites and sets out what mitigation measures could be put in place to offset these impacts.

Assessment and mitigation summary proposed format

Site name	Impact on landscape character	Visual impact	Mitigation measures
	Neutral	Neutral	
	Slight	Slight	
	Moderate	Moderate	
	Large	Large	

4. Strategic Traffic & Transport Assessment Methodology

Introduction

- 4.1 This section has been produced to give an overview of the intended methodology and site assessment process that will be used to carry out a Strategic Transport Assessment (STA), to inform potential site allocations in the *Central and Eastern Berkshire - Joint Minerals and Waste Plan (JMWP)*.
- 4.2 Due to their bulky nature and relatively low value, minerals and waste materials are predominantly transported using Heavy Goods Vehicles (HGVs) along both local and strategic road networks. Despite the impacts that this form of transport may have, especially in the case of mineral workings in remote locations, it is recognised that finding suitable alternatives to road transport is often not possible or viable. Impacts arising from the transport of minerals and waste materials by road can, if not controlled, have a significant impact on the environment and on communities including those not in the immediate vicinity of the development. Impacts such as noise, dust, vibration, traffic congestion and vehicle CO₂ emissions can all arise from transportation, and as such, the minimisation and management of them are a key priority of the JMWP.
- 4.3 Transport impacts will thus be one of the assessment criteria to form part of the suite of evidence studies for the JMWP and specifically to examine the suitability of sites and areas nominated for minerals and waste development.
- 4.4 The assessment of the transport implications will be undertaken at a number of stages in the preparation of the JMWP:
- as part of the initial evidence base in terms of issues and opportunities
 - as part of the options testing
 - as part of the preparation of the final submission
- 4.5 Like a sustainability appraisal, it will be an iterative process and become more refined and detailed as the process draws to a conclusion and the final STA document will provide a compilation of the outcomes of each of the above stages of assessments, with particular emphasis on establishing the transport constraints and sensitive receptors, which would lead to identifying which sites may or may not be deemed suitable locations for development. However, the STA will not assess in detail the residual transport impacts of the proposed sites as it is expected that individual Transport Assessment or Statement will be developed as part of any subsequent planning application for the sites, which will explore in detail the acceptability of routing to the site, and the impact(s) on the surrounding transport networks.

Study Aim

- 4.6 The purpose of the STA is to support the development of the JMWP by:
- Reviewing the national and local policy context against which the transportation of waste and minerals can be assessed as well as help derive appropriate transport policies that may be included in the JMWP;
 - Documenting key transport evidence and sustainability issues and providing a baseline with respect to strategic transport infrastructure and minerals and waste throughout the plan area. Understanding the existing and future baselines for the transportation of waste and minerals will provide context to establishing key criteria for assessment during the site selection process;
 - Carrying out an assessment of the likely transport impacts of each of the proposed sites to accommodate mineral and waste development, without significant detriment to the local highway and transport networks

Policy Context and Guidance

- 4.7 Guidance for Transport Assessments is set out in the National Planning Policy Framework (NPPF) and its accompanying Planning Practice Guidance Note ‘Transport evidence based in plan making’, which requires that “*local planning authorities [...] undertake an assessment of the transport implications in developing or reviewing their Local Plan so that a robust transport evidence base may be developed to support the preparation and/or review of that Plan*”. The JMWP forms an integral part of the Local Plan process and therefore the above guidance is considered appropriate for the production of the STA.
- 4.8 The NPPF is relatively silent on waste policies although it does make a number of references to ‘minimisation of waste’. On the other hand, the NPPF sets out the overarching national policy for minerals development and the production of mineral development plans. Throughout the document however, the importance of the relationship between transport and land use planning in delivering sustainable developments, as set out in formerly adopted planning statements and guidance, has been retained in the NPPF.
- 4.9 Specifically relating to the transportation of minerals, paragraph 143 of NPPF requires authorities to “*safeguard existing, planned and potential rail heads, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, particularly coal and aggregates, including recycled, secondary and marine-dredged materials*”.

4.10 Similarly, paragraph 5 of the National Planning Policy for Waste⁷ (NPPW) states that in assessing the suitability of sites and/or areas for new or enhanced waste management facilities consideration should be given to “*the capacity of existing and potential transport infrastructure to support the sustainable movement of waste, and products arising from resource recovery, seeking when practicable and beneficial to use modes other than road transport*”. Item f of Appendix B of NPPW ‘Locational Criteria’ goes further in that it requires consideration to include “*the suitability of the road network and the extent to which access would require reliance on local roads, the rail network and transport links to ports*”

4.11 The NPPF also refer to the guiding principles of WebTAG⁸ which are also considered in the production of the STA.

Methodology

4.12 The methodology for the STA will follow the guidance set out in the PPG Note ‘Transport evidence based in plan making’ and the guiding principles of WebTAG⁹ by assessing the potential impacts of development within the framework of WebTAG objectives.

4.13 The assessment will cover the period of the JMWP which is between 2020 to 2036 taking into account improvements or planned changes to the transport infrastructure that are likely to be occur in that period.

4.14 The assessments will be undertaken in to two key stages; Stage 1 as part of the initial evidence base in terms of issues and opportunities and Stage 2 Site Selection.

Stage 1 – Issues and Opportunities

4.15 This will be a desktop study to:

- Review policy context
- Establish existing baseline for the transportation of minerals and waste materials
- Identify the potential changes within the Plan period including projected increases in traffic volumes and planned development and major transport infrastructure

⁷ National Planning Policy for Waste - <https://www.gov.uk/government/publications/national-planning-policy-for-waste>

⁸ <https://www.gov.uk/guidance/transport-analysis-guidance-webtag>

⁹ <https://www.gov.uk/guidance/transport-analysis-guidance-webtag>

4.16 The outcome of this initial stage of assessment will be to inform the Issues and Options report of the JMWP.

Stage 2 – Site Selection

4.17 This will primarily be a desktop study but may also be supplemented by site visits as required to ensure a good understanding of baseline conditions and to clarify critical information such as local lorry routing restrictions and geometrical constraints.

4.18 In line with the guidance in NPPF and WebTAG, the site selection will cover the following key issues:

- assess the existing situation by all modes and the impact on the locality in environmental terms
- assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport
- highlight and promote opportunities to reduce the need for travel
- consider the cumulative impacts of existing and proposed development on transport networks
- assess the quality and capacity of transport infrastructure including any principles of access issues and its ability to meet forecast demands
- identify any significant highway safety issues and specifically critical locations with poor accident records that may be exacerbated by proposed site allocations

4.19 The outcome may also include recommendations for mitigation measures that would improve the sustainability, viability and deliverability of the proposed site allocations provided they are compliant with national policy as a whole.

Assessment format for Site Selection

4.20 To arrive at an overall conclusion in respect of the suitability of sites for mineral or waste development, an acceptability rating will be applied based upon the evidence presented above. Table 4.1 provides detail of the criteria that will be used to determine the overall acceptability of each site, although the criteria may be reviewed following the outcome of Stage 1 above and particularly the results of the consultation and compliance with any subsequent proposed transport policies to be included in the JMWP.

Table 4.1 Assessment Criteria

Level of acceptability	Criteria	MW&R Scale
Low	Sites with serious concerns in achieving a safe access and/or where access may not be possible without requiring 3 rd party land for significant improvements to the local highway network and where these issues are likely to influence deliverability.	Red
Medium	Sites where issues have been identified that may affect delivery of the sites and/or may be more difficult to mitigate or control. These issues may relate to opportunities for new rail depot, access, routing or impact upon local residents but where mitigation may be possible. Should an 'amber' site be proposed for allocation, it will be recommended that the allocation policy makes reference to the specific issues identified and requires this to be resolved as part of any planning application.	Amber
High	Sites with no immediately identified concerns relating to access or routing. Some mitigation may still be required but deemed capable to be controlled and secured as part of the planning process.	Green
Very high	Sites/Areas with no significant access or routing problems and/or with opportunities for non-road based solutions	Dark Green

APPENDIX 1: Waste Management Facility Categories

Category one: activities requiring open sites or ancillary open areas (involving biological treatment)

Description / overview	<ul style="list-style-type: none"> • Activities requiring space for storage of waste and machinery (e.g. recycling crusher and screener; vehicle dismantlers). Open sites can accommodate processing equipment (e.g. storage containers/skips, loaders for shipment) • Activities similar to some agricultural practices require large open spaces (e.g. composting plants using open air windrows (elongated piles)). Large areas of land are converted to hard-standing areas for the running of machinery, and soil and ground water protection measures • Small proportion of the site may include building (e.g. for staff facilities)
Waste facilities	<ul style="list-style-type: none"> • Open windrow composting (composting sites typically require sites 2-3 hectares) • Aggregate recycling / construction and demolition waste processing (typically require 2 hectares or greater) • Processing incinerator bottom ash (IBA) • End of Life Vehicle (ELV) processing / scrap metal yard • Soil hospital (remediation of contaminated soils) • Household Waste Recycling Centre (HWRC) or Civic Amenity Site (typically approximately 0.8 hectare site required)
Examples of waste streams handled	<ul style="list-style-type: none"> • Unsorted or segregated household waste • Construction waste (soils, rubble etc) • Incinerator bottom ash • Scrap vehicles • Biodegradable municipal solid wastes and industrial wastes converted to composted products (garden type waste collected separately or co-collected with kitchen waste)
Preferred locations for these activities (including site requirements)	<ul style="list-style-type: none"> • Typically located in rural or urban fringe sites (where access is good). • Close proximity to development areas (markets) is preferable (it is often not viable to transport materials such as recycled aggregate long distances). • Larger scale centralised composting facilities can be located at selected composting sites but smaller facilities can be located at landfill sites, sewage treatment works, industrial sites and transfer stations. • Small scale composting operations are also located on farms, due to their ability to exploit existing

	<p>infrastructure, equipment, and labour associated with normal farm activities¹⁰.</p> <ul style="list-style-type: none"> • Aggregate recycling sites and ELV sites can be located on industrial estates alongside heavier industrial uses (affordable sites of an adequate size can be very difficult to obtain for these uses however). • Aggregate recycling activities (usually temporary operations) can also be located at mineral workings and landfill sites and at demolition and construction sites where the spoil is to be used in the project itself. • Rail sidings can be used for activities whereby materials are loaded for shipment to market (transhipment of waste). • Household Waste Recycling Centres require good access from the primary road network and sufficient vehicle queueing space.
Locations where activities would be unsuitable	<ul style="list-style-type: none"> • Would not normally be compatible with a business park environment or an urban setting, or close to villages. • An appropriate distance of 'buffer' would be required between operations and sensitive receptors. • Should be located at appropriate distances from sensitive habitats (where there are potential dust and bioaerosol impacts).
Examples of facilities in Central and Eastern Berkshire	<insert text on example site and include the name of the site, the type of waste site, the capacity of the site, where it is located and which company operates the site>

¹⁰ Most on-farm facilities possess waste management exemptions, and all community-run sites are exempt and so are restricted in size

Category two: activities requiring open sites or ancillary open areas (not involving biological treatment)

<p>Description / overview</p>	<ul style="list-style-type: none"> • Activities which involve temporary storage of waste usually consist of buildings where vehicles deliver waste either onto the floor, into bays, or into compaction units. Inert wastes in particular may be transferred to such sites and stored in the open. • Facilities may require extensive plant and specialist machinery. • For instance, hard standing areas to site recycling bins, skips and possibly compactors which can be fully / partially enclosed or open. • Unsorted waste may be stored in open bunkers or skips, housed within a building. Facilities may be co-located on sites (e.g. storage alongside a Waste Transfer Station). • Sites usually require a minimum of 0.5 hectares (but size depends on throughput).
<p>Waste facilities</p>	<ul style="list-style-type: none"> • Outdoor Waste Transfer Station (where space required for open storage). • Anaerobic digestion (AD) plant (small scale) (agricultural / rural locations) (unsorted waste, segregated waste and residual waste may be stored in open bunkers, possibly outside). • Enclosed composting systems¹¹. • MBT (Mechanical Biological Treatment) plant (including biological treatment e.g. AD)¹². • Sites for aggregating waste wood (sorting and processing). • Biological treatment of liquid waste and leachate (can involve enclosed buildings and tanks in open areas). • Wastewater Treatment Works.
<p>Examples of waste streams handled</p>	<ul style="list-style-type: none"> • Unsorted or segregated household or commercial waste • Green waste • Specialist wastes (e.g. liquid waste and leachate)
<p>Preferred locations for these activities (including site requirements)</p>	<ul style="list-style-type: none"> • Enclosed composting facilities are suited to areas allocated for employment / industrial uses in urban areas, and are compatible with the more intensive B2 activities under the Use Classes Order. • Small scale AD plants (throughput of circa 5000 tonnes per annum) can be located on sites less than 0.5 hectares (Wastewater Treatment Works in particular can provide suitable locations).

¹¹ e.g. In-vessel composting (IVC) allows collected food waste to be composted on a large scale. IVC is not considered as environmentally beneficial as anaerobic digestion. For effective waste handling, a covered waste reception area, as well as hard standing for post composting and a covered storage area are needed.

¹² The term ‘mechanical and biological treatment’ (MBT) is commonly used to describe a hybrid process which combines mechanical and biological techniques used to sort and separate mixed household waste.

	<ul style="list-style-type: none"> • Facilities to recycle agricultural waste can be located on farms (digestate from AD plants maybe used by neighbouring farms). • Options for locating wastewater treatment plant are very limited and are typically linked to existing infrastructure.
Locations where activities would be unsuitable	<ul style="list-style-type: none"> • An appropriate distance of 'buffer' would be required between operations producing bioaerosols / odours, and sensitive receptors. • Should be located at appropriate distances from sensitive habitats (where there are potential dust and bioaerosol impacts). • Facilities involving open-air activities with potential to generate noise would not normally be compatible with a business park environment, an urban setting, or close to villages.
Examples of facilities in Central and Eastern Berkshire	<insert text on example site and include the name of the site, the type of waste site, the capacity of the site. State whether the site requires internal, external or combined work areas>

Category three: activities requiring enclosed industrial premises (small scale)

Description / overview	<ul style="list-style-type: none"> • Waste developments are increasingly enclosed within new or existing structures, often sited on brownfield or industrial land; allowing for a large proportion of the perceived issues / problems to be mitigated for, i.e. dust and noise. • 'Small scale' enclosed premises are typically <1-2 hectares (throughput of approx. 50,000 tonnes per annum). • Usually located on industrial estates. • Enclosing activities helps to mitigate against many noise / odour issues.
Waste facilities	<ul style="list-style-type: none"> • Plant for Refused Derived Fuel production (small scale e.g. Mechanical Heat Treatment / Autoclaving)¹³. Autoclaving is a pressurised steam treatment process that can produce fuel pellets or pulp (by 'cooking' waste). • Dis-assembly and re-manufacturing plant (Waste Electronic & Electrical Equipment recycling). • Enclosed waste transfer station (designed to process dry, separated recyclables). • Small-scale recyclables processing facility.
Examples of waste streams handled	<ul style="list-style-type: none"> • All types of non-hazardous waste typically handled (e.g. dry mixed recyclables) • Inert waste may also be handled (e.g. sorting of construction waste, glass etc) • Clean waste wood can be handled for recycling Waste Electronic & Electrical Equipment
Preferred locations for these activities (including site requirements)	<ul style="list-style-type: none"> • As activities can be similar to other industrial activity, these facilities can be located on land previously used for general (B2) industrial activities or B1 uses (light industry appropriate in a residential area). • The requirement for good transport infrastructure is essential and therefore, where possible, should be located close to the primary road network or have potential access to rail. • Placement of sites near to the source of waste is increasingly important, by limiting movement of waste from source the impact of sites decreases.
Locations where activities would be unsuitable	<ul style="list-style-type: none"> • Sites with existing access issues should be avoided where possible. • Areas should be avoided where facilities seeking expansion of existing hardstanding would encroach into floodzones.
Examples of facilities in Central and Eastern Berkshire	<insert text on example site and include the name of the site, the type of waste site, the capacity of the site, where it is located and which company operates the site>

¹³ Refuse-derived fuel, (RDF), is made by refining municipal solid waste in a series of mechanical sorting and shredding stages to separate the combustible portion of the waste. Either a loose fuel, known as fluff, floc or coarse RDF (c-RDF), or a densified pellet or briquette (d-RDF) is produced.

Category four: Activities requiring enclosed industrial premises (large scale)

Description / overview	<ul style="list-style-type: none"> • Large buildings required to process mixed waste primarily via mechanical and / or biological means. • Various physical separation and waste reduction techniques can be used either as stand alone operations or in combination. Such activities are typically housed in an enclosed 'warehouse' type building. • 'Large scale' enclosed premises typically require site of 2-4 hectares (throughput can be up in excess of 100,000 tonnes per annum).
Waste facilities	<ul style="list-style-type: none"> • Materials Recovery Facility (MRF) (for dry recyclables). • Enclosed Anaerobic Digestion plant (large scale). • Enclosed MBT (Mechanical Biological Treatment) (large scale integrated plant)¹⁴.
Examples of waste streams handled	<ul style="list-style-type: none"> • Unsorted 'black bag' wastes (AD and MBT) • Residual household waste following doorstep separation of dry recyclables / green waste • Residual waste following separation of recyclables / organics at another facility.
Preferred locations for these activities (including site requirements)	<ul style="list-style-type: none"> • Large scale processing operations can take place in a range of buildings and at different locations. Preference should be given to industrial or degraded sites or sites on or close to existing waste management facilities. • B1 / B2 and B8 use class designations may potentially be acceptable. • Sites need to be suitable for use by HGVs. • Consideration should be given to the potential for co-location with rail or barge transfer operations.
Locations where activities would be unsuitable	<ul style="list-style-type: none"> • Mixed household waste has the potential to cause additional nuisance from litter, odour and leachate. The planning and siting considerations will therefore be different to dry recyclables processing. • Locating sites close to residential development should be avoided. Some operations which involve mechanical processing and external loading and unloading of material may be inherently noisy which will also affect the choice of site. • Sites with existing access issues should be avoided where possible. • Areas should be avoided where facilities seeking expansion of existing hardstanding would encroach into floodzones.
Examples of facilities in Central and Eastern	<insert text on example site and include the name of the site, the type of waste site, the capacity

¹⁴ The term 'mechanical and biological treatment' (MBT) is commonly used to describe a hybrid process which combines mechanical and biological techniques used to sort and separate mixed household waste, and produce a Refused Derived Fuel (RDF).

Berkshire	of the site, where it is located and how long it has been operating for.>
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Category five: activities requiring enclosed building with stack (small scale)

Description / overview	<ul style="list-style-type: none"> Plants with a throughput of approx. 50,000 tonnes per annum. Smaller scale thermal treatment facilities are often designed to receive a specific component of the waste stream. Can offer a waste management option which is more likely to be accepted by local residents. Energy is generated. Often combustion chambers are fired up according to the need to respond to fluctuations in the supply of waste. Gasification is a thermal process in which carbon is converted to a syngas leaving a solid residue. Pyrolysis takes place either in the complete absence of oxygen or with limited oxygen. Require site of <1-2 hectares.
Waste facilities	<ul style="list-style-type: none"> Pyrolysis and gasification technologies (advanced thermal treatment). Small scale incinerator. Small thermal plants (Combined Heat & Power plant)¹⁵. Small thermal treatment plants (furnaces or kilns) are also used to treat clinical wastes at hospital sites.
Examples of waste streams handled	<ul style="list-style-type: none"> Capable of handling a wide range of waste materials. Can be specifically designed to take a pre-processed feedstock or refuse derived fuel (RDF) (<i>see categories 3 and 4 above</i>). Can be used to treat clinical wastes at hospital sites. Unburned residue (bottom ash) is produced after combustible material is burnt. There are three products of pyrolysis: gas, liquid and a solid known as char.
Preferred locations for these activities (including site requirements)	<ul style="list-style-type: none"> Localities which are as close as possible to the source of waste arisings in order to minimise transport. Sites which offer the potential for CHP and export of energy to businesses which would otherwise use fossil fuel sources. May also be considered as part of large scale residential developments. Can be more suited to rural areas and areas of dispersed population centres than large-scale facilities.

¹⁵ The revised Waste Framework Directive sets a threshold above which energy efficient municipal waste incinerators can be classified as recovery facilities, and below which they continue to be classified as disposal facilities.

	<ul style="list-style-type: none"> • Most small thermal plants have been designed to treat specific industrial waste streams as part of combined heat and power (CHP) arrangements. CHP may be connected to existing decentralised energy networks in town and city centres for instance. • Preference should be given to areas allocated for business use or in traditional commercial/industrial urban areas. • Existing waste sites should also be considered. Plants can be located alongside modern industrial buildings or as a part of business parks where CHP potential can be developed. • Pyrolysis and gasification- the scale of individual buildings and process components is likely to be compatible with most small / medium sized industrial activities.
Locations where activities would be unsuitable	<ul style="list-style-type: none"> • Should be located appropriate distances from sensitive habitats and other sensitive receptors (e.g. residential). • Safeguarding zones around aerodromes where building height is restricted should be avoided. • Pyrolysis and gasification facilities should avoid sites closer than 250 m of housing etc where possible or demonstrate emission standards can be met where closer.
Examples of facilities in Central and Eastern Berkshire	<insert information on the example site, and include the name of the site, the type of site and an example of the waste disposed of>

Category six: activities requiring enclosed building with stack (large scale)

Description / overview	<ul style="list-style-type: none"> Plants with a throughput of approx. 200,000 tonnes per annum. Plants typically designed to handle large volumes of mixed waste following the 'mass combustion' approach. Designed to burn waste as efficiently as possible, usually recovering energy. The volume of waste needing disposal following treatment is reduced by approximately 90%, reducing the need for landfill. The whole process is typically contained within a single building. Legislation requires that all new and existing plants operate to extremely high environmental standards. Require site of 2-5 hectares.
Waste facilities	<ul style="list-style-type: none"> Energy Recovery Facility ('mass burn' with energy generation)¹⁶; Fluidised bed incinerators generally require some form of refuse derived fuel (RDF). Biomass plant (including proportion of waste biomass feedstock)
Examples of waste streams handled	<ul style="list-style-type: none"> Can receive between 90,000 and 600,000 tonnes of waste per year. Capable of handling a wide range of waste materials. Contaminated paper (e.g. with grease from food) can be more suited to energy recovery.
Preferred locations for these activities (including site requirements)	<ul style="list-style-type: none"> Often located in or near urban areas. Compatible with the more intensive Class B2 activities under the Use Classes Order. Existing waste sites should also be considered. Should be located as close as possible to the source of waste arisings in order to minimise transport. Should be located on sites which offer the potential for combined heat and power (CHP) and export of energy to nearby businesses.
Locations where activities would be unsuitable	<ul style="list-style-type: none"> Not normally be compatible with a hi-tech business park environment or a rural/semi rural setting. Should be located appropriate distances from sensitive habitats and other sensitive receptors (e.g. residential). Safeguarding zones around aerodromes where building height is restricted should be avoided.
Examples of facilities in Central and Eastern	<ul style="list-style-type: none"> <insert text on example site, and include the site name and its location. Mention the capacity

¹⁶ The revised Waste Framework Directive sets a threshold above which energy efficient municipal waste incinerators can be classified as recovery facilities, and below which they continue to be classified as disposal facilities

Berkshire	and how much energy that can be generated from this>
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Category seven: Landfilling

Description / overview	<ul style="list-style-type: none"> • Modern landfill practice requires a significant degree of engineering in order to contain tipped waste, control emissions and minimise potential environmental effects. • The majority of landfills are operated on a phased cell system whereby, as one cell is being filled, another is being prepared, and another is being completed / restored¹⁷.
Waste facilities	<ul style="list-style-type: none"> • Waste disposal mainly below ground level (infilling a void). Landraise, also generically referred to as landfill, refers to waste disposal mainly above pre-existing ground levels. • The primary by-products where biodegradable materials are disposed of are landfill gas and leachate (requiring ancillary operations including abstraction systems). • Inert waste can be used to restore minerals workings. • Sites may include a separate protective cell for hazardous materials.
Examples of waste streams handled	<ul style="list-style-type: none"> • Most types of non-hazardous waste may be disposed of via landfill although as disposal is increasingly discouraged, the future role of landfill is likely to be limited to the residues of other waste management operations such as incinerator ashes and materials recovery facility (MRF) rejects etc. • Hazardous wastes (although certain hazardous wastes are banned from landfill disposal). • Inert waste (non-biodegradable) is a restoration material and is not classed as landfilling.
Preferred locations for these activities (including site requirements)	<ul style="list-style-type: none"> • Landfill sites sited where an existing void is available, such as in existing mineral workings. • The location of land-raise sites is less limited and may include derelict land, or extensions to existing landfills. • Landfill sites tend to be located in rural areas. • Range in size from just a few hectares (Ha) to over 100 Ha. The larger sites are more economically viable.
Locations where activities would be unsuitable	<ul style="list-style-type: none"> • Sites close to housing, commercial or recreational areas etc. should generally be avoided. • Areas overlying principal aquifers or close to potable waters should also be avoided. • Sensitive habitats should be avoided. • Bird strike' zones around aerodromes should be avoided.
Examples of facilities in Central and Eastern Berkshire	<insert text on example site and include the site name, where it is located, the type of waste it deals with and its purpose, if necessary>

¹⁷ Cells are holes which are lined with a waterproof liner and contain systems to manage landfill gas and leachate/ liquids. When complete the cells are covered with clay to seal the waste.

APPENDIX 2: Detailed assessment of the suitability of industrial areas for waste management uses Proforma (for desk-top assessment)

Criteria	Planning considerations	Constraints on the location of waste management activities	Sources of information
a) Protection of water resources	<ul style="list-style-type: none"> Proximity to Source Protection Zones or principal/ secondary aquifers. Proximity to vulnerable water bodies. Areas subject to flooding needs close consideration. 	<ul style="list-style-type: none"> Waste management activities located in close proximity to water bodies (surface and groundwater), with the potential to release hazardous materials. E.g. water quality can be affected by eutrophication (which may be caused by leachate or effluent from waste disposal systems). Waste facilities (including built development) in flood risk areas are at risk from suffering damage to infrastructure. Estates in flood zone 3 are in areas with a 'high probability of flooding' (based on Environment Agency flood zone mapping). Flood Zone 2 is medium probability. Installations requiring hazardous substance consent are considered highly vulnerable in functional floodplains (see PPS25 Annex D). 	<ul style="list-style-type: none"> GIS Strategic Flood Risk Assessment
b) Visual intrusion	<ul style="list-style-type: none"> Potential impacts on important landscapes, i.e. AONBs (Areas of Outstanding Natural Beauty). Potential for design-led solutions (enclosing waste management activities in purpose-designed buildings). 	<ul style="list-style-type: none"> The significance of any landscape and visual impact is dependent upon a number of site specific issues such as: <ul style="list-style-type: none"> Direct effects on landscape fabric e.g. removal of trees etc Proximity of landscape designations Proximity of sensitive viewpoints Presence of existing large built structures Existing landform and nature of existing landscape Presence/absence of screening features (trees, 	<ul style="list-style-type: none"> GIS Site visit

		<p>hedges etc)</p> <ul style="list-style-type: none"> • Landscape Types and Landscape Character Areas can be referred to when undertaking more detailed assessment of the above points. 	
c) Nature conservation	<ul style="list-style-type: none"> • Proximity to sites of international/ national importance for nature conservation, and potential for any adverse effects (Special Protection Areas, Special Areas of Conservation and RAMSAR Sites) or a site with a nationally recognised designation (Sites of Special Scientific Interest, National Nature Reserves). 	<ul style="list-style-type: none"> • Noise and vibrations released as a result of the operations of the waste development may have an impact on the physiology and behaviour of nearby wildlife depending on the operation type and its proximity to conservation areas. • Some nearby species may not be able to tolerate changes to their habitat requirements caused by land disturbances. • Sustained operating noise can have a negative impact on amenity and disturb wildlife. • The health of ecosystems may also be at risk from air emissions. 	<ul style="list-style-type: none"> • GIS • Site visit
d) Historic environment and built heritage	<ul style="list-style-type: none"> • Proximity to a Registered Park or Garden or site/ any adverse effect on a site of international importance (World Heritage Sites) and building with a nationally recognised designation. 	<ul style="list-style-type: none"> • Vibrations associated with vehicle movements or the waste operation itself could be a potential threat to the historic built environment (physical damage). • The infrastructure of the waste development itself may potentially be a threat to archaeological remains, particularly during the construction phase of the development. • The significance of any impact is dependent upon site specific issues related to site setting, for example the proximity of listed buildings and/or conservation areas. 	<ul style="list-style-type: none"> • GIS • Site visit
e) Traffic and access	<ul style="list-style-type: none"> • Access to the mineral and waste lorry route. • Suitability of road network and reliance on local roads to access 	<ul style="list-style-type: none"> • 'Good access' is normally defined as within 2km of that network. • Close distance to waste source (built up/ urban areas) typically more suitable. <ul style="list-style-type: none"> • Reliance on local roads may not be appropriate in 	<ul style="list-style-type: none"> • Officer assessment • GIS • Site visit

	<p>estate.</p> <ul style="list-style-type: none"> Local congestion/ suitability of considering roads/ condition of roads. 	<p>certain locations due to the unsuitability of the road network.</p> <ul style="list-style-type: none"> The types of heavy and large goods vehicles associated with waste management developments may have adverse impacts on road network, especially roads which may not be designed, or ideally suited to supporting heavy loads. Heavy and large goods vehicles passing through dense urban areas can raise safety concerns as well as impacting the well being of local communities. 	
f) Air emissions	<ul style="list-style-type: none"> Adverse emissions can be a concern at some facilities (dealt at planning application stage if necessary through use of controls). Proximity to sensitive receptors (residential areas) and sensitive environmental receptors. 	<ul style="list-style-type: none"> Pollutants released from waste management facilities may have adverse impacts on the health of local communities (and therefore require monitoring and mitigation measures). Air emissions also have the potential to cause visibility impairment (through particulates), aesthetic damage. Air quality can be affected by acidification, ozone creation, toxicity (human and aquatic). Waste management options can affect acidification through emissions from energy use, and emissions of nitrogen oxides and hydrocarbons. 	<ul style="list-style-type: none"> GIS (to ascertain proximity to sensitive receptors)
g) Odours	<ul style="list-style-type: none"> Odour can be a concern at some facilities (dealt at planning application stage if necessary through use of controls). Proximity to sensitive receptors (residential areas). 	<ul style="list-style-type: none"> The release of bioaerosols from some waste management activities have potential to impact human and animal health, particularly respiratory health. <ul style="list-style-type: none"> Odours released from some waste activities may also affect the well being of communities, depending on the severity. 	<ul style="list-style-type: none"> GIS (to ascertain proximity to sensitive receptors)
h) Vermin and birds (proximity to aerodrome safeguarding areas)	<ul style="list-style-type: none"> Proximity to sensitive receptors (residential areas) and aerodrome safeguarding areas. 	<ul style="list-style-type: none"> The potential attraction of waste activities to birds and vermin may potentially create a bird aircraft strike hazard (BASH), which could affect the safety of air passengers as well as those on the ground. 	<ul style="list-style-type: none"> GIS Site visit Aerodrome safeguarding areas

		<ul style="list-style-type: none"> • The size and design of the waste facility may impact on radar operations • Vermin carries the potential to adversely impact health and well being of nearby communities. 	
i) Noise and vibration	<ul style="list-style-type: none"> • Operations at some large waste management facilities can produce noise (which will need to be kept to acceptable levels). • Proximity to sensitive receptors (residential areas). 	<ul style="list-style-type: none"> • Increased noise and vibration levels from transport movements and waste operations may have the potential to adversely affect human and animal health as well as the wellbeing of local residents. <ul style="list-style-type: none"> • The operation of large waste management facilities in particular can produce noise both inside and outside buildings. 	<ul style="list-style-type: none"> • GIS (to ascertain proximity to sensitive receptors)
J) Potential land use conflict	<ul style="list-style-type: none"> • Take account of likely proposed development in the vicinity of the industrial estate. • Some waste facilities may be considered as light industrial with advancement in mitigation and therefore compatible with residential development. 	<ul style="list-style-type: none"> • Proposed waste management activities may be part of, or near to, an area which has been identified for regeneration or improvements (involving development such as housing, recreation or economic development). • Industrial areas may be identified in local planning documents or 'allocated' for other non-waste uses therefore. 	<ul style="list-style-type: none"> • Central and Eastern Berkshire Authorities – Local Plan (evidence base, including SHLAAs, ELRs and saved policies within Local Plans) • Liaison with local planning authorities • GIS

A summary of this document can be made available in large print, in Braille or audio cassette. Copies in other languages may also be obtained. Please contact Hampshire Services by email berks.consult@hants.gov.uk or by calling 01962 845785.