Cambridgeshire County Council and Peterborough City Council

Site Assessment Methodology

Cambridgeshire and Peterborough Minerals and Waste Local Plan

May 2018

Cambridgeshire County Council

PETERBOROUGH CITY COUNCIL

Contents

The emerging Cambridgeshire and Peterborough Minerals and Waste Local Plan

1. The Cambridgeshire and Peterborough Minerals and Waste Development Plan Core Strategy and Site Specific Proposals Development Plan Documents were adopted in July 2011 and February 2012 (respectively). Jointly, these documents (also known as Local Plans) set out the strategic vision for minerals and waste management development throughout the County of Cambridgeshire and the City of Peterborough.

2. Direction provided through national policy sets an expectation that Local Plans are to be kept up-to-date. Local Plans are required to be reviewed every five years under the Town and Country Planning (Local Planning) (England) Regulations 2017. A review of the adopted Minerals and Waste Development Plan is currently being undertaken to role all of the elements of the Minerals and Waste Development Plan into one Local Plan, this will capture the Core Strategy and Site Specific Proposals DPDs. The new combined document is to be referred to as the Minerals and Waste Local Plan (MWLP). The scope of the emerging MWLP will therefore include the identification of site-specific allocations for minerals and site-specific allocations and/or areas of focus for waste management development (as appropriate).

3. In order to identify sites[1] for allocation in the Local Plan it is necessary to clearly set out how sites (herein also taken to refer to industrial area designations for waste development) will be identified and then assessed in order to determine which sites are appropriate to facilitate delivery of the required provision of minerals / waste management capacity through the plan period, and so should be taken forward through the plan-making process. The identification of sites for allocation in the Local Plan should be based upon a robust and credible assessment of the suitability of land.

4. Planning authorities are required to undertake a Sustainability Appraisal (SA). The SA process considers sustainability effects of implementing a land-use plan at a strategic level, as such it does not lend itself to analysis of a site's ability to accommodate a proposed development and potentially adverse impacts that may occur. In order to ascertain what potential impacts could arise as a result of minerals and waste development – and subsequently which sites are appropriate to include in the Local Plan in order to facilitate delivery of aggregates / waste management capacity and contribute towards development of sustainable communities – a more focused assessment is needed. This is where the site assessment process comes in – it fills in the gap between the strategic level SA and the spatial strategy / strategic policy guidance provided through the Local Plan.

5. The site assessment process plugs into both the SA and plan-making process as it uses key elements of both of these processes (such as the plan's vision, objectives and spatial strategy and the SA objectives and assessment framework). In this manner the site assessment process acts as a direct extension of the SA process and as a decision-making tool for the plan-making process. The assessments of sites will form part of the evidence base of the Local Plan. Figure 1 also indicates where the site assessment process plugs into

[1] Herein taken to also refer to the locations/areas of focus for waste management facilities – however as these would not be site-specific the assessment process may be applied at a broader scale.

both the SA and plan-making processes. The draft SA objectives are set out in Appendix 1.

6. The site assessment process is not intended to provide an exhaustive listing of decision making criteria, or to replace the planning application process. Rather, it seeks to identify those factors that will enable meaningful comparison of site suitability, sensitivity and potential impacts.

7. It should be noted that in assessing industrial area designations for waste development the criteria will be applied at a landscape (broader) level as it may not be practical to assess larger general areas in the same amount of detail as individual sites.

8. In addition the plan will also be subject to Habitats Regulations Assessment (HRA) – this is separate again from both the site assessment and SA processes.

9. The draft site assessment methodology has been developed in accordance with the National Planning Policy Framework (NPPF) and the National Planning Policy for Waste (NPPW); it also seeks to dovetail with the SA process in order to ensure that the decision-making process is iterative and comprehensive. The site assessment process will help to ensure consistency, maintain transparency and provide a sound basis for the allocation of sites in the Local Plan. The findings of the site assessment process and SA, coupled with consultation throughout the plan-making process, will assist in identifying sites to be taken forward as allocations.

10. Potential sites will be identified through a Call for Sites undertaken as part of the Preliminary Draft stage as well as a review of council records. All sites identified will be subject to an initial screening (Level 1) alongside preparation of the Further Draft Plan, with appropriate sites identified as proposed allocations for consultation in the Further Draft Plan[2]. Following on from consultation on the Further Draft Plan the proposed allocations will be assessed in more detail (Level 2) alongside preparation of the Proposed Submission Plan. Any sites that come forward during the Further Draft Plan consultation will be subject to assessment as per the methodology (i.e. subject to Level 1 assessment and where determined appropriate, Level 2 assessment). All sites will be compared and considered on a merits basis and amendments made to the plan as necessary to ensure that only those that are most appropriate are taken forward, regardless of the stage at which they were first identified3. Following this, the most appropriate sites will be identified in the Proposed Submission Plan as proposed allocations. It should be noted that the Plan will not identify sites that it considers inappropriate just to make up the total provision or capacity gap.

11. Broadly, the assessment of sites will involve the following:
    i. Level 1 will involve an initial screening of the sites/areas in order to determine compliance with key policy considerations, including submission of all mandatory site information, as well as identifying any ‘red flags’ that may significantly affect site suitability. All sites put forward through the call for sites, including existing allocations not yet permitted, will be subject to this Level 1 assessment.

[2] For details of the various stages of the plan making process and proposed timings, refer to the Minerals and Waste Development Scheme which is available on the council’s website.

[3] It should be noted however that for a site to be considered, it must be submitted within the prescribed consultation periods. Any site submitted after close of consultation on the Preliminary Draft Plan will be required to be accompanied by a site assessment prepared as per the Site Assessment Methodology.

ii. Level 2 will involve a desktop assessment of the sites/areas against the assessment criteria in order to provide an overview of features, constraints, potential impacts and capacity for avoidance and/or mitigation measures. Only sites determined to be in general compliance with Level 1 criteria will be subject to Level 2 assessment.

iii. Level 3 will involve a detailed assessment of specific constraints/issues, this level of assessments will only be undertaken where significant constraints/issues are highlighted through previous levels of assessment and where such assessment is proportionate and will add value to the process. This will assist in determining if the constraints/issues identified could reasonably be expected to be avoided and/or minimised to acceptable levels.

Consultation on the methodology

12. Consultation on the draft methodology will take place alongside consultation on the MWLP Preliminary Draft document. The consultation period commences on 16 May 2018 for 6 weeks. The closing date for feedback is **26 June 2018**; all responses must be received before midnight on this date. The purpose of undertaking consultation on the draft methodology is to ensure that: the scope and techniques are appropriate and proportionate; the information used is the most up-to-date; that local matters have been given due consideration; and that the methodology is in line with Government requirements and guidance.

Level 1: Initial screening

13. Level 1 will involve an initial screening of the sites against key policy considerations including the emerging Local Plan vision, objectives and the spatial strategies as well as key industry specific and major land use constraints for the purpose of identifying any red-flags that may significantly affect site suitability.

14. The screening criteria, as set out in Table 1, will include:
    - Key policy considerations (e.g. the emerging Local Plan vision, objectives and spatial strategy for minerals and waste development) and an overall assessment of deliverability.
    - Consideration of other adopted land use plans (i.e. Borough / District Local Plans and other plans adopted in the Peterborough City Council area).
    - Mandatory information and additional supporting information as set out in Preliminary Draft Plan Appendix 1 and 2.
    - Industry specific considerations.
    - Confirmation of deliverability of the proposed site (i.e. including support from the landowner where they are not proposing the site themselves).
    - Major land-use constraints (e.g. national and international designations on-site/directly adjacent).

15. It should be noted that the purpose of identifying national and international designations on-site/directly adjacent to the site, at this early stage, is not to assess the potential impacts on the identified asset (and setting of heritage assets where applicable) but to simply act as a flag to ensure that due consideration is paid to potentially adverse impacts on natural assets and heritage assets (and their setting). Undertaking detailed assessments regarding

such impacts (on assets and setting) at this the early stage of the plan-making process is not considered proportionate, particularly when some of the sites will not be taken forward. This level of assessment is more appropriate in Level 2. In addition local designations, along with many other factors, are identified and given due consideration in Level 2 of the assessment process.

16. All sites identified through the Call for Sites process along with sites/locations identified by the planning authorities of Cambridgeshire and Peterborough will be subject to Level 1 assessment. The results of the assessments will assist in determining sites taken forward through the plan-making process.

17. The key policy considerations will act as the first 'sieve' – sites that are not in general conformity with these are unlikely to be taken forward and will not be subject to further assessment (as they would be unlikely to support delivery of the plan).

18. Assessments will be recorded using a standard template to identify compliance with the screening criteria, this will be determined as: Green flag = fully compliant / no constraints identified; Yellow flag = generally in compliance / constraints identified in local area (i.e. not on-site); and Red flag = not compliant / constraints identified on-site. A summary of the assessments will be included in the Further Draft Plan. The full assessments will be contained in a separate Annex made available during the Further Draft Plan consultation.

19. The site assessments, consultation responses, development of the key policy considerations and the SA (and HRA where required) will be taken into consideration in taking sites forward through the plan-making process. Only those sites to be taken forward through the plan-making process will be subject to Level 2 of the site assessment process. Reasons for rejection of sites (from further consideration in the plan-making process) will be documented.

Table 1: Proposed Level 1 initial screening criteria

Key policy considerations	
The plans vision and objectives	Does the site support the plans vision and objectives?
Spatial strategy and development principles	Is the site in general conformity with the spatial strategy? Is the site in general conformity with key development principles?
Land ownership	Does the proponent currently own the site? If not is there an agreement or is there an agreement in place or being negotiated with the landowner, including potential restoration outcomes?
Deliverability	Minerals – Is the reserve quality and/or yield sufficient to suggest extraction would be economically viable during the plan period? Waste – What are the proposed waste management process and the annual throughput (tonnes per annum)?
Consideration of other (adopted) land use plans	Is the site in general conformity with other local plans (including allocations)?
Minerals - Industry specific considerations	
Mandatory information requirements	Has the proponent submitted the required mandatory information?
Additional supporting information	Has the proponent submitted additional supporting information?

Mineral type	What is the type of mineral proposed to be worked i.e. primary aggregate (sand and gravel, limestone) or secondary and recycled aggregates?
Contribution towards adequate supply of aggregates*	What is the estimated total yield/saleable aggregate, annual extraction rate and estimated operational life? What is the intended timeframe for working the site (i.e. immediate 0-5 years, short term 5-10 years, medium term 10-15 years or long term 10+ years)?
Quality of reserve	What is the reserve quality/characteristics?
Geological evidence to support the reserve	Local/site specific bore hole drilling surveys Reserve to overburden ratio Indicative resource identified through BGS mineral information mapping / reports
Intended end use and market area	Given the quality of the reserve what is the intended end use? Where is the site located – would the aggregate be likely to be used within the plan area or exported?
Waste - Industry specific considerations	
Mandatory information requirements	Has the proponent submitted the required mandatory information?
Additional supporting information	Has the proponent submitted additional supporting information?
Waste type / stream	What are the waste type(s) and/or stream(s) to be received?
Contribution towards a sustainable waste management network and capacity requirements	Would the facility facilitate delivery of capacity requirements during the plan period? What is the intended timeframe for developing the site (i.e. immediate 0-5 years, short term 5-10 years, medium term 10-15 years or long term 10+ years)?
Reduction in reliance on landfilling	Does the proposal contribute towards a reduction in reliance on landfilling? Has the end fate and/or market for residual waste/by-products been identified?
Intended catchment	Have possible origins or a broad catchment area been identified?
Spatial context	Has consideration been given to co-location of facilities together and with complementary activities, balancing waste movements (proximity to urban areas), servicing of growth areas?
Major land use constraints	
National and international designations	Does the site include, or is the site located within or directly adjacent to, a designation for national or international interests/features?
Protected species	Have any protected species been identified on-site?**
Flood risk	What flood zone is the site located within?

** Where possible permitted reserves, anticipated yield from sites put forward / identified by the planning authorities of Cambridgeshire and Peterborough and the proposed provision rate will be projected over the plan period to determine those sites that complement the intent to maintain a steady and adequate supply of aggregates over the plan period. This information will be treated as confidential. Where appropriate overall projections may be shown in consultation / evidence base documents with figures aggregated (e.g. in a graph).*

*** Information sourced from records held by the relevant Council.*

Level 2: Desktop assessment

20. Sites determined to be in general compliance with Level 1 criteria will be subject to Level 2 assessment. Level 2 will involve a desktop assessment using existing data and information of the sites against environmental, social and economic criterion (based on the SA objectives, refer to Table 2) in order to provide an overview of features, constraints, potential impacts and capacity for avoidance and/or mitigation measures, i.e. factors that may affect site suitability and so inform identification of the proposed allocations.

21. In general this stage may involve: broad identification of assets/features, including their context/significance, those potentially affected (using officer knowledge, available records, GIS, etc.); identification of potentially adverse impacts that may impact on the feature / asset and setting (this may be addressed in assessment records through other criterion); identification of site specific avoidance and / or mitigation measures that may be required to reduce potentially adverse impacts to an acceptable level; identification of opportunities for enhancement and other beneficial outcomes; and identification of potential cumulative impacts. Where appropriate published guidance (e.g. sequential test for flood risk, or assessment of heritage assets and setting) will be incorporated at a level that is proportionate to the plan-making, and site assessment, stage.

22. It should be understood that the assessment takes account of a wide array of assets/features and potential impacts - information collated for different criterion is not viewed in isolation, rather the assessment is taken as a whole with criterion informing the overall context of the assessment.

23. A general field visit will also be undertaken to view the site in context of its surrounds, during which photos may be taken from various vantage points for council records, however specific assessments/surveys will not be undertaken during Level 2. The purpose of the field visit is for general familiarisation and to provide context.

24. Where the emerging Local Plan seeks to identify locations for waste management use the methodology will be applied at a landscape (i.e. broader) scale, reflected in the table below. This is because it is not practical to assess such broad areas at the same level as an individual and well-defined site.

25. Where applicable the assessment should include identification of avoidance and/or mitigation measures to reduce potentially adverse impacts to acceptable levels.

Table 2: Proposed Level 2 desktop assessment criteria

Environmental, social and economic assessment criterion	Link to SA (& Plan) objective	Criterion objective – site specific allocations	Criterion objective – areas of focus (or similar designation)
Air quality Including dust, air emissions, bio-aerosols (waste) and odours (waste)	3. Support climate change mitigation and adaptation, and seek to build in resilience to the potential effects of climate change	Presence of AQMAs Potential for emissions to air and air quality impacts for proposed development, including source Distance to sensitive receptors (dust and bio-aerosols)	Presence of AQMAs Potential for emissions to air and air quality impacts for proposed development, including source Presence of sensitive receptors in the local area.
Protection of water quality, resources and groundwater	4. Protect water resources, mitigate for flood risk from all sources and seek to achieve a reduction in overall flood risk	Proximity to, and location of, watercourses and waterbodies on site and within local area (including groundwater and source protection zones) Potential impacts on water quality and quantity	Location of watercourses and waterbodies within local area (including groundwater and source protection zones) Potential impacts on water quality and quantity
Flood risk	3 & 4	Identification of flood risk from all sources including fluvial flood risk.	Presence of flood risk areas
Land and soil quality Including agricultural land classification, management of soils, land contamination (waste) and land instability (waste)	5. Safeguard productive land	Identification of agricultural land grade on site Current land use and impact of proposed development (including restoration if applicable)	Identification of agricultural land grades within the local area Current land use and impact of proposed development (including restoration if applicable)
Noise and vibration	11. Protect and enhance the health and wellbeing of communities 12. Minimise noise, light and air pollution	Distance to sensitive receptors and main (existing) noise sources (e.g. highway, railway, etc.) Potential for noise and vibration impacts, including along proposed transport route	Presence of sensitive receptors and main (existing) noise sources (e.g. highway, railway, etc.) in local area. Potential for noise and vibration impacts
Nature conservation, biodiversity and geodiversity	9. Protect and encourage biodiversity and geodiversity	Identification of assets (including local designations) on site and within the local area and potential impacts	Identification of assets (including local designations) within the local area and potential impacts

Environmental, social and economic assessment criterion	Link to SA (& Plan) objective	Criterion objective – site specific allocations	Criterion objective – areas of focus (or similar designation)
Historic environment and heritage assets (and setting)	1. Ensure a steady and adequate supply of minerals to support growth whilst ensuring the best use of materials, and protection of land (with respect to provision of traditional building materials) 10. Protect and where possible enhance the character, quality and distinctiveness of the built and historic environment	Identification of assets (including archaeological assets/records) on site and within the local area and potential impacts on the asset and its setting	Identification of assets (including archaeological assets/records) within the local area and potential impacts on the asset and its setting
Landscape character and visual impacts (including light – waste)	8. Conserve and enhance the quality and distinctiveness of the landscape	Identification of landscape character and features on site and within the local area and potential impacts, includes Green Belt	Identification of landscape character and features within the local area and potential impacts, includes Green Belt
Built environment and townscape	8	Description of sites context with respect to built landscape and townscape (identification and proximity to settlements, transport routes, railways) Potential for visual impact and views from settlements	Description of the land use of the broad area (widening to local) context with respect to built landscape and townscape (identification and proximity to settlements, transport routes, railways) Potential for visual impact and views from key vantage points over the area
Opportunities for beneficial restoration and after use	3, 9 & 11	Opportunities for restoration to link with local/wider strategies and site specific elements	Note applicable for waste management facilities
Climate change and opportunities for sustainable development	2. Contribute positively to the sustainable management of waste 3	Opportunities to reduce greenhouse gas emissions and incorporate sustainable development technologies/design features	General opportunities to reduce greenhouse gas emissions and incorporate sustainable development technologies/design features generally associated with the

Environmental, social and economic assessment criterion	Link to SA (& Plan) objective	Criterion objective – site specific allocations	Criterion objective – areas of focus (or similar designation)
			development of waste management facilities
Proximity to sensitive receptors	8, 9, 10, 11 & 12	Proximity (including distances) from boundary of the site to sensitive receptors	Presence and general location of sensitive receptors
Compatibility of surrounding land-uses	11 & 12	Overview of the land uses present directly adjacent the site and within the surrounding (local) area and level of sensitivity (dust/bio-aerosols)	Overview of the land uses present within the local area and level of sensitivity (dust/bio-aerosols)
Litter, vermin and birds (waste only)	11 & 12	Potential for litter, vermin and bird impacts (including birdstrike and aviation safeguarding) resulting from the proposed development	Potential for litter, vermin and bird impacts generally associated with waste management facilities
Impact on general amenity or character of the area	8, 11 & 12	Likelihood of cumulative impacts from interaction of proposed and existing land uses and other proposed development	Identification of general character of the local area, and potential impacts
Impact on recreational opportunities and open spaces (including rights of way)	11	Identification of recreational opportunities on site and within the local area and potential impacts	Identification of recreational opportunities within the local area and potential impacts
Economic and employment opportunities	1 & 2 6. Support sustainable economic growth and the delivery of employment opportunities	Potential for the proposed development to contribute towards economic development and deliver employment opportunities	Potential for waste management facilities, in general, to contribute towards economic development and deliver employment opportunities
Site access and impact on transport network / infrastructure (nature and capacity of existing network / type and level of traffic resulting from development / conflicts with non-industrial transport / opportunities for alternative and sustainable transport options)	7. Reduce road traffic, congestion and pollution; promote sustainable modes of movement and efficient movement patterns; and provide and maintain movement infrastructure	Proposed access and routing, estimated movements (including proximity to heavy commercial vehicle (HCV) network) Potential impacts on transport network and capacity for the network to accommodate the proposed development	Existing access Overview of local transport network and capacity for the network to accommodate the proposed development

Environmental, social and economic assessment criterion	Link to SA (& Plan) objective	Criterion objective – site specific allocations	Criterion objective – areas of focus (or similar designation)
Availability of and impact on infrastructure	6 & 7	Identification of infrastructure networks on site and within the local area and potential impacts / opportunities	Identification of infrastructure networks within the local area and potential (general) impacts / opportunities
Capacity for avoidance and / or mitigation measures (including the potential for residual environmental nuisance)	3, 4, 5, 7, 8, 9, 10, 11 & 12	Likelihood that identified mitigation measures (as noted in above criterion) could avoid and/or reduce potentially adverse impacts to an acceptable level, and any residual environmental nuisance impacts likely to occur	Overview of mitigation measures applied to waste management facilities and likelihood that, given broad land use context, identified mitigation measures could avoid and/or reduce potentially adverse impacts to an acceptable level, and any residual environmental nuisance impacts likely to occur (in general terms)
Potential for cumulative impacts	3, 4, 5, 7, 8, 9, 10, 11 & 12	Likelihood of cumulative impacts from interaction of proposed and existing land uses and other proposed development	Likelihood of cumulative impacts from interaction of proposed and existing land uses and other proposed development

26. No weightings will be applied to the criterion as this implies that different indicators are directly comparable, allowing for 'scores' to be allocated and added together resulting in a sum total that would determine the best option. The constraints and issues presented by individual sites are complex in nature and require consideration on a site-by-site basis.

27. Site assessments will be largely reliant on existing data and information. Appropriately qualified personnel will undertake the assessments specifically identified to conduct assessments based on their respective professional fields. All assessments will be subject to quality assurance checks via peer review and fact checks; this will help to ensure a comprehensive and objective assessment. The following references will form the main background information sources and assist in establishing the known built and natural environmental character context, as well as providing an objective framework to support the assessment:
    - Relevant environmental, infrastructure and land use datasets, lists and GIS layers/datasets,
    - Adopted and previous plans (and associated evidence base),
    - Mineral resource information reports, maps and surveys,
    - Waste arising and forecast datasets and reports,
    - EA waste data interrogator, industry returns/registers and infrastructure datasets,
    - Current and historic planning permissions, and
    - Environmental/landscape/historic landscape character assessments, green infrastructure strategy/studies, Biodiversity Action Plan, Historic Environment Record (Sites and monuments record), Local Transport Plan, etc.

28. Where potentially adverse impacts are identified an indicative risk assessment will be provided in order to identify the scale and nature of the impact and allow for comparison of sites (refer to Table 3 and 4).

29. Assessments will be recorded using a standard template to identify site specific factors, indicative risk of potential effects, identification of standard avoidance and / or mitigation measures that may be required, potential for cumulative impacts and an overall evaluation of the sites suitability.

30. A summary of the assessments will be included in the Proposed Submission Plan. The full assessments will be contained in a separate Annex made available alongside the Proposed Submission Plan.

31. Consultation responses, development of the key policy considerations and the SA (and HRA where required) will be taken into consideration alongside results of the site assessments in determining which sites will be taken forward through the plan-making process to the Proposed Submission stage. Reasons for rejection of sites (from further consideration in the plan-making process) will be documented.

Table 3: Scale of impact

Scale	Definition
Negligible	So small or unimportant that it may safely be neglected or disregarded.
Low	Beneficial impact resulting in slight increase in quality or character enhancement.
	Slight adverse impact highly likely to be ameliorated by mitigation measures with remaining residual impacts being negligible (or within acceptable limits). Identified constraints are acceptable.
Moderate	Beneficial impact resulting in an increase in quality or character enhancement.
	Adverse impact resulting in harm. It is possible that implementation of avoidance and/or mitigation measures will reduce impacts to an acceptable level. Identified constraints are significant.
Major	Beneficial impact resulting in extensive and significant increase in quality or character enhancement.
	Adverse impact resulting in significant harm. The implementation of avoidance and/or mitigation measures is unlikely to reduce impacts to an acceptable level. Identified constraints are unlikely to be overcome.

Table 4: Impact risk rating

	Scale of impact			
Level of impact	**Negligible**	**Low**	**Moderate**	**Major**
Adverse impact				
National	Negligible	Moderate	High	Very high
County or sub-regional	Negligible	Low	Moderate	High
Local	Negligible	Low	Low	Moderate
Beneficial impact				
Local	Negligible	Low	Low	Moderate
County or sub-regional	Negligible	Low	Moderate	High
National	Negligible	Moderate	High	Very high

Note: Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered at the 'national' level for the purpose of the impact risk rating (NPPF para 139).

Level 3: Detailed assessment of specific constraints and/or issues

32. Detailed investigation of specific constraints/issues will only be undertaken where significant constraints and/or issues are highlighted through previous levels of assessment and where such assessment is proportionate and will add value to the process. The Level 3 assessment will not be undertaken unless it is felt that the results would address or provide further information regarding the specific potentially adverse impacts identified through the previous assessment stages – i.e. it must add value to the process and be proportionate, not simply undertaken for the sake of it. The need for further assessment will be determined by the previous assessment stage (Level 2) as well as relevant information received through consultation responses. Where determined to be necessary

Level 3 assessment will be undertaken alongside the preparation of the Proposed Submission Plan document.

33. It is important to note that it is not anticipated that this level of assessment will be necessary for the vast majority of sites and potentially no Level 3 assessments will be required at all.

34. Examples of constraints / issues that may be identified and broad assessment measures to be applied are outlined in Table 5 below, with techniques to be used for detailed assessments set out in Appendix 2.

35. Techniques to be applied include GIS analysis, professional judgement, risk-based assessment, sensitivity analysis and field surveys (ground-truthing).

36. The information obtained from any Level 3 assessments will support the allocation / designation of sites throughout the plan-making process.

37. Any Level 3 assessment will be recorded using a standard template with a summary included with the Proposed Submission Plan with the full assessments contained in an Annex.

Table 5: Examples of detailed assessment techniques

Constraint and/or issue	Assessment technique
Environmental impacts / nuisance, amenity, flood risk and land use conflict	Risk assessment, sensitivity analysis and source-pathway-receptor analysis
Ground truthing *(Does not include seasonal surveys, sampling or intrusive evaluation (e.g. trial pits) such as undertaken for purpose of an EIA).*	Nature conservation, historic environment, landscape character, infrastructure and transport
Contribution towards delivering the plans objectives and operational requirements	Compliance with emerging policy, consideration of industry requirements and land use assessment
Cumulative impacts	Consideration of impacts alone and in-combination with other plans and / or projects and risk assessment

Appendix 1: SA objectives

The (draft) SA objectives are set out below (refer to the SA Scoping Report, January 2018[4]). It should be noted that the SA objectives are the same as the Plan objectives.

Sustainable mineral development

1. Ensure a steady and adequate supply of minerals to support growth whilst ensuring the best use of materials, and protection of land

Sustainable waste management

2. Contribute positively to the sustainable management of waste

Resilience and restoration

3. Support climate change mitigation and adaptation, and seek to build in resilience to the potential effects of climate change

4. Protect water resources, mitigate for flood risk from all sources and seek to achieve a reduction in overall flood risk

5. Safeguard productive land

Employment and economy

6. Support sustainable economic growth and the delivery of employment opportunities

Infrastructure

7. Reduce road traffic, congestion and pollution; promote sustainable modes of movement and efficient movement patterns; and provide and maintain movement infrastructure

Natural environment

8. Conserve and enhance the quality and distinctiveness of the landscape

9. Protect and encourage biodiversity and geodiversity

Built and historic environment

10. Protect and where possible enhance the character, quality and distinctiveness of the built and historic environment

Health and wellbeing

11. Protect and enhance the health and wellbeing of communities

12. Minimise noise, light and air pollution

[4] www.peterborough.gov.uk/council/planning-and-development/planning-policies/minerals-and-local-waste-plan/

Appendix 2: Level 3 Detailed assessment techniques

Detailed assessment requirements will be determined following Level 2 of the assessment process and identification of the preferred sites.

Examples of assessment criterion, need for further investigation and techniques to be applied are set out in the table below. Where potential adverse impacts affect more than one assessment criterion the detailed assessment will be combined where appropriate to ensure an efficient process and reduce unnecessary duplication.

Methodologies for undertaking the detailed assessments are also detailed below.

Table A2.1: Examples of detailed assessment criterion (Level 3)

Site	Assessment criterion identified as requiring detailed assessment	Previous assessment determined a need to investigate ...	Technique to be applied
Example only	Nature conservation	Protected species recorded on site International and national designations on/adjacent site	Nature conservation assessment
	Landscape character Built environment and townscape	Capacity of the landscape to accommodate the proposed development and potential for mitigation Potential levels of visual intrusion	Landscape capacity and visual sensitivity assessment
	Proximity to sensitive receptors Compatibility of surrounding land-uses Impact on general amenity or character of the area	Risk of unacceptable residual environmental nuisance impacts including noise and dust (visual impacts captured by above assessments)	Risk assessment and sensitivity analysis

Nature conservation assessment

Level 3 of the site assessment methodology will involve a desktop based assessment involving the use of GIS, local habitat mapping, aerial photographs, historic records (e.g. local Environmental Records Centre - CPERC, and/or other records as relevant) and local knowledge. The purpose of which is to outline the habitat type(s) present and their relative importance.

The detailed assessment (Level 3) will involve ground-truthing (i.e. site visits) with the aim to map all major habitat types (quality and size) and where possible record species (and their abundance) from each habitat patch. A suitably qualified person will undertake the assessment. The quality of the habitat will be related to species richness and abundance, and assessed on a continuous scale. Where possible the site's potential to support populations of protected and/or priority species (e.g. great crested newts, bats, reptile species etc.) will also be identified and reported, however it is important to note that it is not the purpose of this assessment to include a full species survey as this level of assessment is not considered to be proportionate to the plan-making stage and would be normally accompany a planning application.

Botanical and other species groups will be recorded where present and identified onsite during the course of undertaking habitat mapping. A species list will be created separately for each habitat patch (recorded on a DAFOR scale, Table 16). The DAFOR scale is a quantitative definition of the typical abundance and frequency of habitats (see below table).

Table A2.2: DAFOR scale

Class	Typical abundance and frequency
Dominant (D)	The dominant vegetation / species highly visible, more than 75% cover
Abundant (A)	Many individuals or patches visible, 51-75% cover
Frequent (F)	Several individuals or few patches, 26-50% cover
Occasional (O)	A small patch or a few individuals, 11-25% cover
Rare (R)	Single very small patch or individual, 1-10% cover

Habitat boundary mapping will also be undertaken to map the site into its constituent habitats, this will be done primarily by eye (and GPS where necessary). Due to the potential complexity of habitat structure and composition (e.g. some sites may present a mosaic of very small, interlinked patches – the resource requirements for which are beyond the purpose and boundary of this assessment) a threshold based on habitat size will be applied (see table below) in order to guide the level of mapping detail required for individual sites and habitats.

Table A2.3: Habitat size threshold for habitat boundary mapping

Habitat type	Area (ha)	Length (m)
Woodland (all types)	0.5	-
Scrub	0.1	-
Hedge	-	30
Grassland (all coarse types – neutral, calcareous, acidic)	0.05	-
Heathland	0.05	-
Swamp (and all related habitats)	0.05	-
Water course (e.g. ditch / spring)	-	20

Note: Habitat patches below the threshold size are not individually mapped, but should be recorded or target-noted.

Interesting individual features will not be individually mapped, but will be summarised and noted. The presence of habitats or features potentially supporting protected species or habitats will also be identified (and where relevant, marked on a map as appropriate).

The potential for priority habitat creation through restoration of site allocations will also be investigated in conjunction with the field surveys, including consideration of adjoining land where possible. Where this is not possible (access restrictions) or not necessary (a visual assessment from the site was sufficient in some instances) other information sources (e.g. GIS, local habitat mapping, aerial photographs, historic records and local knowledge) will be utilised to determine the major habitat types present on adjacent land. Assessment of the broader landscape and wildlife corridors will be undertaken using secondary information sources as indicated above. The information obtained from the site assessments and other information sources will be applied to determine the potential of the site to contribute towards restoration or creation of new priority habitats.

An example template of the Level 3 site assessment and survey sheet is provided below.

Table A2.4: Level 3 site assessment and survey sheet template

Site reference	
Rapid assessment	
Major habitat type(s) present and relative importance	
Site based habitat and species survey	
Date of survey	
Botanical survey	
Dominant species listing & DAFOR	
Other species groups present	
Species listing & DAFOR	
Major habitat types identified	
Habitat type:	**Quality:**
	Size (area / length):
	Species present within habitat patch & DAFOR:
Habitat type:	**Quality:**
	Size (area / length):
	Species present within habitat patch & DAFOR:
Habitat boundary mapping	
(Insert / sketch habitat boundary map, or alternatively attach a separate map to the survey form)	
Potential for priority habitat creation through restoration	
Major habitat type(s) present (and relative importance*)* on adjoining land *(indicate whether field survey was possible / necessary and any other information sources used.)*	
Does the site (or adjacent land) currently form part of a wildlife corridor/connected habitat?	
Does the site present future potential to contribute towards the restoration or creation of new priority habitats? *(Specify opportunities for restoration or creation of new priority habitats e.g. habitat types. This may include extension of habitat creation onto adjacent land.)*	
Site's potential to support populations of protected and/or priority species.	

Landscape capacity and visual sensitivity

The objective of the landscape capacity and visual sensitivity assessment is to carry out an appraisal of likely landscape capacity for individual sites i.e. the extent to which a site can accommodate the proposed development.

In order to obtain all the data required and to carry out an assessment of the capacity for an individual site to accommodate the proposed development, both desk

and field work are to be undertaken. All work will be carried out in accordance with best practice guidance as set out in the following publications:

- Landscape Institute (2013) Guidelines for Landscape & Visual Impact Assessment 3rd edition
- Landscape Institute (2016) Landscape Character Assessment Technical Information Note (08/2015)
- Natural England (2014) An approach to Landscape Character Assessment
- Scottish Natural Heritage and The Countryside Agency (2002) Landscape Character Assessment Guidance for England and Scotland
- Scottish Natural Heritage and The Countryside Agency (2002) Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity
- David Jarvis Associates Ltd entitled 'Quarry Plant in the Landscape 2008
- Guide to the visual screening of quarries 2005
- Cambridgeshire County Council and Peterborough City Council, Location and Design of Waste Management Facilities SPD

The methodology is based on the criteria for judging landscape capacity to accommodate a specific type of change as given in Topic Paper 6. This states that landscape capacity to accommodate a specific type of change should reflect landscape character sensitivity, landscape value and visual sensitivity. The Topic Paper is not a definitive method of assessment but rather an aid in setting out some of the key principles, to encourage greater transparency in the thinking applied and to promote consistency in such work. For this reason, set out below is the methodology employed for each of the key stages of the study and in particular, the basis upon which key judgements will be regarding the sensitivity of the landscape to change and its potential to accommodate the development.

General parameters for different forms of minerals extraction are given in the table below. General parameters for different forms of waste development are summarised in the table below and set out in more detail in the Location and Design of Waste Management Facilities SPD 2011. This information will be used to help with the landscape and visual appraisals by setting some basic parameters against which to judge capacity of the landscape to accommodate the proposed development.

Table A2.5: Parameters of different types of minerals and waste related development

Proposed use	Parameters of proposed use
Minerals development	
Sand and gravel quarry (small)	• Fixed processing plant up to 10m high • Peripheral temporary soil storage/visual attenuation bunds to 3m • Temporary overburden stockpiles to 8m • Excavation depth below ground level up to 5m • Lorry movements 150 a day • Processed mineral stockpiles to 8m high • Height of proposal 10m
Sand and gravel quarry (large)	• Fixed processing plant up to 18m high • Peripheral temporary soil storage/visual attenuation bunds to 3m • Temporary overburden stockpiles to 8m • Excavation depth below ground level up to 5m • Lorry movement 350 per day • Processed mineral stockpiles 8m high • Height of proposal 18m
Stone quarry	• Processed mineral stockpiles 8m high • Peripheral temporary soil storage/visual attenuation bunds to 3m • Temporary stockpiles 8m high

	• Excavation depth below ground level 10m • Lorry movements 150 per day • Mobile processing plant up to 5m high • Height of proposal 5m
Borrow pit	• Mobile processing plant up to 5m • Excavation depth below ground level up to 5m • Height of proposal 5m
Extraction for cement manufacture	• Peripheral temporary soil storage/visual attenuation bunds 3m high • Temporary overburden stockpiles 8m high • Excavation depth below ground level up to 50m • Lorry movements 150 per day • Height of proposal 8m
Waste development	
Materials recycling facility (MRF)	• Typical site area 0.5-3ha • Enclosed building (70 x 40 m), building height up to 12m and 2.5m perimeter security fence • Commonly have a standard industrial building appearance • 20-30 waste collection vehicles or similar per day in with 10-20 bulk transport vehicles per day out
Indoor household recycling centre (HRC)	• Typical site area 1.2ha • Building up to 10m high and 2.5m perimeter security fence • Car movements 250 per day
Outdoor HRC	• Skips up to 4m high, perimeter security fence 2.5m • Car movements 250 per day
Composting – Open windrows (OWC)	• Typical site area 1-4ha • Often no building is required for composting operations, may take place in covered simple buildings • Office buildings of 30 to 100 m2 may be erected • Waste material requires shredding prior to being fored into windrows of 1.5 to 3 metres in height. The windrows are usually turned mechanically or aerated byfans. • 20 to 40 waste collection vehicles per day
Composting – In vessel (IVC)	• Typical site area 1-4ha • Facilities usually include a waste reception hall and the vessels themselves, which could comprise: silos, containers, agitated bags, tunnels and enclosed halls • Enclosed building (25 x 30 m), building height 3-7m • 20 to 40 waste collection vehicles per day
Anaerobic digestion (AD)	• Typical site area up to 1ha (can range from 0.15 - 0.6ha). • Depending on scale appearance can vary from low profile structures to standard industrial buildings • Enclosed building (30 x 15 m), building height of 10m plus several circular tanks of 6-10m diameter • 4 to 20 waste collection vehicles per day
Inert waste processing	• Typical site area 1-3ha • Facilities are often open air, but may take place in buildings • Mobile processing plant (crushing and screening) up to 5m high • Stockpiles up to 5m high, peripheral bunding up to 3m high • Height of proposal 5m
Energy from waste (EfW) / other thermal treatment processes	• Typically characterised by large enclosed buildings with tall chimneys. Facilities include receptor halls, cement kilns, furnaces, heat recovery facilities and control rooms. • Typical facilities require sites in the range 2-5ha in size.

	• Approximate building size (60-120 x 60m), building height up to 15-30m, stack height 30-80m and 2.5m perimeter security fence. • Commonly have a standard industrial building appearance, however many new installations have incorporated elements of visual interest/innovative design. • 20-50+ waste collection vehicles per day depending on scale/throughput
Mechanical biological / heat treatment	• Typical site area 1-3ha • Enclosed building (100 x 30m or less), building height up to 10-20m and 2.5m perimeter security fence • Commonly have a standard industrial building appearance • 20-30 waste collection vehicles per day
Deposit of inert waste to land (inert recovery / landfill)	• Peripheral temporary soil banks to 3m high • Profile basically flat • Lorry movement 100 per day • Skips up to 4m high • Height of proposal 4m
Non-hazardous / hazardous landfill	• Temporary clay engineered storage bunds to 8m high • Domed or graded final profile no flatter than 1:25, settlement of 25% • Landfill gas plant exhaust height 4m, two ISO containers • No landfill within 250m of property • Lorry movements 200 per day • Height of proposal varies

Desktop study

The following landscape character assessments (LCA) and studies act as key references:

- Cambridgeshire LCA (2003) (https://www.cambridge.gov.uk/sites/default/files/documents/cambridge-landscape-character-assessment-2003.pdf)
- Peterborough LCA and Urban Fringe Landscape Sensitivity Study (2007)
- Cambridgeshire Landscape Guidelines 1991
- Countryside Agency (2004) Countryside Character Volume 6: East of England (http://publications.naturalengland.org.uk/publication/4848517780602880?category=31019)
- Landscape East (2011) East of England Regional Landscape Framework (http://landscape-east.org.uk/user-guide)
- Natural England (2014) National Character Area profiles (https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles)

Site boundaries and information on potential environmental constraints will be gathered through Level 3 of the site assessments. This will include public rights of way, environmental and cultural designations. As a result it will be possible to appraise in the field which designations would potentially be affected by the proposed development.

The study areas will be defined through a combination of desk study i.e. analysis of landform and a visual assessment in the field examining the extent of visibility from publicly accessible areas. The extent of visibility is closely related to topography, as it is generally hills and ridgelines that contain views and act as visual watersheds.

Site visits

Site visits will be undertaken to confirm and amend where necessary, the results of the desk study and provide additional landscape character and contextual information. In addition, the visibility of receptors will be checked and visual assessments of the sites are to be undertaken from publicly accessible locations. The results will be recorded on survey forms.

Analysis and presentation of results

The analysis will draw upon the information gathered during the desk study and field survey work. The different aspects of landscape character sensitivity, visual sensitivity and landscape value will be judged on a five point scale for each site i.e. high, medium to high, medium, low to medium or low. These will be used to assess the site landscape capacity for accommodating the proposed development with and without potential mitigation and also judged using a five point scale.

Judgements on the effects of proposed development and mitigation will not be based upon the specific design of each proposal as this will be considered as part of the planning process. If the development on a particular site varies significantly from the parameters outlined above or the development and mitigation is designed poorly without adequate reference to landscape character and views, the capacity of a site is likely to be lower than what is assessed. Therefore proper design and integration is essential to each proposal.

Mitigation

Potential mitigation opportunities will be assessed with the aim of conserving and enhancing landscape character in accordance with the LCA and Green Infrastructure studies. Site design should allow space for mitigation screening and gains to maximise biodiversity benefits, minimise views from public rights of way, sensitive receptors and important environmental features.

Landscape capacity

Capacity is likely to vary according to the type and nature of change being proposed. Reaching conclusions about capacity means making a judgement about whether the amount of change proposed can be accommodated without having unacceptable adverse effects on the character of the landscape (related to landscape character sensitivity), or the way that it is perceived (related to visual sensitivity) and without compromising the values attached to it (related to landscape value).

Landscape character sensitivity

Landscape sensitivity can be defined as the extent to which a landscape type or area can accept change of a particular type and scale without unacceptable adverse effects on its character. It is based on judgements about the sensitivity of aspects most likely to be affected:

- Natural factors - extent and pattern of semi-natural habitat.
- Cultural factors - land use, enclosure pattern, settlement pattern, field boundaries.
- Landscape condition - representation of typical character, intactness.
- Aesthetic factors - scale, enclosure, pattern, form / line, movement.

Table A2.6: Landscape Character Sensitivity Ratings

Landscape Character Sensitivity	Definition
Low	A landscape or landscape features of low sensitivity potentially tolerant of substantial change e.g. developed or derelict landscape setting where new development could be accommodated without adversely affecting character.
Medium	A landscape or landscape features of moderate sensitivity reasonably tolerant of change.
High	A landscape or landscape feature of particularly distinctive character susceptible to relatively small change e.g. rural landscape with few uncharacteristic and detracting man-made features where new development could not be accommodated without adversely affecting character.

Landscape value

Landscape value is concerned with the relative value that is attached to different landscapes. In a policy context the usual basis for recognising certain highly valued landscapes is through the application of a local or national designation. Yet a landscape may be valued by different communities of interest for many different reasons without formal designation. Recognising, for example, perceptual aspects such as scenic beauty, tranquillity or wildness, special cultural associations, the influence and presence of other conservation interests, or the existence of a consensus about importance, either nationally or locally. In the context of this study a professional judgement has been made on the value of the landscape within the setting of a site, giving consideration to, for example, sites or areas designated for their landscape value.

Designations that are most relevant to this study are those which are related to protection of landscape or buildings partially or wholly for their contribution to the landscape. There are no national landscape designations (for example, National Parks or Areas of Outstanding Natural Beauty) and no local landscape designations within Cambridgeshire and Peterborough, however the plan area does include Green Belt land.

The plan area also has other designations that are important components of the landscape and contribute towards landscape value, although these are not protected primarily for their contribution to the landscape (e.g. nature conservation sites and historic environment designations).

Part of the judgement of landscape value lies in the views of communities of interest, although obtaining these views is not part of this study. In all cases landscape value is evaluated as medium unless there is an obvious reason to give a higher or lower value (e.g. elevate because of a landscape designation, or lower because of a high degree of disturbance and degradation).

Table A2.7: Landscape value rating

Landscape value	Definition
Low	No relevant designations. Degraded or possibly derelict landscape.
Low to medium	Zone with no relevant designations that is not degraded or a derelict landscape.
Medium	All landscapes unless there is an obvious reason to give a higher or lower value. The zone lies within, or within the setting of, a relevant local designation but it is not considered that development would adversely affect it.
Medium to high	The zone lies within, or within the setting of, a relevant local designation and it is considered that development would adversely affect it
High	The zone lies within, or within the setting of, a relevant national designation

Visual sensitivity

Visual sensitivity is based on the nature of change proposed and its interaction with visual aspects of the landscape, for example:

- The nature of proposed change - considering factors such as height, massing, colour, movement and how it would blend in with or contrast with other elements in its setting;
- General visibility of the proposed development - considering influences of enclosing or screening elements such as landform, hedgerows, trees, woodlands and built development; and
- Population - numbers and types of viewers. The sensitivity of visual receptors (or viewers) is dependent on the location and context of the viewpoint and viewing opportunities, the occupation / pastime of the receptor and the importance of the view. The sensitivity of viewers can be expressed as:
- Low - Viewers with a passing interest in their surroundings, e.g. motorists, people at their places of work;
- Medium - Viewers with a moderate interest in their surroundings, e.g. people engaged in outdoor sport or recreation; and
- High - Viewers with proprietary interest and prolonged viewing opportunities, e.g. a residential property or users of a public rights of way. Those whose attention maybe focused on the landscape.

Table A2.8: Visual sensitivity rating

Visual sensitivity	Definition
Low	● Nature of change proposed - unobtrusive in the context of its setting. ● General visibility of the proposed development - enclosed, screened. Only visible from short distances. ● Population - Seen by few viewers, or predominantly by viewers with a passing interest in their surroundings, e.g. motorists
Medium	● Nature of change proposed - moderately obtrusive in the context of its setting. ● General visibility of the proposed development - visible but partially enclosed or screened. Not visible from long distances. ● Population - seen by a moderate number of viewers. Seen by viewers to be of medium or lower sensitivity.
High	● Nature of change proposed - highly obtrusive in the context of its setting. ● General visibility of the proposed development - highly visible due to the open, exposed nature of the surroundings. Might be visible from long distances.

Visual sensitivity	Definition
	● Population - seen by a large number of viewers. Seen predominantly by viewers to be of high or lower sensitivity.

Historic environment

The Level 3 assessment will have broadly identified potential impacts of the proposed development on the historic environment and heritage assets (including setting) and the potential to avoid and/or mitigate such impacts. Where significant adverse impacts are identified detailed assessment may be appropriate (Level 3).

This process will, as appropriate and in line with a proportionate evidence base, reflect published Historic England guidance on assessment of potential site specific allocations[1].

The Level 3 detailed assessment will involve an initial desktop assessment to investigate and confirm the identified impact(s) on the elements that contribute to the significance of the heritage asset(s), complemented with ground truthing and/or field surveys[5]. Information sources may include: Historic Environment Records, GIS, aerial photographs, local knowledge and other information where available (such as historic planning applications, local surveys, etc.). This will assist in characterising and assessing elements of the historic environment, its context and setting, and help to identify any other visible archaeological remains and ground-truth the predictions made during previous assessments regarding the nature and extent of the potential impacts on historic asset(s) (and setting) in the surrounding area. Where potentially adverse impacts are identified that would likely result in harm to heritage assets, consideration will be given to measures to avoid and / or reduce these to an acceptable level. Opportunities for the proposed development to contribute towards enhancement of the significance of heritage assets will also be identified where appropriate.

This process will result in a series of historic environment assessments summarising the available data and site visit findings, supplemented with a gazetteer of recorded historic environment assets and illustrative site photos (as necessary).

Both assets with formal designation (Scheduled Monuments, Listed Buildings, etc) and those without formal designation are to be included.

It is not considered that any detailed field assessment (such as systematic archaeological survey or trial excavations) would be undertaken as part of this process, or indeed as any part of the plan-making process (as such work is not proportionate to the task / stage in the plan-making process). All such works would be undertaken and funded by the developer, and would normally form part of the EIA work carried out in connection with a specific development proposal.

[5] The NPPF (paragraphs 132 – 135 and 139), requires that proposed development should avoid harming the significance of heritage assets, which includes effects on their setting. It should be noted that this refers to the determination of planning applications and not the assessment of potential site allocations. However, in order to align with the NPPF and current guidance the Level 3 assessment has incorporated this as appropriate and at a level that is proportionate to the plan-making stage. Where it is necessary to undertake a historic environment assessment published / adopted Historic England guidance will be taken into account at an appropriate level, e.g. Historic Environment Good Practice Advice (GPA) in Planning Notes, in particular GPA 1: The Historic Environment in Local Plans (https://historicengland.org.uk/images-books/publications/gpa1-historic-environment-local-plans/) and GPA 3: The Setting of Heritage Assets (https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/).

Risk assessment and sensitivity analysis

Risk assessment and management techniques are commonly used as decision making tools in policy making and regulation, and are useful in providing a basis for site-specific decisions. For example in the allocation of sites and land-use planning the assessment can incorporate wider issues as well as site specific impacts resulting from a particular installation / development proposal. Using defined criteria the most appropriate risk reduction measures are chosen that reduce the risk to an 'acceptable' level at an 'acceptable' cost. The precautionary principle is also an important element in risk assessment.

The method adopted considers both the likelihood and seriousness of a risk event. In addition the definitions used for the different levels have been adapted to address the specific type of risk being evaluated, e.g. pollution potential, environmental risk, receptor sensitivity, etc. (see below tables). The level of risk is determined as a product of the likelihood and consequence (see below tables).

In order to undertake a robust risk assessment and sensitivity analysis the context surrounding the relevant issues should firstly be established. This includes the collection and analysis of background information regarding the site, surrounding environment (both natural and built) and the nature of the proposed development. Evidence gathered during previous stages of assessment and any new information released or brought forward as a result of consultation undertaken during the plans preparation will act to establish the context.

Secondly, the risks (including potential sources and impacts) need to be identified. Again the previous assessment and new information brought forward will be considered, however the risks are largely a product of the operations, resource requirements, outputs and ability of the environment to accommodate these.

Thirdly, an analysis of the risks is required to determine the likelihood and consequence; this includes consideration of controls currently in place (and their effectiveness) as well as the ability of the environment to deal with the risk and sensitivity of receptors. The risks are also evaluated at this stage to determine whether the nature and level of risk is acceptable or not.

Lastly, where the risk is deemed to be unacceptable the potential treatment or management measures will be considered (e.g. standard operational mitigation and control measures). Risks can be managed in many ways such as through elimination, transferral, retention or reduction (this is the most common approach to risk management in policy and regulatory decisions). Risk reduction choices are based on much wider issues than the results of the assessment alone and may include factors such as health, environment, social and economic issues as well as the perception of the risk, viable management methods, etc. The expected reduction in the level of risk resulting from implementation of the potential treatment or management measures assists in determining whether the residual risk would be considered acceptable.

The risk assessment and sensitivity analysis will be recorded using the assessment matrix detailed in the below table.

Table A2.9: Zones for potentially significant dust effects

Description	Potential Distance for significant adverse effects (distance from source)		
	Soiling	PM_{10}*	Vegetation
Large sites with high use of haul roads	100 m	25-50 m	25 m
Moderate sized sites, with intermediate use of haul roads	50 m	15-30 m	15 m
Minor sized sites with limited use of haul roads	25 m	10-20 m	10 m

* Significance is based on the 2007 objectives contained within the Air Quality (England) Regulations (2000)[5] and later amendments[6], which allow 35 exceedences/year of 50 µg/m^3 and takes account of existing high concentrations in the area. A range has been specified, as it is difficult to assess possible PM_{10} impacts, especially in an area with high baseline concentrations.

Source: Environmental Statement for Thames Gateway Bridge 2004[7].

Table A2.10: Likelihood definitions

Rating	Score	Criteria
Almost certain	**A**	There is a high likelihood of the risk event happening in most circumstances.
Probable	**B**	The event probably will occur in most circumstances.
Possible	**C**	Would not surprise if risk event occurred. The event should occur at some time (i.e. once in a while).
Unlikely	**D**	Could occur at some time but is unlikely.
Rare	**E**	Within the realms of possibility but extremely unlikely to occur. The event may occur only in exceptional circumstances.

Note: Descriptions are indicative only and provide a guide to relative consequences

Table A2.11: Consequence definitions

Rating	Score	Criteria
Catastrophic	**5**	• Adverse environmental impacts resulting from operations are not able to be reduced through mitigation measures, boundary alterations or planning controls. Overall the operational impact would be negative and result in significant off-site impacts, loss of features and severe degradation of quality. No viable enhancement opportunities (such as restoration or creation of new priority habitats) are presented by the proposal. • Severe (irreversible) environmental damage. • Highly sensitive receptors located on site or adjacent the site. • Incompatible land use on site or adjacent the site, conflict resolution measures (e.g. negotiations and mitigation) are not viable.
Major	**4**	• Some adverse environmental impacts resulting from operations are able to be reduced through mitigation measures, boundary alterations or planning controls however others may result in significant off-site impacts, loss of features and degradation of quality, further investigation would be required to determine the nature and extent of potential impacts and effectiveness of mitigation measures. Enhancement opportunities (such as restoration or creation of new priority habitats) presented by the proposal may not be feasible or do not balance out adverse impacts.

Rating	Score	Criteria
		• Critical event, which with proper management, will be endured however is likely to result in medium to long term (reversible) environmental damage. • Highly sensitive receptors within close proximity to the site. • Incompatible land use within close proximity to the site, conflict resolution measures (e.g. negotiations and mitigation) are able to reduce conflict however significant residual off-site impacts may remain.
Moderate	**3**	• Adverse environmental impacts resulting from operations are able to be reduced to acceptable levels through mitigation measures, boundary alterations or planning controls. However there may be residual environmental nuisance impacts for more sensitive receptors that may require further investigation. Enhancement opportunities (such as restoration or creation of new priority habitats) presented by the proposal are feasible but overall beneficial outcome would be limited. • Significant event, which can be managed under normal procedures resulting in short to medium (reversible) environmental damage. • Receptors with a medium to high level of sensitivity within the immediate local area. High: hospitals and clinics, retirement homes, hi-tech industry, painting and furnishings and food processing. • Incompatible land use within the immediate local area, conflict resolution measures (e.g. negotiations and mitigation) are able to reduce conflict to acceptable levels.
Minor	**2**	• Adverse environmental impacts resulting from operations can be reduced to acceptable levels relatively straightforward through mitigation measures, boundary alterations or planning controls. The overall impact is likely to be neutral as enhancement opportunities (such as restoration or creation of new priority habitats) presented by the proposal are viable and result in beneficial outcomes. • Consequences can be readily absorbed but management effort is still required to minimise impacts. • Receptors with a low to medium level of sensitivity within the wider local area. Low: farms, industry and outdoor storage. Medium: schools, residential areas, food retailers, glasshouses and nurseries, horticultural land and offices. • Land uses are broadly compatible; conflict resolution measures (e.g. negotiations and mitigation) are able to reduce conflict to acceptable levels.
Negligible	**1**	• There is limited potential for adverse environmental impacts resulting from operations (those that exist are relatively straightforward to address). Enhancement opportunities (such as restoration or creation of new priority habitats) presented by the proposal are viable and will result in beneficial outcomes. • Insignificant impact. • Sensitive receptors are removed from the site. • Land uses are compatible.

Note: Descriptions are indicative only and provide a guide to relative consequences.

Table A2.12: Risk assessment matrix

	Consequences				
Likelihood	**1 (Negligible)**	**2 (Low/Minor)**	**3 (Moderate)**	**4 (Major)**	**5 (Catastrophic)**
A Almost Certain	Moderate	Moderate	High	Very High	Extreme
B (Probable)	Low	Moderate	Moderate	High	Very High
C (Possible)	Negligible	Low	Moderate	Moderate	High
D (Unlikely)	Negligible	Low	Low	Moderate	Moderate
E (Rare)	Negligible	Negligible	Negligible	Low	Moderate

Table A2.13: Risk assessment matrix

Assessment criteria	**Risk identification**	**Risk value** (no management)	**Management measures**	**Risk value** (with management)	**Residual risk**
Economic					
Environmental					
Social					
Spatial - Access and transport					
Spatial - Land use and infrastructure					
Operational – Minerals / Waste					

Transport

It should be noted that this assessment is not intended to form a comprehensive Transport Assessment (TA). Rather it is intended to provide a general framework for assessing the capacity of the transport network and assist in informing the decision making process and determine whether transport impacts are likely to be acceptable. It is the developer's responsibility to prepare a full TA to accompany a planning application, should the site in question be allocated.

The detailed assessment will, where required, involve both further desktop based assessment and site surveys or observations in order to determine:

- Current traffic flows on surrounding highways, including approximate percentage of HGV's and description of local receiving road network;
- Approximate number of vehicle movements reasonably likely to be generated from the proposed development;

- Location and form of site access arrangements including any readily identifiable access constraints, and where possible suggest more appropriate access points and / or routing;
- Existing conflict levels on access routes and potential impacts relating to increased heavy commercial vehicles traffic;
- Capacity of the existing transport infrastructure network to accommodate potential vehicle movements resulting from the proposed development, including potential mitigation or control measures and requirements for upgrades and improvement works;
- Capacity for sustainable transport options, (e.g. proximity to railways, wharf heads, existing plant and opportunities to co-ordinate operations, etc and proximity to sustainable transport links; and
- Identification of potential cumulative impacts from existing land-uses and potential future uses (such as allocations), including proximity to proposed major development(s).