Nottinghamshire and Nottingham Waste Core Strategy – Preferred Approach

Sustainability Appraisal & Strategic Environmental Assessment

May 2011

Revision Schedule

Waste Core Strategy – Preferred Approach SA/SEA
May 2011

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1 Introduction

1.1 Background to the Preferred Option Document

Nottinghamshire County Council and Nottingham City Council - ('the Councils') are preparing a Waste Development Framework (WDF) that will provide the overall planning policy framework for waste development in Nottinghamshire.

As part of the WDF process, in October 2006 the Councils produced for consultation a "Waste Core Strategy and Development Control Policies Issues and Options Paper" seeking views on planning policies for future waste management within the area.

Since then, new Government guidance has been introduced and a revised Issues and Options consultation exercise was undertaken in October 2010 (Waste Strategy Further Issues and Options 2010). This consultation exercise aimed to build on the choices and options put forward in 2006 for managing waste in the area over the next 20 years.

The next step in the WDF process is the preparation of a Preferred Option Document (Pre-Submission) which sets out the Councils' selected options for waste planning in the area. The Councils have used the responses from both the 2006 and 2010 consultations, along with other additional evidence submitted by stakeholders and interested parties to develop the preferred approach. The Preferred Option Document explains each of the issues and alternatives that the Council has considered and then sets out a preferred approach.

1.2 Sustainability Appraisal (SA)

SA is an ongoing iterative process that involves identifying and evaluating a plan's effects on the environment, the economy and social aspects. It also suggests ways of minimising any identified adverse effects as well as maximising on beneficial effects. The findings of the SA should be reflected in the adopted development plan documents.

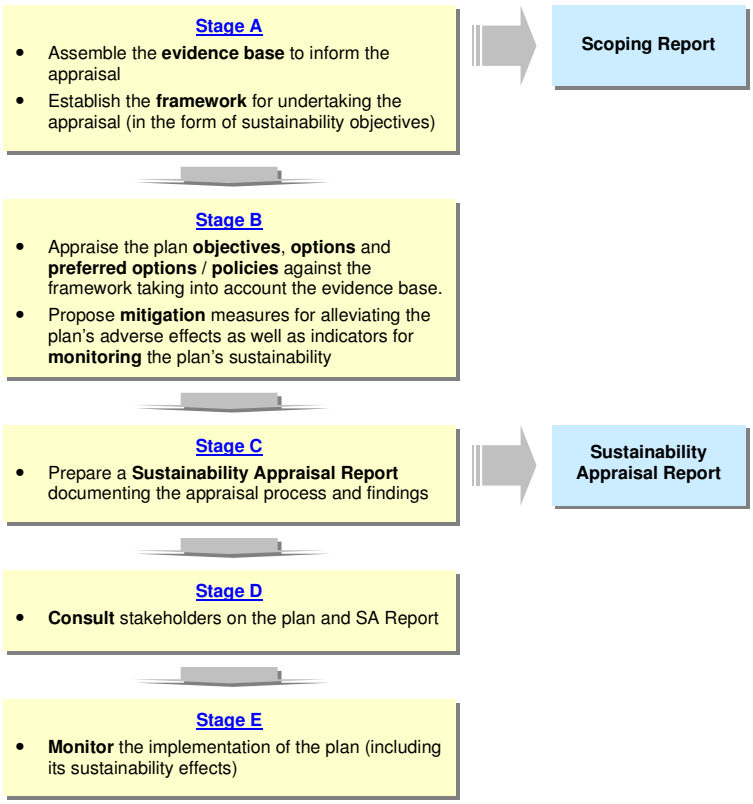
In the UK, SA should incorporate the requirements of the Strategic Environmental Assessment Directive[1]for environmental assessment of plans. This report sets out the SA (incorporating the SEA Directive requirements) of the Councils' Waste Core Strategy Preferred Option. It appraises the key issues and options considered as well as the Council's Preferred Options. The appraisal of options – or alternatives – is a key part of the development plan preparation process and a legal requirement under SEA legislation.

[1] *Strategic Environmental Assessment Directive (2001/42/EC).*

1.3 The SA process

SA is based on a five-stage approach – see Figure 1.1

Figure 1.1: Five-stage approach to SA



Stage A involves establishing the framework for undertaking the SA – essentially a set of sustainable development objectives against which each development plan document can be assessed – together with the evidence base that will help to inform the appraisal. This information is documented in a Scoping report. The Council has produced a Revised Scoping Report which is available from the Council.

This Sustainability Report primarily focuses on Stage B of the SA process testing the Options against the SA framework and providing a sustainability commentary for each issue/option assessed. The findings of the appraisal are intended to assist the Council in developing and refining the options to be taken forward in Preferred Option Document and on to the next step of the plan making process (Submission Stage).

2 Methodology of Appraisal

2.1 Introduction

This stage of the SA process involves assessing the issues and options against the SA framework – essentially the SA objectives (see Table 2.1). This reflects Government Guidance[2] which states that, *"The options need to be compared with each other and with the current social, environmental and economic characteristics of the area which is subject to the DPD and the likely future situation without a DPD. In doing so they need to be tested against the SA framework".* It focuses on Stage B of the SA process.

The need to consider and appraise options stems partly from the requirements of the SEA Directive:

Under the SEA Directive, plan and programme proponents should ensure that: *"reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated"* (Article 5(1)) and the Environmental Report should include *"an outline of the reasons for selecting the alternatives dealt with"* .

(Annex I(h))

It should be noted that it is not the role of the SA to determine which of the options from a given set should be chosen as the basis for moving forward; SA simply provides decision-makers – in this case the Council - with information to help inform their decision.

The table below outlines the SA objectives and the underlying criteria used in undertaking the issues and options appraisal.

[2] *ODPM (2005). Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents.*

Table 2.1 SA objectives and underlying Criteria

Objective	Decision making criteria
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	• Will the plan/proposal provide waste treatment/disposal sites close to where the waste is produced? • Will it reduce the distance waste is transported? • Will it reduce the cost of municipal waste treatment/disposal? • Will it help to reduce fly-tipping? • Will the plan identify adequate resources to meet local and national requirements over the plan period? • Will the plan identify suitable areas of land to serve current/future markets?
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	• Will the plan/proposal have an adverse affect on internationally, nationally or locally important sites or legally protected species? • Will it affect habitats or species identified within the Nottinghamshire Local Biodiversity Action Plan (LBAP)? • Will it restore or create new habitat in line with LBAP priorities? • Will it support the retention/enhancement of the county's green infrastructure?
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	• Will the plan/proposal reduce overall transport distances for minerals/waste? • Will it reduce road haulage of minerals/waste? • Will it promote alternative forms of transport? • Will it reduce/increase road congestion? • Will it result in sites that are well related to the main highway network? • Will it require new transport infrastructure to be developed?
4. Protect the quality of the historic environment above and below ground.	• Will the plan/proposal have an adverse impact upon heritage assets and/or their setting, including archaeological remains and historic buildings? • Will it enhance or increase our understanding of the historic environment?
5. Protect and enhance the quality and character of our townscape and landscape.	• Will the plan/proposal have an adverse impact on local landscape character or areas of important townscape • Will it have an adverse affect on the Green Belt? • Will it affect areas of public open space? • Will it lead to landscape/townscape improvements?

Objective	Decision making criteria
	• Will it result in development that is sympathetic to its surroundings in terms of design, layout and scale? • Will it contribute to the availability of local building materials to enable local distinctiveness to be retained in conservation projects and reflected in new development?
6. Minimise impact and risk of flooding.	• Will the plan/proposal increase the risk of flooding? • Will it help to alleviate flood risk or the impact of flooding?
7. Minimise any possible impacts on and increase adaptability to climate change.	• Will the plan/proposal increase emissions of greenhouse gases from minerals and waste activities? • Will it reduce emissions of greenhouse gases? • Will it encourage the use of renewable energy sources? • Will it help to reduce our vulnerability to the impacts of climate change?
8. Protection of high quality agricultural land and soil.	• Will the plan/proposal have an adverse impact on soil quality? • Will it lead to the irreversible loss of best and most versatile agricultural land?
9. Promote more efficient use of land and resources	• Will the plan/proposal promote the sustainable use of primary minerals? • Will it encourage the use of recycled and secondary aggregates? • Will it prevent the sterilisation of important mineral resources? • Will it promote sustainable waste management and encourage movement of waste up the waste hierarchy? • Will it reduce waste/provide for re-use of waste materials? • Will it make use of previous developed land or buildings?
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	• Will the plan/proposal minimise energy needs? • Will it contribute to renewable/low carbon energy targets? • Will it offset the use of fossil fuels?
11. Protect and improve local air quality.	• Will the plan/have an adverse impact on local air quality? • Will it adversely affect a designated Air Quality Management Areas (AQMAs)?
12. Protect and improve water quality and promote efficient use of water.	• Will the plan/proposal have an adverse impact upon water quality?

Objective	Decision making criteria
	• Will it increase demand for water? • Will it help to improve existing water quality? • Will the proposal incorporate sustainable water management and/or drainage?
13. Support wider economic development and promote local job opportunities	• Will the plan/proposal help to increase training and employment opportunities in Nottinghamshire? • Will it help to enable wider economic development?
14. Protect and improve human health and quality of life.	• Will the plan/proposal minimise adverse impacts of minerals and waste activity on human health and levels of nuisance including dust, particulate emissions, noise (including traffic noise), vibration, visual amenity and light pollution. • Will it promote best practice in the operation and restoration of sites? • Will it help to enhance health and well-being through the provision of new or improved public open space and access? • Will it lead to a loss of public open space/reduction in public access?

Each option/issue/objective (as applicable) was assessed in terms of the nature of its impacts (beneficial/adverse/neutral/uncertain), its relative magnitude and duration over time. Matrices were used to identify the sustainability effects and these are provided in Appendix 1. The matrices allow for the comparison of issues/options/objectives and also consist of a summary of key issues raised which form the basis of the SA findings.

The appraisal was a qualitative exercise based on a combination of expert judgement and analysis of baseline data gathered in the Scoping Report and other available background information.

2.2 Issues and Options Appraised

The following issues and options were considered when developing the Preferred Option Document.

- Vision and objectives
- Planning for future needs
- Meeting future needs
- Disposal (non-hazardous waste)
- Managing inert waste (construction and demolition waste)
- Location of new sites
- Hazardous waste
- Site search criteria
- Safeguarding
- Extension to existing sites

3 Appraisal Findings

3.1 Vision

The Councils' vision for waste management is:

By 2031 Nottinghamshire's communities and businesses will be taking responsibility for managing their waste locally and in a sustainable manner. We will be supported by an ambitious and modern waste industry that successfully and effectively manages waste by treating it as a resource, in line with the waste hierarchy. Together we will be producing less, reusing more and striving to exceed national recycling targets as far as practically possible. Disposal will be the last resort once options to re-use, recycle or recover have been exhausted.

All waste related development will respect, and where possible enhance, our environment, wildlife, landscape and heritage. Individual developments and our overall approach to waste management will successfully manage the possible impacts of climate change. Waste management operations will have a minimal impact on the quality of life and health of those living and working in, or visiting, Nottinghamshire.

The geographical spread of our waste management facilities will be closely linked to our concentrations of population, with large facilities around the Nottingham urban area, Mansfield and Ashfield and medium sized facilities close to our towns of Worksop, Retford and Newark. Resource Recovery Parks will be serviced with excellent transport links to serve a wide area and will be part of a larger development supporting green energy or other sustainable technologies. Isolated communities will benefit from small scale community led schemes and farm based initiatives to provide local recycling facilities but this will not compromise the protection of our green belt

SA Findings – The proposed vision is in general accordance with sustainability principles. It seeks to manage waste in a way that protects the natural and built environment. It also promotes managing waste as a valuable resource in line with the waste hierarchy reducing the amount of waste sent to landfill. The vision seeks to ensure that waste operations have a minimal impact on the quality of life and health of Nottinghamshire's residents, and are well located close to sources of arisings. The vision seeks to adapt to the effects of climate change but does not seek to mitigate against climate change. It also does not include the need to make adequate provision of the required waste management facilities and does not promote economic growth/job creation. The vision should be balanced in its approach to waste management – protecting the environment, meeting needs (social), and supporting investment, innovation/new technologies in waste management to create job opportunities in the waste sector.

It is recommended that the Councils should consider integrating climate change mitigation within its waste management vision. It is also recommended that the vision wording should incorporate the need to make adequate provision for waste management facilities to meet identified needs and in a way that supports innovation and the local economy.

3.2 Objectives

In order the deliver the above proposed vision, the Councils have prepared the following strategic objectives:

1. **Strengthen our economy** – by promoting a diverse local economy that minimises waste production and maximises the re-use, recycling and recovery of waste by making the most of opportunities for businesses, local authorities and communities to work together and use waste as a resource. Encourage investment in new and innovative waste management technologies and learn from best practice elsewhere.
2. **Care for our environment** – protect our landscape, countryside, wildlife and valuable habitats from harmful development and make the most of opportunities to enhance existing open space, and provide new habitats. Protect water, soil, and air quality across the county. Look after our heritage assets and their settings, including archaeological remains. In urban areas; protect the character of our existing townscapes.
3. **Community well-being** – protect local amenities and quality of life from impacts such as dust, traffic, noise, odour, visual impact etc. and address local health concerns. Make sure that local people have the chance to be involved in decisions about new waste management facilities by providing more information, encouraging wider involvement and targeting key groups or individuals where appropriate.
4. **Energy and climate** - encourage the efficient use of our natural resources by promoting waste as a resource to be re-used, reduce the need to transport waste, minimise energy use and encourage use of combined heat and power where this can help to offset fossil fuel use. Accept that some change is inevitable and manage this by making sure that all new waste facilities are located and designed to withstand the likely impacts of flooding, higher temperatures and more frequent storms.
5. **Sustainable transport** – encourage alternatives to road such as water and rail where practical, locate sites close to sources of waste and/or end-markets to reduce transport distances and make use of existing transport links to minimise the impact of new development.
6. **Meet our future needs** - aim to be self-sufficient by providing enough sites to manage the equivalent of Nottinghamshire's waste over the plan period – making sure that there is a mix of site types, sizes and locations to help us manage waste locally wherever possible. Manage our waste sustainably by meeting current and future targets for recycling and recovering our waste and moving away from landfill. Safeguard suitable existing and/or potential future sites where appropriate. Site new waste facilities to support new residential, commercial and industrial development across the county.
7. **High quality design and operation** – make sure that all facilities are designed and operated to the highest standards. Improve the understanding, acceptance and appearance of waste management facilities which are an essential part of our infrastructure

SA Findings – Overall, the proposed objectives were found to be compatible with the SA objectives. No incompatibility was found between the SA objectives and the proposed Waste Core Strategy objectives. The Waste LDF objectives seek to manage Nottinghamshire's waste needs in a way that protects the environment (objectives 2 and 3), contributes to economic growth (objective 1) as well as ensuring communities are provided with adequate facilities to meet anticipated needs (objective 6) and that facilities are designed and operated to the highest standards (objective 7).

Objective 5 encourages use of sustainable transport modes as well as reducing the need to transport waste significant distances by road. This has the potential to reduce the negative impacts associated with HGV movements including GHG emissions, air pollution and noise pollution etc. Objective 4 seeks to encourage efficient use of resources as well as mitigate and adapt to climate change.

3.3 Planning for future needs

The existing waste management capacity in Nottinghamshire will not meet future needs. The Councils have to make provision for future needs and the Issues and Options 2006 suggested the following three options for achieving this:

- Make only the minimum provision and rely on early monitoring and review of the Waste Core Strategy
- Make maximum provision for future waste growth with no restrictions
- Make maximum provision but only allow a phased release of sites based on monitoring evidence

The appraisal of the proposed options revealed that:

Option A- Although planning for the minimum number of facilities would lead to less land take and therefore less environmental impacts associated with waste management, this option could have negative effects on sustainability if there was a lack of capacity. This could lead to waste that would otherwise be dealt with in Nottinghamshire and Nottingham having to be transported out of the sub-region for long distances most likely by road leading to negative climate change, air quality and other road transport related effects including traffic congestion by HGVs.

Option B -This option was found to support SA objectives on providing adequate capacity for waste management needs, minimising the need to travel (reduces the need to transport waste further), reducing contribution to climate change and reducing air pollution. Making maximum provision could also encourage industry to invest in facilities and therefore this option could have some positive effects on contributing to the local economy.

However, option B was found to have a major potential disadvantage in case maximum provision resulted in over provision of capacity especially of disposal facilities (landfilling/incineration). This could encourage management routes that are not in accordance with the waste hierarchy as well as encourage waste imports into Nottinghamshire. It could also hinder investment in other waste management facility types and stifle innovation in waste management technologies used in the sub-region. This option would also involve higher land take compared to Options A and C which could result in greater negative environmental effects although the actual effects can not be adequately judged at this stage.

Option C - This option allows a phased release of sites based on a plan, monitor and manage approach. It was found to be largely consistent with the SA objectives as it helps reduce the potential for under or over provision and the associated potential negative effects including encouraging waste exportation or importation thus increasing distances waste is transported for management. It also has the benefit of providing certainty to the waste sector through monitoring of capacity for the different waste management facilities which can encourage investment in the sector and contribute to positive effects on the local economy. It also reduces unnecessary land take as it releases sites based on need assessment which could be beneficial for the environment.

Recommendation: It is recommended that when planning for future needs, the Councils should seek to balance the risks of overprovision/under provision with ensuring the need for sustainable waste management (in terms of environmental

protection, economic growth and social needs). Option C is closely aligned to meeting future provision sustainably.

3.4 Meeting future needs (MSW and C&I)

The Councils have considered four alternative options for the future management of municipal, commercial and industrial waste (MSW and C&I). These options start from the 'baseline' option of simply doing the minimum necessary to meet the national targets for recycling and recovering energy and three more ambitious options testing how far waste could be driven up the waste hierarchy by making greater use of recycling and/or recovery.

Option A – This option proposes recycling 50% of MSW, provision of no new energy recovery and disposal of around 1million tonnes (mt) of MSW and C&I waste per annum to 2031.

This option would require a significant proportion of MSW and C&I waste to be disposed in landfill (21 mt by 2031). Due to the shortage of suitable sites within the County, the waste may need to be disposed off elsewhere (Lincolnshire or Yorkshire) leading to waste being transported (most likely by road) for long distances. This has potential for negative environmental effects for example increase in GHG emissions and other associated negative road transport impacts – (congestion, noise etc). An alternative to exporting waste would be to dispose locally through land raising. This option is considered to have potential for significant negative environmental and amenity effects although it can provide land reclamation benefits in some cases. Overall, option A is considered to be unsustainable.

Option B – This option requires recycling 60% of MSW and C&I by 2020, increasing to 70% from 2025 onwards. It also proposes no new energy recovery capacity and a reduction of disposal of MSW and C&I to 400,000tonnes per year (tpa) from 2025.

To achieve the proposed high recycling targets, this option would require significant investment in recycling infrastructure. Although the reduction in the amount of waste requiring disposal is considered to be positive, significant quantities of waste would still require to be landfilled (17mt over the plan period) leading to similar sustainability issues as A above in terms of transportation and disposal. Overall, this option would offer benefits in increasing recycling capacity but it would still require disposal of significant amounts of waste which is considered to be unsustainable.

Option C – This option focuses on energy recovery for MSW (40%) and C&I (48%) from 2020 as well as recycling 50% of MSW. It would lead to a significant reduction in the amount of waste requiring disposal (13mt over the plan period) but would require investment and commitment from the waste industry especially with regard to the treatment of C&I waste. Compared to options A and B, this option is likely to have less environmental impacts associated with waste movement and disposal. It would also lead to an increase in energy generated from waste and it promotes overall resource efficiency by moving waste up the hierarchy. Although judged to be a sustainable option, this option limits the amount of waste that can be recycled as it only requires the 50% target set for MSW to be met.

Option D – This option promotes both recycling and recovery with recycling levels set at 60% and increasing to 70% by 2025 and recovery from up to 30% from 2020 onwards. Like Option B, achieving these targets would require significant

investment in increased recycling capacity. This option would also require new energy recovery facility/ies but not as much as option C. It would also lead to more waste being moved up the waste hierarchy as well as provide green energy.

Compared to options A and B, this option would lead to reduced GHG emissions associated with transporting significant quantities of waste for disposal as well as the potential negative environmental effects associated with non-hazardous waste disposal. Overall, this option is considered as having the potential to deliver a sustainable waste management option for Nottinghamshire.

Preferred Option – The Preferred Option is similar to Option D but aiming to achieve an overall target of recycling 70% of MSW and C&I by 2025 supported by additional energy recovery whether this can used to divert waste from landfill. The preferred option therefore is considered as having the potential to deliver a sustainable waste management option for Nottinghamshire.

3.5 Disposal (non-hazardous waste)

Nottinghamshire is facing a major shortfall in disposal capacity for non-hazardous waste and this is one of the key challenges for the WCS. Given the extreme shortages of suitable sites, the Councils have looked at three options – exporting the waste for disposal out of the County or developing land-raise sites within Nottinghamshire.

Option A – Option A seeks to make provision for the disposal of non-hazardous waste through exporting it elsewhere if waste disposal needs cannot be met locally. This option is considered to be unsustainable as it would lead to waste being managed far from where it is generated (potentially transported by road) which would lead to negative effects e.g. on increase in GHG emissions, congestion, noise and air pollution. It also does not offer scope for the creation of local jobs in waste disposal as waste would be disposed of elsewhere outside of Nottinghamshire. This option however does offer Nottinghamshire an opportunity to make provision for disposal needs (as required by national planning policy). This is not considered to be a sustainable option and it is recommended that given the extreme shortage of disposal sites locally, other options that would move the waste up the hierarchy should be explored so as to provide a sustainable long-term solution for the County.

Option B – Option B considers the potential to develop land-raise sites within Nottinghamshire to dispose non-hazardous waste. Land-raising is at the very bottom of the waste hierarchy and is considered to be an unsustainable option due to the potential negative environmental and amenity effects associated with it e.g. visual effects, odour, vermin and human health. This option can be beneficial in land reclamation schemes and in this case can provide a solution close to where the waste arises thereby reducing potential negative effects associated with option A in terms of waste transportation. However, this option is unlikely to be appropriate on green field sites due to potential negative effects and lack of acceptability by local communities.

Preferred Option – The preferred approach is a combination of over tipping at existing active and mothballed landfill sites, if not feasible, the next option will be to develop new capacity at other types of sites that will result in long term environmental benefits for example reclamation of derelict colliery tips. The final fall back position will be to allow land-raising on green field sites where this can be shown to be more sustainable than exporting waste for landfill outside the county. This option has both positive and negative effects against sustainability objectives. It has positive effects in terms of reducing the distance waste is transported by

reducing the need the export waste. This would lead to reduced GHG emissions and other negative transport related impacts. This option also has potential to lead to the reclamation of derelict sites therefore improving their environmental quality. However, in the case of land raising on Greenfield sites, this option could lead to negative effects on amenity and on the natural and built environment and a strict criteria would need to be established when identifying potential suitable sites in order to minimise the risk of pollution and environmental damage.

3.6 Managing inert waste (construction and demolition waste)

The majority of construction and demolition waste (C&D) is either re-used on site or recycled leaving a small proportion (currently estimated at 10%) for disposal in inert sites. The key issue for inert waste considered in the WCS is the maintenance of a reasonable geographical spread of facilities to minimise the distance waste is transported for disposal. The **preferred option** put forward therefore seeks to ensure that there are a number of local sites for inert waste disposal to provide for the estimated 10% of waste per annum that requires disposal. This option is considered to be in line with the waste hierarchy as it provides for the proportion of inert waste that requires disposal while maintaining current high re-use and recycling levels.

3.7 Location of new sites

To meet future waste management needs, the Councils need to identify suitable locations for waste management facilities. The Councils' priority is to develop larger, strategic sites supported by a network of smaller, more local sites as needed. Several approaches have been suggested for identifying 'broad locations' for development within the WCS. These options include:

- Option A - Set a radius around a town/city
- Option B - Identify part of the town
- Option C - Identify the preferred site or industrial area
- Option D - Combination of A, B and C

When assessed against the SA framework, there is no discernible difference on how the options perform against the SA objectives as they are concerned with the approach to site identification at a strategic level and are not detailed enough to allow for analysis of potential impacts.

Generally, the location of larger facilities should be close to the main sources of waste arisings, close to the strategic road network (and wherever possible have access to sustainable transport modes) and potentially allow for co-location of facilities and re-use of previously developed land. Smaller facilities are generally acceptable in rural areas to serve local needs but these would need to be sensitively located to ensure there are no adverse effects on sensitive receptors.

3.8 Recycling and energy recovery

Priority in site identification is for large central sites that can serve the main urban areas which produce most waste. Because of the concentration of population and industry in these areas, it is proposed to focus major new recycling or energy recovery facilities close to the main urban centres.

When assessed against the SA objectives, this option supports sustainability principles as it seeks to locate strategic facilities close to sources of waste arisings thereby reducing the distance waste is moved. This has a positive effect on reducing GHG emissions and other potential negative transport related impacts e.g. air pollution and congestion.

Although considered likely to be a sustainable option, there is potential for negative built and natural environment impacts depending on the location of specific sites and the mitigation measures put in place. The site selection criteria will therefore need to include the protection of biodiversity, landscape, and heritage features and other relevant built and natural environment criteria.

3.9 Combined sites (resource recovery)

There is scope for the development of combined facilities offering recycling and/or energy recovery facilities known as Resource Recovery Parks either on a single site or possibly two or three sites across the County. Options A and B focus on making provision for this type of facility either on a single large site or on multiple sites with the Councils' preferred option being to adopt a flexible approach and either have a large central site or a network of smaller sites.

Option A – Seeks to promote a single large site. Overall, this option could help deliver a sustainable option if the site is centrally located (well located) to serve the needs of the larger urban areas as well as offering potential to use sustainable modes of transport. However, this option could also lead to negative effects especially if the facility is very large and has to accept waste from further (out-of County) to meet capacity, thereby increasing distances travelled, GHG emissions and related negative road transport impacts. Larger scale facilities however, are likely to be more attractive to investors due to economies of scale. The sustainability of this option is therefore heavily reliant on access to sustainable modes of transport to move materials.

The impact of this option on the built and natural environment will depend on the exact location of the site and proximity to sensitive receptors and whether or not adequate mitigation measures are in place. Therefore, these issues would need to be considered at the site selection stage to ensure that the site brought forward is well located and that adequate mitigation measures are in place where there is potential for adverse effects on the environment.

Option B – This option seeks to promote the development of 2 or 3 Resource Recovery Parks across the County. This would have the advantage of locating the sites closer to where the waste arises therefore reducing the distances travelled as well as associated GHG emissions. However, it may not provide the economies of scale necessary to attract investment compared to option A. Also like Option A the impact of this option on the built and natural environment will depend on the exact location of the site and proximity to sensitive receptors and whether or not adequate mitigation measures are in place. Therefore, these issues would need to be considered at the site selection stage to ensure that the site brought forward is well located and that adequate mitigation measures are in place where there is potential for adverse effects on the environment.

3.10 Small/medium sites (recycling/energy recovery)

As well as strategic sites, the WCS will consider the need for smaller facilities to support higher levels of recycling and/or energy recovery. Whilst some will be in the main urban areas of Nottingham and parts of Mansfield, there is a need for

facilities in smaller market towns and the Councils' proposed option is to provide for these types of facilities in and around the smaller towns.

Overall, this option is considered to be sustainable as it would reduce the distance waste is moved thereby reducing GHG emissions and other negative road based transport impacts. Impacts on the built and natural environment will depend on the exact location of sites and proximity to sensitive receptors and whether adequate mitigation measures are in place. These issues should be addressed at the site selection stage.

3.11 Small scale sites (rural and Green Belt areas)

In dealing with provision in rural areas, the Councils consider that while most types of development is generally inappropriate in the open countryside and the Green Belt, there maybe circumstances where there is need for very small facilities to help isolated communities to recycle their waste and propose making provision for such facilities in the rural areas and in the Green belt.

When appraised against the SA framework, it was considered that when located appropriately, these facilities can help to deliver adequate facilities in more rural locations in the open countryside and in the Green belt. Siting such facilities closer to the communities they serve would have positive effects in reducing the distances waste is transported for management thereby reducing GHG emissions and other negative effects associated with road transportation.

Allowing small scale development in rural areas can also help support farm diversification and create local job opportunities in these areas. This option is considered likely to deliver a sustainable strategy for making provision in rural areas but it is recommended that sites are sensitively located so as to avoid adverse effects on the natural and built environment.

3.12 Hazardous waste

Future requirements for hazardous waste disposal are likely to be limited in Nottinghamshire. The County produces relatively little hazardous waste. Nevertheless, the sub-region has to play its part in supporting regional efforts to manage hazardous waste and the following options have been considered in dealing with the issue of making such provision:

- Make future provision for hazardous waste in the sub-region
- Not make provision for hazardous waste in the sub-region

Option A - There are sustainability benefits associated with dealing with hazardous waste closer to where it is produced as this is in-line with the proximity principle, and so will reduce the total distance that waste must be transported (especially by road). However it is not clear that this impact would be significant, or would result in significant climate mitigating effects as the amount of hazardous waste produced is currently relatively small. Furthermore, Option A would not entail a sustainable approach to waste management as long as there is not enough locally produced hazardous waste to make sites economically viable.

Option B – Not making provision within Nottinghamshire would maintain the current situation of dealing with hazardous waste outside the County. This has some environmental benefit in that it avoids disposing hazardous waste in the area (the area is limited in terms of geological suitability) therefore eliminating potential for negative effects that may result from disposing hazardous waste. This option is however in conflict with the proximity principle as it leads to waste being

taken further for management. At the present however, this option represents the most sustainable way forward due to the relatively small quantities of waste currently produced in the area. However, as capacity in other areas is used up there will be a case for reviewing provision within Nottinghamshire.

3.13 Site search sequence

The WCS proposes a sequential approach to site selection based on:

- Re-use waste on site
- Use of existing land or buildings close to source
- Manage waste further afield only where there are no acceptable local sites or more remote sites offer overall environmental benefits (e.g. reclaiming derelict land)
- Greenfield land (i.e. undeveloped) close to source

The proposed preferred site search sequence was tested against the SA framework and overall was found to support sustainability principles especially with regard to promoting efficient use of resources, reducing distances waste is transported and reducing contribution to climate change and air pollution. It was however difficult to assess what the effects of adopting this sequence would be on the natural and built environment as these impacts will depend on the actual location of sites, the type of facilities, nature of operations and proximity to sensitive receptors. These impacts will be assessed in detail when specific sites have been identified.

3.14 Site Criteria

In addition to the site search sequence, the Core Strategy will set out specific site criteria which will identify the types of sites and locations that are suitable for the different waste management uses. These criteria are set out on page 44 of the Consultation on further Issues and Options Paper 2010 and were tested against the SA objectives.

The appraisal found that the proposed criteria can help increase the amount of waste re-used and recycled by locating bring sites closer to sources of waste. It also supports efficient use of resources and encourages re-use of previously developed land and derelict buildings and seeks to co-locate waste management facilities with other compatible land uses including industrial and technology parks. This can have a positive effect especially where such co-location reduces the need to travel but it could also lead to adverse cumulative effects on the environment depending on the existing land uses and the sensitivity of the surrounding environment.

Restoration of derelict land including former colliery land, disused quarries and railway land would have a beneficial effect on amenity and improving general environmental quality in such areas. It can also provide opportunities for biodiversity creation and areas for recreation. Land raising in the open countryside although not fully proposed could have detrimental effects on the environment and it is recommended that this should only be allowed in exceptional circumstances with stringent operational criteria to ensure least harm to the environment.

3.15 Safeguarding

The Core Strategy will need to consider whether it is appropriate to give long term protection to certain sites through a safeguarding policy. The following options considered at the Issues and Options stage have been appraised (options are not mutually exclusive and so can be implemented together):

- Having a safeguarding policy
- Safeguarding sites only for major facilities

Option A- Having a safeguarding policy is likely to have positive effects where it promotes re-use of previously developed land or buildings leading to better use of land resources. It can also make a positive contribution to reducing reliance on road freight where the sites provide potential for use of water or rail based freight. However, safeguarding land prevents other land uses like housing and employment which may have adverse effects on the local community. When safeguarding sites for waste management, the Councils should take account of competing land uses and ensure that safeguarding such land is in line with community aspirations and supports local needs.

Option B – This option has the same benefits as Option A in terms of encouraging use of previously developed land as well as reducing road transportation where sites provide potential for use of more sustainable transport modes. Limiting safeguarding to major facilities is judged to be positive as it reduces the risk of sterilising other competing land uses like housing and employment. It also provides greater certainty for industry which in turn can encourage investment in the waste sector.

The Councils are taking forward Option A as its **preferred option.**

3.16 Extension of existing sites

Extending existing sites and facilities is likely to offer environmental and economic advantages over developing new sites. The SA considered the option of allowing extension of existing sites (option A) versus not making such provision (option B).

Option A- This option supports extension of existing sites where this would bring clear environmental benefits. It scores well against SA objectives related to protecting the natural and built environment as it is assumed extension would lead to enhancement or improvement for example of biodiversity sites. It can also reduce pollution/contamination where a site has not been operating properly and is upgraded as part of the extension as well as improve the aesthetics through good design where applicable. The option also supports the SA objective on ensuring there is an adequate network of suitable sites as extending existing sites may be more deliverable than acquiring new sites. This option would also promote re-use of existing land and buildings therefore supporting the SA objective on prudent use of resources.

Option B – This option opposes extending existing sites. This can have potential for positive environmental benefits where past operation of a site has resulted in negative impacts on the environment. Restoration of such sites can have clear benefits on such environmental features as biodiversity, landscape and countryside as well as on water and air quality. Restricting expansion of sites especially for those sites with potential for extension can however have negative effects including not being able to meet capacity and having to move waste further leading to undesirable road transport related impacts.

The Councils are taking forward Option A as its **preferred option.**

4 Next Steps

The findings of this SA will inform the preparation of the WCS Pre-Submission Document. This document will be subject to further SA (if new or modified options emerge) and will also be made available for comment.

Following consultation and SA of the Pre-Submission Document, the comments received will be incorporated as appropriate and a Submission Waste Core Strategy prepared. The Submission Document accompanied by the final SA report will be submitted to the Secretary of State.

APPENDIX A

The following table provides an explanation to the symbols used in the appraisal.

Symbol	Likely effect on the SA Objective
++	The option is likely to have a **very positive** impact
+	The option is likely to have a **positive** impact
0	**No significant effect** / **no clear link**
?	**Uncertain** or **insufficient information** on which to determine impact
-	The option is likely to have a **negative** impact
- -	The option is likely to have a **very negative** impact
I	The option could have a positive or a negative impact depending on **how it is implemented**

Vision

By 2031 Nottinghamshire's communities and businesses will be taking responsibility for managing their waste locally and in a sustainable manner. We will be supported by an ambitious and modern waste industry that successfully and effectively manages waste by treating it as a resource, in line with the waste hierarchy. Together we will be producing less, reusing more and striving to exceed national recycling targets as far as practically possible. Disposal will be the last resort once options to re-use, recycle or recover have been exhausted. All waste related development will respect, and where possible enhance, our environment, wildlife, landscape and heritage. Individual developments and our overall approach to waste management will successfully manage the possible impacts of climate change. Waste management operations will have a minimal impact on the quality of life and health of those living and working in, or visiting, Nottinghamshire. The geographical spread of our waste management facilities will be closely linked to our concentrations of population, with large facilities around the Nottingham urban area, Mansfield and Ashfield and medium sized facilities close to our towns of Worksop, Retford and Newark. Strategic sites will be serviced with excellent transport links to serve a wide area and will be part of a larger development supporting green energy or other sustainable technologies. Isolated communities will benefit from small scale community led schemes and farm based initiatives to provide local recycling facilities but this will not compromise the protection of our Green Belt	
Sustainability Appraisal objectives	
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	0
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Impact on biodiversity will depend on the specific location of sites relative to sensitive receptors. It would also be influenced on the operational procedures on site.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	+ The vision states that strategic sites will be well serviced with excellent transport links.
4. Protect the quality of the historic environment above and below ground.	++ The vision seeks to achieve waste management in a manner that respects the environment

5. Protect and enhance the quality and character of our townscape and landscape.	
6. Minimise impact and risk of flooding.	
7. Minimise any possible impacts on and increase adaptability to climate change.	+/? The vision seeks to adapt to climate change but it does not promote mitigating against climate change.
8. Protection of high quality agricultural land and soil.	++ Vision seeks to achieve waste management in a manner that respects the environment.
9. Promote more efficient use of land and resources	++ Vision seeks to manage waste in accordance with the waste hierarchy and supports production of green energy and supports other sustainable technologies.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	
11. Protect and improve local air quality.	++ Vision seeks to achieve waste management in a manner that respects the environment.
12. Protect and improve water quality and promote efficient use of water.	
13. Support wider economic development and promote local job opportunities	+/? The vision should be clearer on how it seeks to support the wider economic development of the area
14. Protect and improve human health and quality of life.	++ Vision seeks to protect and human health and the quality of life.
Summary: The proposed vision is in general accordance with sustainability principles. It seeks to manage waste in a way that protects the natural and built environment. It also promotes managing waste as a valuable resource which supports the waste hierarchy and has the potential to lead to a reduction in the amount of waste sent to landfill. The vision seeks to ensure that waste operations have a minimal impact on the quality of life and health of Nottinghamshire's residents, and are well located close to sources of arisings. The vision seeks to adapt to the effects of climate change but does not seek to mitigate against climate change. It also does not include the need to make adequate provision of the required waste management facilities and does not promote economic growth/job creation. The vision should be balanced in its approach	

to waste management – protecting the environment, meeting needs (social), and supporting investment, innovation/new technologies in waste management to create job opportunities in the waste sector.

It is recommended that the Councils should consider integrating climate change mitigation within their waste management vision. It is also recommended that the vision wording should incorporate the need to make adequate provision for waste management facilities in a way that supports innovation and the local economy.

Objectives

The following table provides an explanation to the symbols used in the compatibility appraisal of the proposed Waste Core Strategy Objectives and the Sustainability Appraisal Objective.

Symbol	Likely effect on the Sustainability Objective
+	Objective compatible
0	Objectives not related
-	Objectives incompatible
?	The objective relationship is unknown or is dependent on implementation

SA Objectives / Proposed Waste LDF Objectives	1. Make adequate provision	2.Protect and enhance biodiversity	3. Promote sustainable transport	4. Protect and enhance the historic	5. Protect and enhance landscape and townscape	6. Limit risk of flooding	7.Mitigate and adapt to climate change	8.Protect agricultural land and soil	9 Promote efficient use of land and resources	10. Promote energy efficiency	11. Maintain air quality	12. Protect water quality	13. Promote economic development	14. Protect human health and amenity
Objective 1	0	0	0	0	0	0	0	0	0	0	0	0	++	
Objective 2	0	+	0	+	+	0	0	+	+	0	+	+	0	0
Objective 3	0	0	0	0	0	0	0	0	0	0	+	+	0	++
Objective 4	0	0	0	0	0	+	++	0	0	0	0	++	0	0
Objective 5	0	0	++	0	0	0	0	0	0	0	0	0	0	0
Objective 6	++	0	0	0	0	0	0	0	0	0	0	0	0	0
Objective 7	0	0	0	+	+	+	0	0	0	+	0	0	0	+
Summary	Overall, the proposed objectives were found to be compatible with the SA objectives. No incompatibility was found between the SA objectives and the proposed Waste Core Strategy objectives. The Waste LDF objectives seek to manage Nottinghamshire's waste needs in a way that protects the environment (objectives 2 and 3), contributes to economic growth (objective 1) as well as ensuring communities are provided with adequate facilities to meet anticipated needs (objective 6) and that facilities are designed and operated to the highest standards (objective 7). Objective 5 encourages use of sustainable transport modes as well as reducing the need to transport waste significant distances by road. This has the potential to reduce the negative impacts associated with HGV movements including GHG emissions, air pollution and noise pollution etc. Objective 4 seeks to encourage efficient use of resources as well as mitigate and adapt to climate change.												

Options Appraisal

Planning for Future Needs			
Sustainability Appraisal objectives	**Option 1** **Make minimum provision and rely on monitoring and review**	**Option 2** **Make maximum provision with no restriction**	**Option 3** **Make maximum provision but only allow phased site release**
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	+ Positive in the short term likely to lead to under provision in the medium to long term.	+ Positive in the short term but could lead to overprovision in future.	++ Balances provision and likely to meet need adequately.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Impact dependent on location of facility and proximity to sensitive biodiversity receptors. However it assumed that few facilities would result in less land take and therefore less impact on the natural environment including biodiversity.	? Impact dependent on location of facility and proximity to sensitive biodiversity receptors. However, it is assumed that more facilities will require more land, which is likely to increase the potential for impact on the natural environment including on biodiversity.	? Impact dependent on location of facility and proximity to sensitive biodiversity receptors. However, it is assumed that more facilities will require more land, which is likely to increase the potential for impact on the natural environment including on biodiversity, although this option would score better than option B due to the phased release of sites.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	- Assuming under provision in the medium to short term, this could lead to increased transportation.	- Assuming over provision in the future, this could lead to waste importation from outside the area.	+ Option likely to be able to meet the need for facilities closer to sources of waste.

4. Protect the quality of the historic environment above and below ground.	? Impact dependent on location of facility and proximity to sensitive heritage assets/built environment receptors. However it assumed that few facilities would result in overall less impact on heritage assets and the built environment.	? Impact dependent on location of facility and proximity to sensitive heritage assets/built environment receptors. However, it is assumed that more facilities will require more land, which is likely to increase the potential for impact on the built environment including on heritage assets.	? Impact dependent on location of facility and proximity to sensitive heritage assets/built environment receptors. However, it is assumed that more facilities will require more land, which is likely to increase the potential for impact on the built environment including on heritage assets, although this option would score better than option B due to the phased release of sites.
5. Protect and enhance the quality and character of our townscape and landscape.	? Impact dependent on location of facility and proximity to sensitive heritage assets/built environment receptors. However it assumed that few facilities would result in overall less impact on heritage assets and the built environment.	? Impact dependent on location of facility and proximity to sensitive heritage assets/built environment receptors. However, it is assumed that more facilities will require more land, which is likely to increase the potential for impact on the built environment including on heritage assets.	? Impact dependent on location of facility and proximity to sensitive heritage assets/built environment receptors. However, it is assumed that more facilities will require more land, which is likely to increase the potential for impact on the built environment including on heritage assets, although this option would score better than option B due to the phased release of sites.
6. Minimise impact and risk of flooding.	? Impact dependent on location of facility	? Impact dependent on location of facility.	? Impact dependent on location of facility.
7. Minimise any possible impacts on and increase adaptability to climate change.	- Risk of under provision resulting in waste having to be transported further most likely by road, leading to increased GHG emissions.	? Risk of overprovision may encourage imports from other areas potentially by road increasing GHG emissions.	+ Maximum provision but with phased release of sites is likely to meet demand for facilities closer to where they are required reducing the need to transport waste further.

8. Protection of high quality agricultural land and soil.	? Impact dependent on location and type of agricultural land	? Impact dependent on location and type of agricultural land	? Impact dependent on location and type of agricultural land
9. Promote more efficient use of land and resources	+ Minimum provision requires less land take.	- Making maximum provision may result in over provision and unnecessary land take.	+ Making max provision but with phased release of sites ensures prudent use of land resources.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	0	0	0
11. Protect and improve local air quality.	? Impact dependent on location and type of facility and proximity to AQMAs and sensitive receptors although option likely to have less effect compared to other options due to few facilities being provided. However, under provision could lead to waste being transported further by road leading to increased air pollution.	? Impact dependent on location and type of facility, proximity to AQMAs and sensitive receptors Option may result in a higher potential for air pollution due to more facilities being provided.	? Impact dependent on location and type of facility and proximity to AQMAs and sensitive receptors Option may result in a higher potential for air pollution due to more facilities being provided although it is judged to perform better than option B.
12. Protect and improve water quality and promote efficient use of water.	? Impact dependent on location of facility and proximity to sensitive water receptors.	? Impact dependent on location of facility and proximity to sensitive water receptors.	? Impact dependent on location of facility and proximity to sensitive water receptors.
13. Support wider economic development and promote local job opportunities	+Option offers potential for local employment opportunities	+ Option offers potential for local employment opportunities	+ Option offers potential for local employment opportunities

14. Protect and improve human health and quality of life.	+ Making minimum provision is likely to have an overall reduction in potential impact on human health due to reduced number of facilities.	? Making maximum could result in more facilities being built. Overall potential for waste activities to impact on human health is likely to be high due to the high number of facilities but this is not thought to be significant due to the stringent nature of waste management licensing and control by the Environment Agency.	+ Making maximum could result in more facilities being built. However, phased release of sites can ensure that only those facilities that are required are built. This could reduce the potential for impact on human health compared to option 2.

Summary: The appraisal of the proposed options revealed that option A and B are likely to have some negative effects due to the risk of under provision (option A) or over provision (option B). Option C seeks to balance these risks and is judged to be more sustainable.

Option A- Although planning for the minimum number of facilities would lead to less land take and therefore less environmental impacts associated with waste management, this option could have negative effects on sustainability if there was a lack of capacity leading to waste that would otherwise be dealt with in Nottinghamshire and Nottingham having to be transported out of the sub-region potentially for long distances by road leading to negative climate change, air quality and other road transport related effects like road congestion.

Option B –This option has the advantage of minimising the potential for waste being transported for management outside the sub-region. It therefore supports SA objectives on minimising the need to travel, reducing contribution to climate change and reducing air pollution assuming waste would be transported by road. It could also have some positive effects on encouraging investment in the waste sector and contributing to the local economy. However, it has a major potential disadvantage if it resulted in over provision of capacity especially of disposal facilities (landfilling/incineration) as this could encourage management routes that are not in accordance with the waste hierarchy as well as encourage waste imports into the sub-region. This could also hinder investment in other waste management facility types and stifle innovation in waste management technologies used in the sub-region.

Option C- This option allows for maximum provision but with a phased release of sites based on a plan, monitor and manage approach. It has the benefit of avoiding potential under/over provision and therefore reducing unnecessary land take (and associated environmental impacts). It also reduces the need for transporting waste further resulting in positive effects for climate change, air quality and reduced potential congestion. It also provides certainty to the waste sector through monitoring of capacity for the different waste management facilities and therefore can encourage investment in the sector and contribute to positive effects on the local economy.

Meeting future MSW and C&I Needs				
Sustainability Appraisal objectives	**Option A** **Baseline- Minimum change**	**Option B** **Focus on Recycling**	**Option C** **Focus on energy recovery**	**Option D** **Combination of recycling and recovery**
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	-This option has potential for negative environmental effects associated with the disposal of significant amounts of waste.	- This option has potential for negative environmental effects associated with the disposal of significant amounts of waste.	+This option although still requiring disposal would lead to an increase in recovered materials but no change to the level of recycling.	++ This option although still requiring disposal has potential to increase the amount of recycled and recovered materials and so performs better than the other options in sustainability terms.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	0	0	0	0
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	--Significant quantities of waste would need to be transported further for disposal	-- Significant quantities of waste would need to be transported further for disposal	- Compared to options A and B, less amounts of waste would require transporting further for disposal.	- Compared to options A and B, less amounts of waste would require transporting further for disposal.
4. Protect the quality of the historic environment above and below ground.	0	0	0	0
5. Protect and enhance the quality and character of our townscape and landscape.	0	0	0	0
6. Minimise impact and risk of flooding.	0	0	0	0
7. Minimise any possible impacts on and increase adaptability to climate change.	--Significant quantities of waste would need to be transported further for disposal potentially resulting in	-- Significant quantities of waste would need to be transported further for disposal potentially resulting in	- Option likely to lead to reduced GHG emissions through increased energy recovery although there would be some emissions	- Option likely to lead to reduced GHG emissions through increased energy recovery although there would be some emissions associated with transportation and disposal.

	more GHG emissions	more GHG emissions	associated with transportation and disposal.	
8. Protection of high quality agricultural land and soil.	?	?	?	?
9. Promote more efficient use of land and resources	--Significant quantities of waste would need to be disposed to landfill/landraise	-- Significant quantities of waste would need to be disposed to landfill	- Option promotes resource efficiency through energy recovery and diverting materials away from landfill	- Option promotes resource efficiency through energy recovery and diverting materials away from landfill.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	- Option includes existing recovery capacity but limits new capacity.	- Option includes existing recovery capacity but limits new capacity.	++ Option focuses on energy recovery	+ Option includes some energy recovery
11. Protect and improve local air quality.	0	0	0	0
12. Protect and improve water quality and promote efficient use of water.	0	0	0	0
13. Support wider economic development and promote local job opportunities	+ Option would maintain jobs in the waster sector	+ Option offers potential for creation of new jobs	+ Option offers potential for creation of new jobs	+ Option offers potential for creation of new jobs
14. Protect and improve human health and quality of life.	0	0	0	0

Summary:

Option A – This option although proposing to recycle 50% of MSW would require a significant proportion of MSW and C&I waste to be disposed in landfill. Due to the shortage of suitable sites within the County, the waste may need to be disposed off elsewhere (Lincolnshire or Yorkshire) leading to waste being transported most likely by road for long distances. This would have negative environmental effects for example increase in GHG emissions and other associated road transport impacts – (congestion, noise etc). Alternatively the waste could be disposed locally through land raising but this option could lead to adverse environmental and amenity effects. Overall, option A is considered to be unsustainable.

Option B – This option requires recycling 60% of MSW and C&I which would require significant investment in the recycling infrastructure. It would also reduce the estimated disposal requirements. However,

significant quantities of waste would still require to be landfilled (17mt over the plan period) leading to similar sustainability issues as A above in terms of transporting and disposing the proportion of waste requiring disposal. This option is considered to be unsustainable.

Option C – This option focuses on energy recovery for MSW and C&I as well as recycling 50% of MSW. It would lead to a significant reduction in the amount of waste requiring disposal (13mt over the plan period) but would require investment and commitment from the waste industry especially with regard to the treatment of C&I waste. Compared to options A and B, this option is likely to have less environmental impacts associated with waste movement and disposal. It would also lead to an increase in energy generated from waste and it promotes overall resource efficiency by moving waste up the hierarchy. Although judged to be a sustainable option, this option limits the amount of waste that can be recycled as it only requires the 50% target set for MSW to be met.

Option D – This option promotes both recycling and recovery with recycling levels set at 60% and increasing to 70% by 2025. Like Option B, achieving these targets would require significant investment in increased recycling capacity. This option would require new energy recovery facility (ies) but not as much as option C. It would also lead to more waste being moved up the waste hierarchy as well as provide green energy. Compared to options A and B, this option would lead to reduced GHG emissions associated with transporting significant quantities of waste for disposal as well as the disposal of waste. Overall, the option is considered as having the potential to deliver a sustainable waste management option for Nottinghamshire.

Disposal (Non – Hazardous waste)			
Sustainability Appraisal objectives	**The preferred Option** is a combination of over tipping at existing active and mothballed landfill sites, develop new capacity at other types of sites that will result in long term environmental benefits or to allow land-raising on green field sites where this can be shown to be more sustainable than exporting waste for landfill outside the county.	**Option 1** **Export waste for disposal outside Nottinghamshire**	**Option 2** **Dispose waste through land –raising**
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	+/- This option provides some flexibility in making provision although like option 2, land raising has potential for negative effects on the environment.	- This option does not support the principle of managing waste close to where it arises. However, given the severe shortage of suitable sites in the County, this option could help provide a network of disposal facilities although it is not considered to be a sustainable option.	- Land raising is likely to have negative amenity effects depending on the location of the sites and is therefore considered to be unsustainable. However, it has the potential to provide some benefits where land reclamation is required. This option is however unlikely to be suitable on green field land.
2. Protect and enhance biodiversity at all levels.	?/-Although impacts are site specific, this option has potential to lead to both positive and negative environmental effects	?	?/-Although impacts are site specific, this option has potential to lead to negative environmental effects
3. Reduce the impact of transporting minerals and waste (and promote more sustainable forms of transport and use of existing transport infrastructure.)	+ This option would reduce the need to transport waste out of county therefore reducing distances travelled.	-- Waste would need to be transported further for disposal	+ Land raising within the County would reduce the distance waste is travelled

4. Protect the quality of the historic environment above and below ground.	?/- Although impacts are site specific, this option has potential to lead to positive and/or negative environmental effects	?	?/- Although impacts are site specific, this option has potential to lead to negative environmental effects
5. Protect and enhance the quality and character of our townscape and landscape.	?/- Although impacts are site specific, this option has potential to lead to positive and/or negative environmental effects	?	?/- Although impacts are site specific, this option has potential to lead to negative environmental effects
6.Minimise impact and risk of flooding from mineral and waste related activities	?/- Although impacts are site specific, this option has potential to lead to positive and/or negative environmental effects	?	?/-Although impacts are site specific, this option has potential to lead to negative environmental effects
7. Minimise emissions of greenhouse gasses from minerals and waste activities and increase adaptability to climate change.	+ This option would reduce the need to transport waste out of county therefore reducing distances travelled.	-- Waste would need to be transported further for disposal	+ Land raising within the County would reduce the distance waste is travelled
8.Protection of high quality agricultural land and soil quality	?/- Although impacts are site specific, this option has potential to lead to positive and/or negative environmental effects	?	?/-Although impacts are site specific, this option has potential to lead to negative environmental effects

9. Promote greater resource efficiency, including the sustainable use of minerals, managing waste according to the waste hierarchy and maximising the re-use of previously developed land and buildings.	- Landfilling does not provide greater resource efficiency although it is acknowledged that it does play its part on the waste hierarchy	- Landfilling does not provide greater resource efficiency although it is acknowledged that it does play its part on the waste hierarchy	- Landfilling does not provide greater resource efficiency although it is acknowledged that it does play its part on the waste hierarchy
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	0	0	0
11. Minimise the impact of minerals and waste activities on local air quality.	?/- Although impacts are site specific, this option has potential to lead to positive and/or negative environmental effects	?	?/-Although impacts are site specific, this option has potential to lead to negative environmental effects
12. Limit the impact of minerals and waste activities on water quality.	?/- Although impacts are site specific, this option has potential to lead to positive and/or negative environmental effects	?	?/-Although impacts are site specific, this option has potential to lead to negative environmental effects
13. Support wider economic development through the provision of raw materials, waste management infrastructure, and related job opportunities.	+ Option offers scope to provide local employment	- Option does not offer scope to provide local employment	+ Option offers scope to provide local employment

14. Minimise the impact of minerals and waste activity on human health and quality of life.	?/- Although impacts are site specific, this option has potential to lead to positive and/or negative environmental effects	?	?/- ?/-Although impacts are site specific, this option has potential to lead to negative environmental and human effects

Summary:

Preferred Option – The preferred approach is a combination of over tipping at existing active and mothballed landfill sites, if not feasible, the next option will be to develop new capacity at other types of sites that will result in long term environmental benefits for example reclamation of derelict colliery tips. The final fall back position will be to allow land-raising on green field sites where this can be shown to be more sustainable than exporting waste for landfill outside the county. This option has both positive and negative effects against sustainability objectives. It has positive effects in terms of reducing the distance waste is transported by reducing the need the export waste. This would lead to reduced GHG emissions and other negative transport related impacts. This option also has potential to lead to the reclamation of derelict sites therefore improving their environmental quality. However, in the case of land raising on Greenfield sites, this option could lead to negative effects on amenity and on the natural and built environment and a strict criteria would need to be established when identifying potential suitable sites in order to minimise the risk of pollution and environmental damage.

Option A – Option A seeks to make provision for the disposal of non-hazardous waste through exporting it elsewhere if waste disposal needs cannot be met locally. This option is considered to be unsustainable as it would lead to waste being managed far from where it is generated (potentially by road) which would lead to negative effects e.g. on increase in GHG emissions, congestion, noise etc. It also does not offer scope for the creation of local jobs in waste disposal as waste would be disposed off elsewhere. This option however does offer an option for Nottinghamshire where there is an extreme shortage of suitable sites although it is recommended that other options regarding moving waste up the hierarchy are considered so as to provide a sustainable long term solution for the County.

Option B – Option B considers the potential to develop land-raise sites within Nottinghamshire to dispose non-hazardous waste. Land-raising is at the very bottom of the waste hierarchy and is considered to be an unsustainable option due to the potential negative environmental and amenity effects associated with it e.g. visual effects, odour, vermin and human health. This option can be beneficial in land reclamation schemes and in this case can provide a solution close to where the waste arises thereby reducing potential negative effects associated with option A above. However, this option is unlikely to be appropriate on green field sites due to potential negative effects and lack of acceptability by local communities.

Managing Construction and Demolition Waste – Maintain a number of local sites for inert waste disposal in Nottinghamshire	
Sustainability Appraisal objectives	
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	++ A significant amount of C&D waste is re-used or recycled and only a small proportion requires disposal. Therefore maintaining a number of local sites is likely to adequately provide for the proportion requiring disposal.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Impact on biodiversity will depend on the specific location of sites relative to sensitive receptors. It would also be influenced on the operational procedures on site.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	0/?
4. Protect the quality of the historic environment above and below ground.	? Impact will depend on the specific location of sites relative to sensitive receptors. It would also be influenced on the operational procedures on site.
5. Protect and enhance the quality and character of our townscape and landscape.	? Impact will depend on the specific location of sites relative to sensitive receptors. It would also be influenced on the operational procedures on site.
6. Minimise impact and risk of flooding.	? Impact will depend on the specific location of sites relative to sensitive receptors. It would also be influenced on the operational procedures on site.
7. Minimise any possible impacts on and increase adaptability to climate change.	-/? There is likely to be GHG emissions associated with transportation of inert waste.
8. Protection of high quality agricultural land and soil.	? Impact will depend on the specific location of sites relative to sensitive receptors. It would also be influenced on the operational procedures on site.
9. Promote more efficient use of land and resources	+ A significant amount of C&D waste is re-used or recycled and only a small proportion requires disposal
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	+ A significant amount of C&D waste is re-used or recycled and only a small proportion requires disposal

11. Protect and improve local air quality.	? There is potential for air pollution associated with road transportation of inert waste but it is expected that this will be insignificant as only a small proportion of estimated arisings requires disposal
12. Protect and improve water quality and promote efficient use of water.	0
13. Support wider economic development and promote local job opportunities	+ There is potential to create local job opportunities
14. Protect and improve human health and quality of life.	?
Summary: This option seeks to ensure that there are a number of local sites for inert waste disposal to provide for the estimated 10% of waste per annum that requires disposal. High quantities of C&D waste are either re-used on site or recycled. Maintaining disposal capacity for the proportion that requires disposal is necessary and is in line with the waste hierarchy.	

Location of new sites				
Sustainability Appraisal objectives	**Option A** **Set a radius around a town/city**	**Option B** **Identify part of the town**	**Option C** **Identify the preferred site or industrial area**	**Option D** **Combination of A, B and C**
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	? Adequate provision will depend on whether site selection option delivers the required number of sites	? Adequate provision will depend on whether site selection option delivers the required number of sites	? Adequate provision will depend on whether site selection option delivers the required number of sites	? Adequate provision will depend on whether site selection option delivers the required number of sites
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	0	0	0	0
3. Promote	? Impact will	? Impact will	? Impact will	? Impact will

sustainable patterns of movement and the use of more sustainable modes of transport.	depend on actual location of sites relative to sources of waste	depend on actual location of sites relative to sources of waste	depend on actual location of sites relative to sources of waste	depend on actual location of sites relative to sources of waste
4. Protect the quality of the historic environment above and below ground.	0	0	0	0
5. Protect and enhance the quality and character of our townscape and landscape.	0	0	0	0
6. Minimise impact and risk of flooding.	0	0	0	0
7. Minimise any possible impacts on and increase adaptability to climate change.	? Impact will depend on the actual location of sites relative to sources of waste and mode of transport used	? Impact will depend on actual location of sites relative to sources of waste and mode of transport used	? Impact will depend on actual location of sites relative to sources of waste and mode of transport used	? Impact will depend on actual location of sites relative to sources of waste and mode of transport used
8. Protection of high quality agricultural land and soil.	0	0	0	0
9. Promote more efficient use of land and resources	?	?	?	?
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	?	?	?
11. Protect and improve local air quality.	?	?	?	?

12. Protect and improve water quality and promote efficient use of water.	?	?	?	?
13. Support wider economic development and promote local job opportunities	0	0	0	0
14. Protect and improve human health and quality of life.	?	?	?	?
Summary: Options A, B, C and D relate to the approach the Councils should adopt in identifying sites for the development of larger strategic facilities (broad locations). When assessed against the SA framework, there is no discernible difference on how the options perform against the SA objectives as they are concerned with the approach to site identification at a strategic level and are not detailed enough to allow for analysis of potential impacts. Generally, the location of strategic facilities should be close to the main sources of waste arisings, close to the strategic road network (and wherever possible have access to sustainable transport modes) and potentially allow for co-location of facilities and re-use of previously developed land. Smaller facilities are generally acceptable in rural areas to serve local needs but these would need to sensitively located to ensure there are no adverse effects on sensitive receptors.				

Strategic Sites for recycling and energy recovery – Focus new recycling or energy recovery plants in or close to the main urban areas.	
Sustainability Appraisal objectives	
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	+ Locating recycling and recovery sites close to main urban areas can help towards providing adequate waste management capacity although this depends on availability of suitable sites.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Impact on amenity will depend on the specific location of sites relative to sensitive receptors. It would also be influenced on the operational procedures on site.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	++ Focusing recycling and recovery sites close to sources of waste arising can help in reducing the distance waste is transported
4. Protect the quality of the historic environment above and below ground.	? Impact on biodiversity will depend on the specific location of sites relative to sensitive receptors.
5. Protect and enhance the quality and character of our townscape and landscape.	? Impact on heritage assets /built environment will depend on the specific location of sites relative to sensitive receptors.

6. Minimise impact and risk of flooding.	? Impact on the townscape/landscape will depend on the specific location of sites relative to sensitive receptors.
7. Minimise any possible impacts on and increase adaptability to climate change.	? Impact on air quality will depend on the specific location of sites relative to sensitive receptors.
8. Protection of high quality agricultural land and soil.	? Impact on water resources will depend on the specific location of sites relative to sensitive receptors.
9. Promote more efficient use of land and resources	? Impact on soil quality will depend on the specific location of sites
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	0
11. Protect and improve local air quality.	? Impact on air quality will depend on the specific location of sites relative to sensitive receptors
12. Protect and improve water quality and promote efficient use of water.	? Impact on water quality will depend on the specific location of sites relative to sensitive receptors
13. Support wider economic development and promote local job opportunities	+ Option can help deliver strategic waste facilities that can offer new job opportunities
14. Protect and improve human health and quality of life.	0

Summary: This option focuses on providing new strategic recycling or energy recovery plants in or close to main urban centres. When assessed against the SA objectives, this option supports sustainability principles as it seeks to locate strategic facilities close to sources of waste arisings thereby reducing the distance waste is moved. This has a positive effect on reducing GHG emissions and other negative transported related impacts e.g. air pollution and congestion. Although considered to be a sustainable option, the potential effects on the built and natural environment will depend on the location of specific sites and mitigation measures put in place. The site selection criteria will therefore need to include the protection of biodiversity, landscape, heritage features etc.

Combined sites (Resource Recovery Parks)		
Sustainability Appraisal objectives	**Option 1** **Provide a single very large site**	**Option 2** **Provide several sites across the County**
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	+ This option could deliver adequate provision	+ This option can deliver adequate provision
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Impact will depend on the specific location of sites relative to sensitive receptors	? Impact will depend on the specific location of sites relative to sensitive receptors
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	? This option has potential to lead to waste moving further or not depending on the whether the facility is centrally located, close to the main sources of arisings or accessible by sustainable transport modes.	? This option has potential to reduce distances travelled depending on the exact location of facilities relative to the main sources of arisings.
4. Protect the quality of the historic environment above and below ground.	? Impact will depend on the specific location of sites relative to sensitive receptors	? Impact will depend on the specific location of sites relative to sensitive receptors
5. Protect and enhance the quality and character of our townscape and landscape.	? Impact will depend on the specific location of sites relative to sensitive receptors	? Impact will depend on the specific location of sites relative to sensitive receptors
6. Minimise impact and risk of flooding.	? Impact will depend on the specific location of sites relative to sensitive receptors	? Impact will depend on the specific location of sites relative to sensitive receptors
7. Minimise any possible impacts on and increase adaptability to climate change.	? This option has potential to lead to increase or decrease of GHG emissions depending on the whether the facility is centrally located, close to the main sources of arisings or accessible by sustainable transport modes.	? This option has potential to lead to increase or decrease of GHG emissions depending on the exact location of facilities relative to the main sources of arisings.

8. Protection of high quality agricultural land and soil.	? Impact will depend on the specific location of sites relative to sensitive receptors	? Impact will depend on the specific location of sites relative to sensitive receptors
9. Promote more efficient use of land and resources	?	?
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	+ Resource recovery parks will help promote generation of green energy	+ Resource recovery parks will help promote generation of green energy
11. Protect and improve local air quality.	? Impact will depend on the specific location of sites relative to sensitive receptors	? Impact will depend on the specific location of sites relative to sensitive receptors
12. Protect and improve water quality and promote efficient use of water.	? Impact will depend on the specific location of sites relative to sensitive receptors	? Impact will depend on the specific location of sites relative to sensitive receptors
13. Support wider economic development and promote local job opportunities	+ Option provides opportunities for local employment	+ Option provides opportunities for local employment
14. Protect and improve human health and quality of life.	? Impact will depend on the specific location of sites relative to sensitive receptors	? Impact will depend on the specific location of sites relative to sensitive receptors

Summary: Options A and B focus on making provision for Resource Recovery Parks.

Option A – Seeks to promote a single large site. Overall, this option could help deliver a sustainable option if the site is centrally located (well located) to serve the needs of the larger urban areas as well as offering potential to use sustainable modes of transport. However, these options could also lead to negative effects especially if the facility is very large and has to accept waste from further (out-of County) to meet capacity, thereby increasing distances traveled, GHG emissions and related negative road transport impacts. Larger scale facilities however, are likely to be more attractive to investors due to economies of scale. The sustainability of this option is therefore heavily reliant on access to sustainable modes of transport to move materials.

The impact of this option on the built and natural environment will depend on the exact location of the site and proximity to sensitive receptors and whether or not adequate mitigation measures are in place. Therefore, these issues would need to be considered at the site selection stage to ensure that the site brought forward has no adverse effects on the environment (and where there are potential adverse effects, adequate mitigation measures are in place).

Option B – Seeks to promote the development of 2 or 3 resource recovery parks across the County. This would have the advantage of locating the sites closer to where the waste arises therefore reducing the distances traveled as well as associated GHG emissions. However, it may not provide the economies of scale necessary to attract investors compared to option A. Also like Option A the impact of this option on the built and natural environment will depend on the exact location of the site and proximity to sensitive receptors and whether or not adequate mitigation measures are in place. Therefore, these issues would need to be considered at the site selection stage to ensure that the site brought forward has no adverse effects on the environment (and where there are potential adverse effects, adequate mitigation measures are in place).

Small/medium sites (Recycling/energy recovery) - Focus small or medium sized recycling/energy recovery facilities in and around the smaller towns	
Sustainability Appraisal objectives	
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	+ This option can help to deliver capacity in smaller towns
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Impact will depend on the specific location of sites relative to sensitive receptors
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	+ This option has potential to reduce the distance waste is moved as facilities would be provided close to sources of arisings
4. Protect the quality of the historic environment above and below ground.	? Impact will depend on the specific location of sites relative to sensitive receptors
5. Protect and enhance the quality and character of our townscape and landscape.	? Impact will depend on the specific location of sites relative to sensitive receptors

6. Minimise impact and risk of flooding.	? Impact will depend on the specific location of sites relative to sensitive receptors
7. Minimise any possible impacts on and increase adaptability to climate change.	+ This option has potential to reduce the distance waste is moved as facilities would be provided close to sources of arisings thereby reducing GHG emissions
8. Protection of high quality agricultural land and soil.	? Impact will depend on the specific location of sites relative to sensitive receptors
9. Promote more efficient use of land and resources	?
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?
11. Protect and improve local air quality.	? Impact will depend on the specific location of sites relative to sensitive receptors
12. Protect and improve water quality and promote efficient use of water.	? Impact will depend on the specific location of sites relative to sensitive receptors
13. Support wider economic development and promote local job opportunities	+ Option has potential to create local employment opportunities
14. Protect and improve human health and quality of life.	? Impact will depend on the specific location of sites relative to sensitive receptors
Summary: This option focuses on providing small or medium sized recycling/recovery facilities in and around the smaller towns. Overall, this option is considered to be sustainable as it would reduce the distance waste is moved thereby reducing GHG emissions and other negative road based transport impacts. Impacts on the built and natural environment will depend on the exact location of sites and proximity to sensitive receptors and whether adequate mitigation measures are in place. These issues should be addressed at the site selection stage.	

Rural and Green Belt areas – Focus very small scale recycling or other waste management facilities in rural and Green belt areas	
Sustainability Appraisal objectives	
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	+ This option can help deliver small scale operations to serve rural communities and could be appropriate development in the green belt.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Impact will depend on the specific location of sites relative to sensitive receptors
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	+ Make more local provision will reduce the distance waste is moved
4. Protect the quality of the historic environment above and below ground.	? Impact will depend on the specific location of sites relative to sensitive receptors
5. Protect and enhance the quality and character of our townscape and landscape.	? Impact will depend on the specific location of sites relative to sensitive receptors
6. Minimise impact and risk of flooding.	? Impact will depend on the specific location of sites relative to sensitive receptors
7. Minimise any possible impacts on and increase adaptability to climate change.	+ Make more local provision will reduce the distance waste is moved thereby reducing GHG emissions
8. Protection of high quality agricultural land and soil.	? Impact will depend on the specific location of sites relative to sensitive receptors
9. Promote more efficient use of land and resources	+ Providing recycling and other waste management facilities locally can help divert waste from landfill
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?
11. Protect and improve local air quality.	? Impact will depend on the specific location of sites relative to sensitive receptors

12. Protect and improve water quality and promote efficient use of water.	? Impact will depend on the specific location of sites relative to sensitive receptors
13. Support wider economic development and promote local job opportunities	+ Can help create local employment opportunities.
14. Protect and improve human health and quality of life.	? Impact will depend on the specific location of sites relative to sensitive receptors
Summary: This option seeks to make provision for very small scale facilities in rural areas and in the green belt. When sites appropriately, these facilities can help to deliver adequate facilities in more rural locations in the open countryside and in the green belt. Siting such facilities closer to the communities they serve would have positive effects in reducing the distances waste is transported for management thereby reducing GHG emissions and other negative effects associated with road transportation. Allowing small scale development in rural areas can also help support farm diversification and create local job opportunities in these areas. This option is considered likely to deliver a sustainable strategy for making provision in rural areas but it is recommended that sites are sensitively located so as to avoid adverse effects on the natural and built environment.	

Hazardous waste disposal		
Sustainability Appraisal objectives	**Option 1** **Provide for predicted future hazardous waste disposal needs within Nottinghamshire**	**Option 2** **Do not provide for future hazardous waste disposal needs within Nottinghamshire**
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	+ Facilities in Nottinghamshire would help in meeting local needs, However, these are likely to be on a small scale and not economically viable.	+ The current situation provides an adequate network of economically viable facilities.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Effects will depend largely on the scale of the landfill site and also the sensitivity of the location.	0 This option does not promote new facilities
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	+ Facilities in Nottinghamshire would reduce transport distances	- This option could lead to negative road transport impacts although these are likely to be minor.

4. Protect the quality of the historic environment above and below ground.	? Effects will depend largely on the scale of the landfill site and also the sensitivity of the location.	0 This option does not promote new facilities
5. Protect and enhance the quality and character of our townscape and landscape.	? Effects will depend largely on the scale of the landfill site and also the sensitivity of the location.	0 This option does not promote new facilities
6. Minimise impact and risk of flooding.	? Effects will depend largely on the scale of the landfill site and also the sensitivity of the location.	0 This option does not promote new facilities
7. Minimise any possible impacts on and increase adaptability to climate change.	? Facilities in Nottinghamshire may reduce transport distances, but this is unlikely to lead to significant benefits in terms of mitigating climate change as long as the quantities involved are relatively small. There is potential for this situation to change, resulting in effects becoming significant.	? As long as only small amounts of hazardous waste are being transported within the East Midlands then associated greenhouse gas emissions are unlikely to be significant. There is potential for this situation to change if the amount of waste produced increases or waste has to be transported outside of the region.
8. Protection of high quality agricultural land and soil.	? Effects will depend largely on the scale of the landfill site and also the proximity to sensitive receptors.	0 This option does not promote new facilities
9. Promote more efficient use of land and resources	0 The safe disposal of hazardous waste is of primary importance and there are few opportunities for other more prudent uses	0 The safe disposal of hazardous waste is of primary importance and there are few opportunities for other more prudent uses
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	0	0

11. Protect and improve local air quality.	? Hazardous sites take wastes that are considered to be more harmful because of their potentially toxic and dangerous nature. However, as these pose a significant risk to the environment or human health, sites require greater control measures. Effects will depend largely on the scale of the landfill site and also the proximity to sensitive receptors.	0 This option does not promote new facilities
12. Protect and improve water quality and promote efficient use of water.	? Effects will depend largely on the scale of the landfill site and also the proximity to sensitive receptors.	0 This option does not promote new facilities
13. Support wider economic development and promote local job opportunities	+ This option provides opportunities for local job creation	- This option does not promote new facilities
14. Protect and improve human health and quality of life.	? Hazardous sites take wastes that are considered to be more harmful because of their potentially toxic and dangerous nature. However, as these pose a significant risk to the environment or human health, sites require greater control measures. Effects will depend largely on the scale of the landfill site and also the proximity to sensitive receptors.	0 This option does not promote new facilities

Summary:

Option A - There are sustainability benefits associated with dealing with hazardous waste closer to where it is produced as this is in-line with the proximity principle, and so will reduce the total distance that waste must be transported (especially by road). However it is not clear that this impact would be significant, or would result in significant climate mitigating effects as the amount of hazardous waste produced is currently relatively small. Furthermore, Option A would not entail a sustainable approach to waste management as long as there is not enough locally produced hazardous waste to make sites economically viable.

Option B – Not making provision within Nottinghamshire would maintain the current situation of dealing with hazardous waste outside the County. It has some environmental benefit in that it avoids disposing hazardous waste in the area (the area is limited in terms of geological suitability) therefore eliminating potential for negative effects that may result from disposing hazardous waste. This option is however in conflict with the proximity principle as it leads to waste being taken further for management. At the present however, this option represents the most sustainable option due to the relatively small quantities of waste currently produced in the area. However, as capacity in other areas is used up there will be a case for reviewing provision within Nottinghamshire.

Site Search sequence – The following sequential approach is suggested: 1. reuse waste on site 2. Use existing land or buildings close to source 3. Manage waste further away only where there are no reasonable alternatives 4. Greenfield land close to source	
Sustainability Appraisal objectives	
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	0
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	? Impact on biodiversity will depend on the specific location of sites relative to sensitive receptors.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	++ The proposed sequence can significantly reduce the distances waste has to be transported therefore reducing the impact of waste transportation.
4. Protect the quality of the historic environment above and below ground.	? Impact on heritage assets /built environment will depend on the specific location of sites relative to sensitive receptors.
5. Protect and enhance the quality and character of our townscape and landscape.	? Impact on the townscape/landscape will depend on the specific location of sites relative to sensitive receptors.
6. Minimise impact and risk of flooding.	? Impact will depend on the specific location of sites relative to the flood zones
7. Minimise any possible impacts on and increase adaptability to climate change.	+ The suggested sequence has potential to limit GHG emissions related to transport if successfully adopted.
8. Protection of high quality agricultural land and soil.	? Impact on soil quality will depend on the specific location of sites, agricultural grade of land and the operations on site
9. Promote more efficient use of land and resources	++ The proposed sequences seeks re-use of waste on site and of existing buildings and land. This has a positive effect as it encourages prudent use of resources,

10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	0
11. Protect and improve local air quality.	?/+ Impact on air quality will depend on the specific location of sites relative to sensitive receptors. However, following the proposed sequence can help reduce the distances waste is transported thus reducing air pollution associated with road transportation.
12. Protect and improve water quality and promote efficient use of water.	? Impact on water resources will depend on the specific location of sites relative to sensitive receptors.
13. Support wider economic development and promote local job opportunities	0
14. Protect and improve human health and quality of life.	? Impact on amenity/human health will depend on the specific location of sites relative to sensitive receptors. It would also be influenced on the operational procedures on site.
Summary: Overall, the proposed site search sequence was found to support sustainability principles especially with regard to promoting efficient use of resources, reducing distances waste is transported and reducing contribution to climate change and air pollution. It was however difficult to assess what the effects of adopting this sequence would be on the natural and built environment as these impacts will depend on the actual location of sites, the type of facilities, nature of operations and proximity to sensitive receptors.	

Site Criteria: The criteria sets out the broad types of sites that may in principle be acceptable for waste use (see page 44 of the Consultation of further Issues and Options Consultation Paper).	
Sustainability Appraisal objectives	
1. Minimise impact of waste management on human health	++ The criteria suggests that only small scale sites 'bring sites' with least potential for impacting on human health can be located on community sites .
2. Protect and enhance amenity	?
3. Encourage greater community involvement in the planning process	0
4. Protect and enhance biodiversity at all levels	? Impact on biodiversity will depend on the specific location of sites relative to sensitive receptors.
5. Protect the heritage assets and general character and quality of the built environment	? Impact on heritage assets /built environment will depend on the specific location of sites relative to sensitive receptors.
6. Protect and enhance the townscape and the character and openness of the countryside	? Impact on the townscape/landscape will depend on the design, type and scale of developments types allowed in the open countryside (aggregate recycling and composting).
7.Limit the impact of waste management activities on air quality	?/+ Impact on air quality will depend on the specific location of sites relative to sensitive receptors.
8. Limit the impact of waste management on water quality	? Impact on water resources will depend on the specific location of sites relative to sensitive receptors.
9. Protect soil quality	? Impact on soil quality will depend on the specific location of sites, agricultural grade of land and the operations on site.
10.Encourage the prudent use of natural resources, energy efficiency and support production and use of renewable energy	+ The criteria encourages re-use of derelict builds as well as previously developed land

11.Limit the contribution of waste management to climate change and contribute to adaptation to the effects of climate change	0
12.Maximise the re-use of previously developed land and the existing transport network	+ Use of previously developed land is assumed to be included in the Councils' priority on efficient resource use.
13.Promote high standards of sustainable design and construction	0
14.Ensure an adequate network of suitable waste management sites for the safe treatment and disposal of waste	0
15. Increase waste awareness and promote integrated waste management	+ The site sequence promotes integrated waste management as it seeks to guide the different types of waste management.
16. Minimise waste and increase re-use, recycling and recovery	+ Locating bring sites in areas where people frequent can increase the amount of waste recycled and re-used.
17. Reduce the impact of transporting waste	+ Promotes locations where people already use local services for the location of bring sites thus reducing the need to travel

Summary: The proposed criteria can help increase the amount of waste re-used and recycled by locating bring sites closer to sources of waste. It is recommended that in developing these criteria further, proximity to sources of waste should be considered for other waste facility types to ensure that the best locations are also those easily accessible reducing the need to transport waste far.

The criteria supports efficient use of resources and encourages re-use of previously developed land and derelict buildings and seeks to co-locate waste management facilities with other compatible land uses including industrial and technology parks. This can have a positive effect especially where such co-location reduces the need to travel but it could also lead to adverse cumulative effects on the environment depending on the existing land uses and the surrounding environment.

Restoration of derelict land including former colliery land, disused quarries and railway land would have a beneficial effect on amenity and improving general environmental quality in such areas. It can also provide opportunities for biodiversity creation and areas for recreation. Land raising in the open countryside although not fully proposed could have detrimental effects on the environment and it is recommended that this should only be allowed in exceptional circumstances with stringent operational criteria to ensure least harm to the environment. Overall, the criteria if implemented successfully can contribute to sustainable waste management in the sub-region.

Safeguarding		
Sustainability Appraisal objectives	**Option 1** **Having a safeguarding policy**	**Option 2** **Safeguarding only from major facilities**
1. Minimise impact of waste management on human health	0	0
2. Protect and enhance amenity	0	0
3. Encourage greater community involvement in the planning process	0	0
4. Protect and enhance biodiversity at all levels	? Impact dependent on location of safeguarded site and whether it is eventually developed, and on proximity to sensitive biodiversity receptors.	? Impact dependent on location of safeguarded site and whether it is eventually developed, and on proximity to sensitive biodiversity receptors and nature of operations.
5. Protect the heritage assets and general character and quality of the built environment	? Impact dependent on location of safeguarded site and proximity to sensitive heritage assets/built environment receptors.	? Impact dependent on location of safeguarded site and proximity to sensitive heritage assets/built environment receptors.
6. Protect and enhance the townscape and the character and openness of the countryside	? Impact dependent on location of safeguarded site and proximity to sensitive heritage assets/built environment receptors.	? Impact dependent on location of safeguarded site and proximity to sensitive heritage assets/built environment receptors.
7.Limit the impact of waste management activities on air quality	? Impact dependent on location of safeguarded site.	? Impact dependent on location of safeguarded site.
8. Limit the impact of waste management on water quality	? Impact dependent on location of safeguarded site.	? Impact dependent on location of safeguarded site.

9. Protect soil quality	? Impact dependent on location of safeguarded site.	? Impact dependent on location of safeguarded site.
10.Encourage the prudent use of natural resources, energy efficiency and support production and use of renewable energy	+ Promotes re use of previously developed land	+ Promotes re use of previously developed land
11.Limit the contribution of waste management to climate change and contribute to adaptation to the effects of climate change	0	0
12.Maximise the re-use of previously developed land and the existing transport network	+ Promotes re use of previously developed land	+ Promotes re use of previously developed land
13.Promote high standards of sustainable design and construction	0	0
14.Ensure an adequate network of suitable waste management sites for the safe treatment and disposal of waste	0	0
15. Increase waste awareness and promote integrated waste management	0	0
16. Minimise waste and increase re-use, recycling and recovery	0	0
17. Reduce the impact of transporting waste	+ Safeguarding can have a positive impact where sites have potential for rail or water based access.	+ Safeguarding can have a positive impact where sites have potential for rail or water based access.
Summary: Note options are not mutually exclusive.		

Option A- Having a safeguarding policy is likely to have positive effects where it promotes re-use of previously developed land or buildings leading to better use of land resources. It can also make a positive contribution to reducing reliance on road freight where the sites provide potential for use of water or rail based freight.

Option B – This option has the same benefits as Option A in terms of encouraging use of previously developed land as well as reducing road transportation where sites provide potential for use of more sustainable transport modes. Limiting safeguarding to major facilities is judged to be positive as it reduces the risk of sterilising other competing land uses like housing and employment. It also provides greater certainty for industry which in turn can encourage investment in the waste sector.

Extensions to existing sites		
Sustainability Appraisal objectives	**Option 1** **Allowing extension of existing sites where this brings clear environmental benefits**	**Option 2** **Not allowing extension**
1. Ensure that adequate provision is made to meet local and national mineral demand and to provide a network of suitable waste management sites for the safe treatment and disposal of waste.	+ Can help contribute towards providing capacity especially as its considered easier	- Can affect provision where existing sites with potential for extension are closed without making new provision
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	+ Where extension includes measures to improve biodiversity	?/+ Depending on reasons for closure and location of site relative to sites of biodiversity value
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	0	0
4. Protect the quality of the historic environment above and below ground.	+ Where extension includes measures to improve the built environment	?/+ Depending on reasons for closure and location of site
5. Protect and enhance the quality and character of our townscape and landscape.	+ Where extension includes measures to improve the design of the facility to ensure it does not affect the landscape/openness	?/+ Depending on reasons for closure and location of site

6. Minimise impact and risk of flooding.	+ Where extension includes measures to mitigate against flooding	?/+ Depending on reasons for closure and location of site
7. Minimise any possible impacts on and increase adaptability to climate change.	0	0
8. Protection of high quality agricultural land and soil.	+ Where extension includes measures to improve the operation of a facility so as to reduce soil contamination	?/+ Depending on reasons for closure – whether the operations had adverse effects on soil
9. Promote more efficient use of land and resources	+ Can help increase recycling and recovery especially where extension leads to increased throughput as well as re-use of facilities and land	- Can have negative effect where existing sites with potential for extension are closed without making new provision
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	0	0
11. Protect and improve local air quality.	+ Where extension includes measures to improve the operation of a facility so as to reduce air emissions	?/+ Depending on reasons for closure – whether the operations had adverse air quality effects
12. Protect and improve water quality and promote efficient use of water.	+ Where extension includes measures to improve the operation of a facility so as to reduce water pollution	?/+ Depending on reasons for closure – whether the operations had adverse water quality effects
13. Support wider economic development and promote local job opportunities	0	0

14. Protect and improve human health and quality of life.	+ Where extension results in clear amenity value	?/+ May lead to positive effects where site is being restored for amenity value

Summary:

Option A- This option supports extension of existing sites where this would bring clear environmental benefits. It scores well against SA objectives related to protecting the natural and built environment as it is assumed extension would lead to enhancement or improvement of for example biodiversity sites or reduce pollution/contamination and also improve the aesthetics through good design where applicable. The option also supports the SA objective on ensuring an adequate network of suitable sites as extending existing sites may be more deliverable than acquiring new sites. This option would also promote re-use of existing land and in some cases facilities therefore supporting the SA objective on prudent use pf resources.

Option B – This option opposes extending existing sites. This can have potential for positive environmental benefits where past operation of a site has resulted in negative impacts on the environment. Restoration of such sites can have clear benefits on such environmental features as biodiversity, landscape and countryside as well as on water and air quality. Restricting expansion of sites especially for sites with potential for extension can however have negative effects including not being able to meet capacity and having to move waste further leading to undesirable road transport related impacts.