

WASTE DISPOSAL



Disposal of untreated household, commercial and industrial waste is the most common waste management method, but is the least sustainable.

INTRODUCTION

- 10.1 Waste disposal involves the deposit of waste within a mineral or other void (landfill), or upon land, raising the original contours (land raising). Despite being the least desirable option within the waste hierarchy, as indicated by Policy W2.1, waste disposal is by far the most common method of waste management both in the UK and in Nottinghamshire. For example, 70% of the UK's household, commercial, construction and demolition and other non-controlled waste goes to landfill (see Chapter 1, Table 1.2). Similarly most of Nottinghamshire's waste is managed by landfill (see Chapter 1, Table 1.3). Plan 10.1 shows the location of permitted and active disposal sites in Nottinghamshire at 1st April 2000. Tables 10.1-10.3 give more detailed information about these facilities.
- 10.2 Although safe disposal is placed at the bottom of the hierarchy, it will remain an essential and major component of the Waste Strategy. This is because, even if the most optimistic assumptions on recycling and other more sustainable waste management options are achieved, large quantities of waste will still need to be disposed of. Adequate and safe disposal facilities must be provided if all of the waste produced by society is to be properly managed. Where disposal involves the reclamation of mineral voids, and, if appropriate is combined with energy recovery, it may represent the Best Practicable Environmental Option (BPEO) for dealing with certain waste arisings.

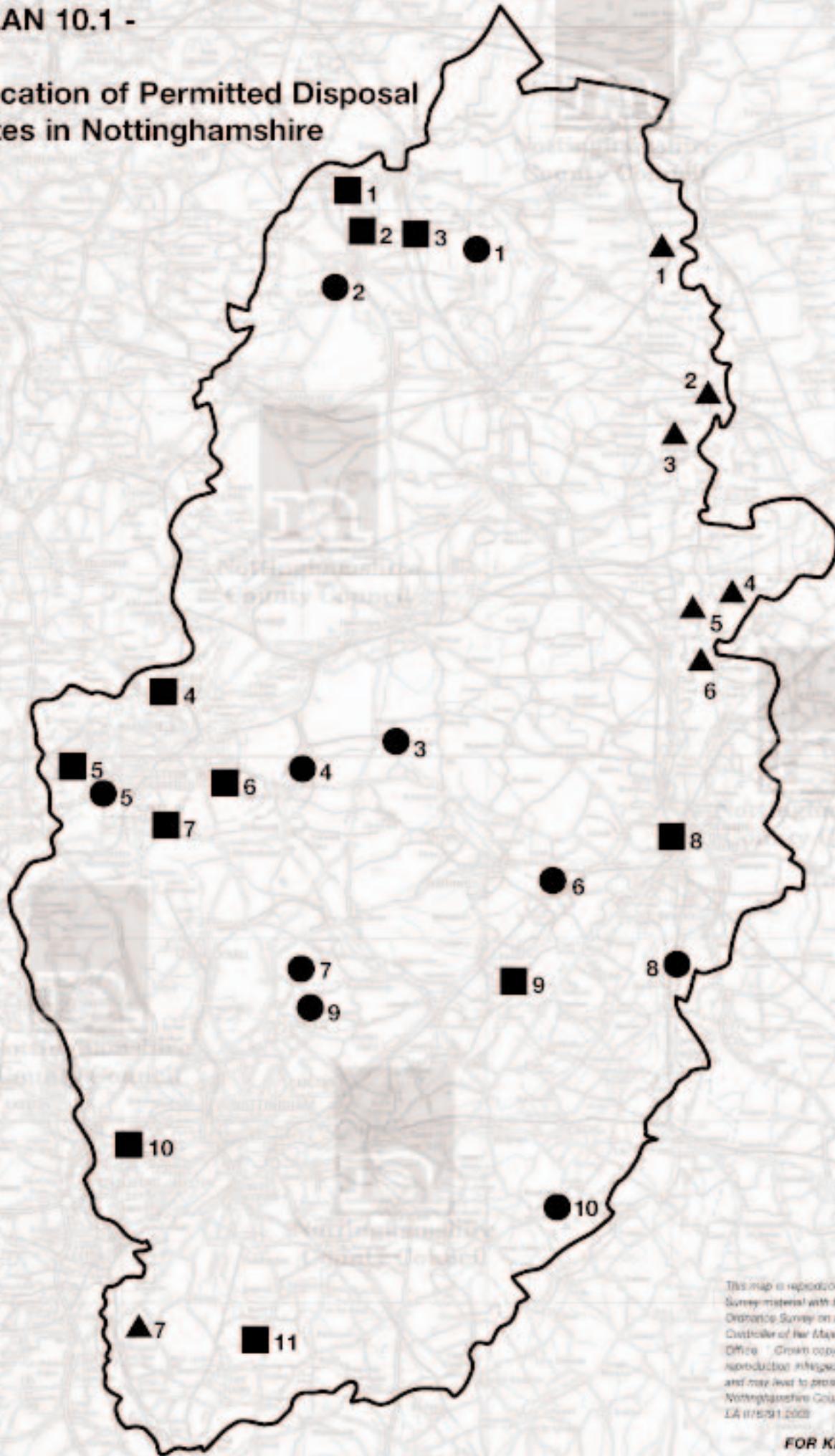
OPERATIONS AND ENVIRONMENTAL IMPACT

(a) Landfill

- 10.3 Historically, landfill has always been the cheapest and most common management method. Sites vary enormously in size ranging from the infilling of a small railway cutting, to a large worked out clay pit. Sites may include areas for sorting and storing waste, plant and machinery, weighbridges, office accommodation, internal haul roads and hardstanding for car parking. Non-inert disposal sites, dealing with household, trade and other industrial wastes, may also include perimeter litter-catch fencing, leachate lagoons, gas flaring equipment and gas-to-energy plant. After reclamation, there may be a need to keep pollution control and monitoring equipment as well as gas-to-energy plant on site for many years (see Chapter 6). A typical non-inert landfill site is illustrated in Figure 10.1.
- 10.4 The technical suitability of sites for different types of waste and the need for pre-disposal works is largely determined by geology. Whilst tipping at both inert and non-inert sites is normally done in phases, sites for non-inert waste, more typically require considerable preparatory work. The extent of such work will depend on the geology. Site preparation may include the construction of cells with clay and/or artificial linings to prevent leachate escaping. The construction of these cells involves large earth moving plant. After being tipped in layers, the waste is graded and compacted and finally capped with low permeability material. The practicalities of working within sites varies greatly. For example some sites may be phased behind extraction in an active mineral site, whilst others may fill a worked out mineral site.

PLAN 10.1 -

Location of Permitted Disposal Sites in Nottinghamshire



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FOR KEY SEE OVER

KEY TO PLAN 10.1

Location of Permitted Disposal Sites in Nottinghamshire

KEY

- Disposal Sites Accepting Household, Commercial and Non Hazardous Industrial Waste

1. Daneshill
2. Carlton Forest Quarry
3. Bilsthorpe
4. Rufford (inactive)
5. Sutton
6. Fiskerton
7. Burntstump
8. Staple Quarry (gypsum waste only until 1998)
9. Dorket Head Quarry
10. Barnstone

- Disposal Sites Accepting Inert Construction and Demolition Waste

1. Lords Wood Quarry
2. Serlby Quarry
3. Scrooby Top Quarry
4. Vale Road, Mansfield Woodhouse
5. Export Drive, Sutton-in-Ashfield
6. Berry Hill
7. Sutton Quarry
8. Muskham Works (two tips at this site)
9. Coneygre Farm, Hoveringham
10. Bramcote
11. Bunny

- ▲ Disposal Sites Accepting Power Station Ash

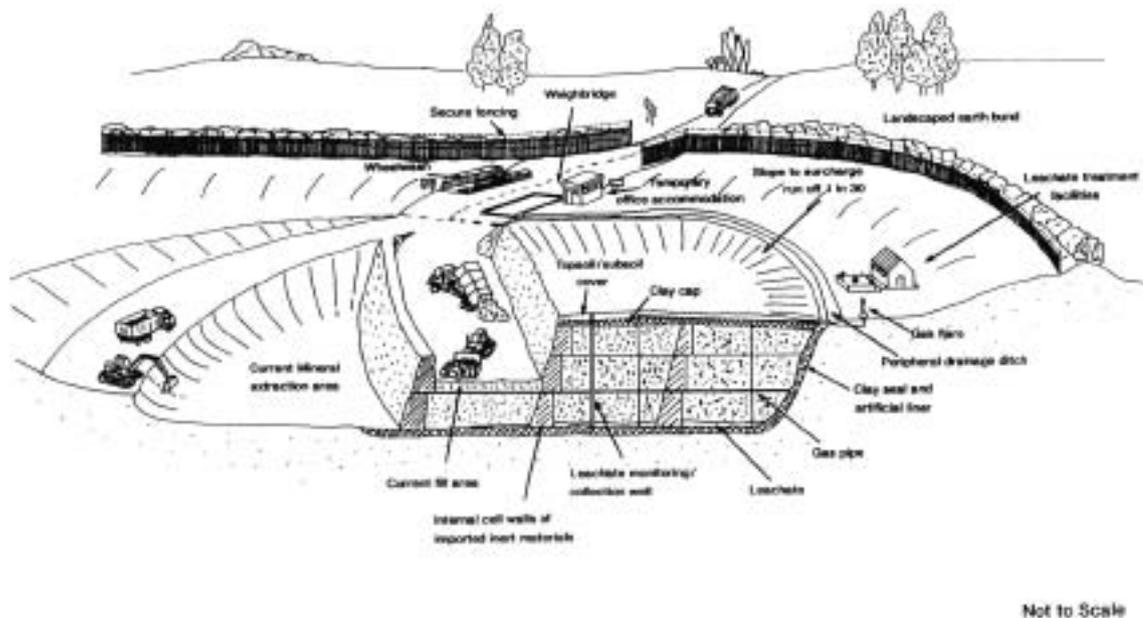
1. Bole-ings (West Burton Power Station)
2. On-site (Cottam Power Station)
3. Rampton Gravel Pit (Cottam Power Station)
4. North Scarle (High Marnham Power Station)
5. Girton (High Marnham Power Station)
6. Besthorpe (High Marnham Power Station)
7. Winking Hill (Ratcliffe on Soar Power Station)

Note: The majority of sites that can accept household, commercial and non hazardous industrial waste can also accept inert construction and demolition waste. Some inert sites may also accept limited quantities of non-inert waste.

Scale: 1:312,500 (1" to 5 miles) 1cm = 3.125km

- 10.5 The main issues raised by landfill sites are visual impact, traffic and noise. Odour and litter can also be problems at non-inert sites. A further major concern is the risk of pollution through leakage of leachates, particularly where non-inert disposal sites are located within areas where ground water is vulnerable. However, the element of risk can be reduced by appropriate environmental controls and monitoring (see Chapter 3).
- 10.6 Whilst waste disposal can raise major environmental concerns, an important benefit of landfilling is that in certain situations it may be the most appropriate, if not the only, means for reclaiming mineral sites and other derelict voids.

Figure 10.1 Illustration of a Typical Non-inert Landfill Site.



(b) Landraising

- 10.7 The environmental impacts relating to landraising schemes are in many respects similar to those of landfill. The main difference is that because all activities are above ground level, there is greater potential for adverse visual, noise, odour, and litter impact. Landraising also creates artificial contours and changes in drainage patterns, unlike landfilling which generally restores land back close to its original form. Landraising on greenfield sites usually leads to an actual reduction in the quality of the land. The main advantage of landraising is that, because the body of waste is more accessible, it is easier to monitor and maintain pollution control measures for leachates.

TABLE 10.1 DISPOSAL SITES WITH PLANNING PERMISSION TO ACCEPT HOUSEHOLD, COMMERCIAL NON HAZARDOUS INDUSTRIAL AND INERT CONSTRUCTION AND DEMOLITION WASTE – APRIL 2000						
See Notes below for comments on adequacy of tipping capacity for Plan period and other relevant factors affecting life of site						
District	Site	Operator	1999/00 Input Tonnes	Remaining Capacity m ³ as at 31/3/00	Planning Permission expiry date month/year	Estimated Year of Closure (see General Note 3)
Bassetlaw	Daneshill	Waste Recycling Group	148,000	2,600,000	5/2048	2015
Bassetlaw	Carlton Forest Quarry	Waste Recycling Group	87,000	<1,000,000	12/2015	2012
Newark & Sherwood	Fiskerton	Waste Recycling Group	0	Not currently accepting waste	none	Unknown
Newark & Sherwood	Bilsthorpe	Waste Recycling Group	64,000	600,000	11/2007	2006
Newark & Sherwood	Rufford	Notts County Council owned	Inactive	600,000	9/2009	Unknown
Newark & Sherwood	Staple Quarry	Waste Recycling Group and British Gypsum	54,500	2,000,000	10/2024	2020
Ashfield	Sutton	Waste Recycling Group	207,000	1,200,000	none	2007
Gedling	Burntstump	Waste Recycling Group	163,000	500,000	none	2003
Gedling	Dorket Head Quarry	Waste Recycling Group	139,500	2,000,000	none	2020
Rushcliffe	Barnstone	Waste Recycling Group	45,400	125,000	none	2003

Source - Environment Agency and Nottinghamshire County Council

General Notes

1. The above input figures may include waste collected outside the County. They cannot therefore be considered as Nottinghamshire's arisings, some of which are recycled and /or exported out of the County.
2. Cubic Metre of void space approximates to 1 tonne of waste (actual values will vary between sites and types of waste).
3. Unless otherwise stated in notes, year of closure based on expiry of planning permission or expected completion of filling void whichever comes first. Not all of permitted disposal scheme may be licensed.

Notes on Sites

1. **Daneshill** - Capacity adequate for Plan period
2. **Carlton Forest** - Capacity adequate for Plan period
3. **Fiskerton** - Site replaced by Staple for 5 Years from April 1998. Timescales for any further waste disposal at Fiskerton unknown.
4. **Bilsthorpe** - Site assumed to be replaced by Rufford (see below).
5. **Rufford** - Planning permission to increase capacity granted, but as yet no license has been applied for. Aquifer constraints will need to be resolved.
6. **Staple** - Main household waste tip opened in July 1998. An established adjacent, but separate, tip taking small quantities of plasterboard waste also exists.
7. **Sutton** - Capacity adequate for Plan period but replacement capacity will need to be resolved by the end of Plan period.
8. **Burntstump** - Capacity inadequate for Plan period - replacement capacity required.
9. **Dorket Head** – Site includes southern extension permitted in 1997 and eastern extension permitted in 1986. Tipping rates constrained by rate of clay extraction.
10. **Barnstone** - Capacity inadequate for Plan period- replacement capacity required. Although outside shortfall area, Staple Quarry and/or Fiskerton could take waste arising from Rushcliffe, especially east Rushcliffe, if no closer options become available. Much depends on expansion of Eastcroft Incinerator.

TABLE 10.2 DISPOSAL SITES WITH PLANNING PERMISSION TO ACCEPT MAINLY INERT CONSTRUCTION AND DEMOLITION WASTE – APRIL 2000						
See Notes below for comments on adequacy of tipping capacity for Plan period and other relevant factors affecting life of site						
District	Site	Operator	1999/00 Input Tonnes	Remaining Capacity m ³ as at 31/3/00	Planning Permission expiry date month/year	Estimated Year of Closure (see General Note 3 Table 10.1)
Bassetlaw	Lords Wood Quarry	G H Wadsworth	3,700	Not Available	12/2028	2016
Bassetlaw	Serlby Quarry	Caird Environmental	3,200	750,000	8/2007	2015
Bassetlaw	Scrooby Quarry	Rotherham Sand & Gravel	246	Not Available	None	2005
Mansfield	Berry Hill Quarry	Mansfield Sand	26,700	Not Available	5/2009	Closed end 1999
Mansfield	Vale Rd Mansfield Woodhouse	Midland Landfill	146,000	2,400,000	11/2009	2009
Newark & Sherwood	Muskham Works	British Sugar	35,000	Not Available	4/2010	2008 +
Newark & Sherwood	Coneygre Farm Hoveringham	C F & J M Lee	2,400	41,000	4/2006	Unknown
Ashfield	Sutton Quarry	Midland Land Reclamation Ltd	105,000	210,000	2/2000	Closed March 2000
Broxtowe	Bramcote Sand Quarry	Biffa Waste Management services	80,000	>1,000,000	10/2008	2008
Rushcliffe	Bunny Quarry	Safe Waste Ltd	90,000	193,000	12/2000	2003

Source - Environment Agency and Nottinghamshire County Council

General Notes - see Table 10.1

Notes on Sites

1. **Lord's Wood Quarry** - Capacity adequate for Plan period.
2. **Serlby** - Void capacity far exceeds life of planning permission. Extending life of permission or amending reclamation scheme represent most likely future options.
3. **Scrooby** - life linked to sand extraction. Site could be replaced by other long term sites.
4. **Berry Hill** – site closed as permission has been granted for housing development. Alternative sites such as Vale Road, Mansfield Woodhouse have spare capacity. (See below).
5. **Vale Road Mansfield Woodhouse** - Potential void far exceeds current time limit set by planning permission. Extending life of permission or amending reclamation scheme most likely future options. Tipping rates could increase to absorb closure of Berry Hill and Sutton.
6. **Muskham Works** - Life of site difficult to predict because planning permission allows recycling of tipped soils. Longer term capacity beyond 2008 exists within former borrow pit associated with construction of Newark bypass.
7. **Coneygre Farm** - Filling rates have been erratic but remaining capacity expected to be adequate for Plan period. Application for treatment license refused.
8. **Sutton** - Site is expected to be replaced by existing longer term sites.
9. **Export Drive, Sutton in Ashfield** - Site inactive and application to surrender license has been submitted. (Adjacent temp. 77,000 Cubic Metres tip which will allow built development also exists but excluded from Table).
10. **Bramcote** - Capacity adequate for Plan period. Tipping figure quoted relates to 1995 as more recent data unavailable.
11. **Bunny** - Void capacity exceeds life of planning permission by an estimated 2 years. Extending life of planning permission to ensure completion of approved scheme may be the most reasonable solution.

TABLE 10.3 DISPOSAL SITES FOR POWER STATIONS AND WASTE – APRIL 2000				
Power Station	Operator	Disposal Sites	Estimated Permitted	Notes on Status and Adequacy of tipping capacity
Ratcliffe on Soar	PowerGen	Winking Hill, Ratcliffe	2010	Surface disposal at Winking Hill takes PFA and can take waste desulphogypsum, although to date all has been used as a gypsum substitute by British Gypsum. Ltd.
Cottam	PowerGen	On-site lagoons and Rampton Quarry	2010	Capacity adequate for Plan period.
West Burton	Eastern Electricity	Bole-Ings	2010	Site comprises surface disposal near power station.
High Marnham	Eastern Electricity	Girton and Besthorpe Quarries	2005	Disposal phased between 2 quarries. Future requirements very uncertain due to expected increased use of PFA as a secondary aggregate, but potential capacity exists at Girton within existing sand and gravel workings or in land allocated in the Minerals Local Plan.

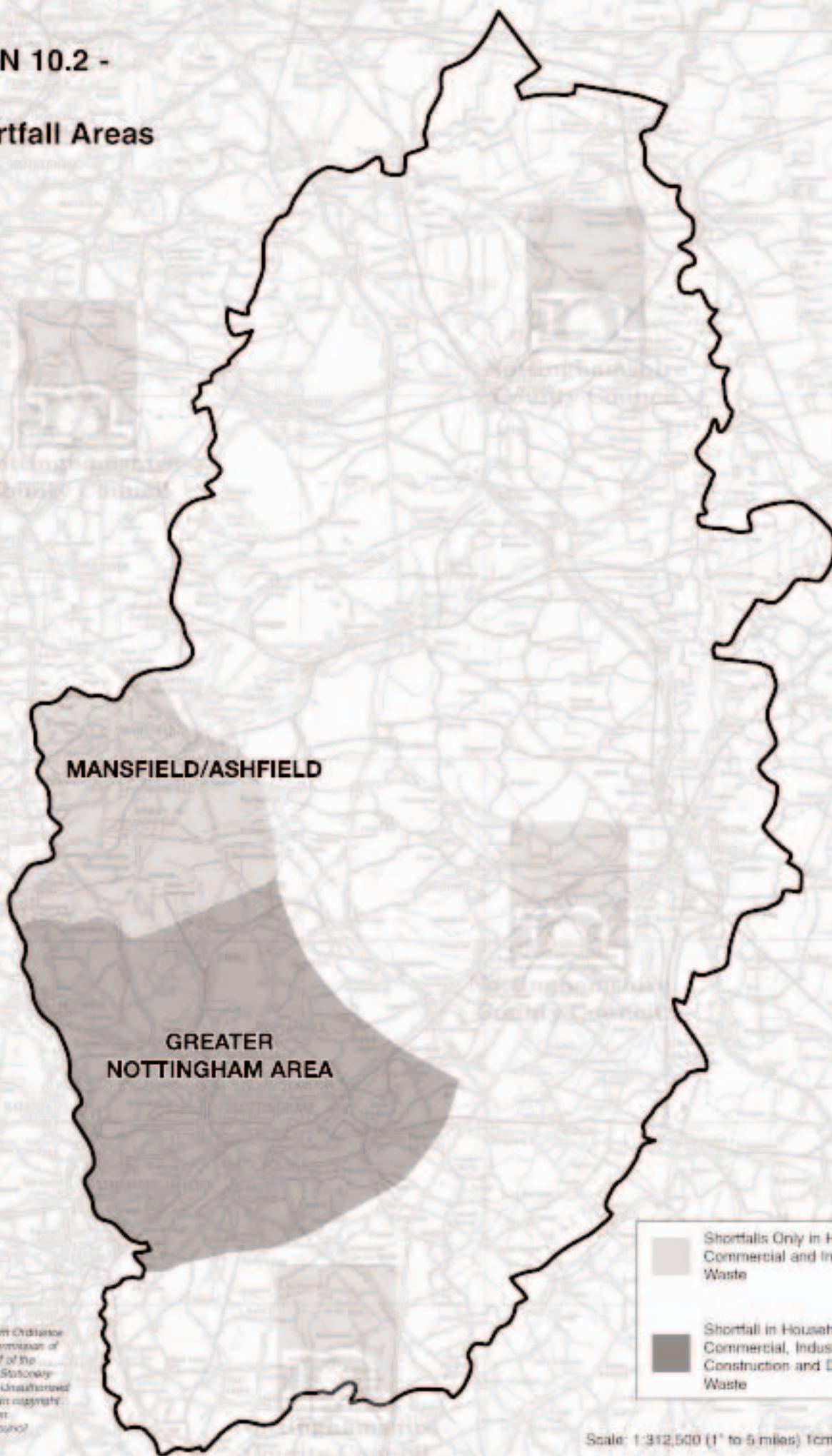
Source - Environment Agency and Nottinghamshire County Council

Note: Estimates of Disposal Capacity are probably very conservative. Since privatisation of the industry, increased pressure to sell PFA as a secondary aggregate, reduced power generation due to competition from other fuels, suggests less ash will need to be disposed of in the future. No shortfalls identified during Plan period.

SHORTFALLS IN DISPOSAL CAPACITY

10.8 The adequacy of existing disposal facilities varies considerably between sites, waste categories and parts of the County. For some major categories such as Power Station Ash (see Table 10.3) the existing permitted capacity is adequate for the Plan period. However as indicated in Tables 10.1 and 10.2 a number of sites receiving household, industrial, commercial, demolition and construction waste will be filled before or soon after the end of the Plan period. In some cases shortfalls arising from such closures may be picked up by other longer term sites. However, unless additional capacity is permitted significant shortfalls are expected to arise by the end of the Plan period and further shortfalls are expected soon afterwards. The shortfall areas are indicated in Plan 10.2 and an estimate of when and where the shortfalls are likely to arise are summarised in Table 10.4. The methodology used to identify and quantify these shortfalls and how they translate into the need for new capacity, and the impact of possible changes in waste management practices, are considered below.

PLAN 10.2 - Shortfall Areas



MANSFIELD/ASHFIELD

GREATER NOTTINGHAM AREA

	Shortfalls Only in Household, Commercial and Industrial Waste
	Shortfall in Household, Commercial, Industrial, Construction and Demolition Waste

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Scale: 1:312,500 (1" to 5 miles) 1cm = 3.125km

Method of Shortfall Assessment

- 10.9 The shortfalls given in Table 10.4 have been identified by observing recent disposal patterns and considering the impact of disposal sites predicted to close within the Plan period (see Figures 10.2 and 10.3). Future tipping rates are assumed to remain similar to current rates. This is based on the County Council's Waste Management Statement which predicts that arisings of the above categories of waste in Nottinghamshire will remain at broadly similar levels throughout the Plan period. (Whilst waste arisings do not necessarily correspond to rates of disposal in the County, any significant changes are likely to influence disposal rates assuming waste management practices and movements of waste in terms of exports and imports remain similar.) This methodology can only give a general indication of likely future needs because much of the information used is based on variable and uncertain criteria. For example the estimates of site closure dates, given in Tables 10.1 and 10.2, are based on recent inputs of wastes which may change through time. Allowances for settlement as tipping progresses are also difficult to accurately predict. Additionally, the reliability of void calculations made by operators is likely to vary from site to site.
- 10.10 **Important Note** : The shortfall estimates set out below pre-date the publication of the new national strategy 'Waste Strategy 2000'. This strategy sets out specific targets which principally aim to reduce the proportion of household waste going to landfill during the period 2003 - 2020. The assumptions made in the Plan also consider possible reductions in waste disposal, which, although not based on Waste 2000 produce a similar outcome in terms of estimated shortfalls. The longer term implications of this Strategy, along with the future development and success of the integrated waste management strategies described in Chapter 1 will be taken into account when this Plan is reviewed.

Greater Nottingham Area

- 10.11 During the Plan period, the completion of Barnstone and Burntstump tips in 2003 will result in a shortfall of 220,000 tonnes per annum. The loss of Barnstone may initially be absorbed by other sites in the Nottingham area, from where much of Barnstone's waste is sourced. If no other closer sites become available, then Staple Quarry and/or Fiskerton could take waste from the southern part of the Greater Nottingham shortfall area, ie Rushcliffe and these may serve as a partial replacement. A more critical event will be the loss of Burntstump, as then the only currently consented site near Nottingham capable of taking large quantities of non-inert waste will be Dorket Head, whose input rates are limited by the phased clay extraction. This implies that additional capacity to serve the Greater Nottingham area needs to be permitted by this date, if waste is to be disposed of locally. From 2003 there will also be an estimated shortfall in disposal capacity for inert waste of 95,000 tonnes per annum following the closure of the Bunny Landfill site. If no replacement capacity is found by this date, then inert waste would most likely have to be disposed of at sites such as Bramcote or the non-inert sites noted above.

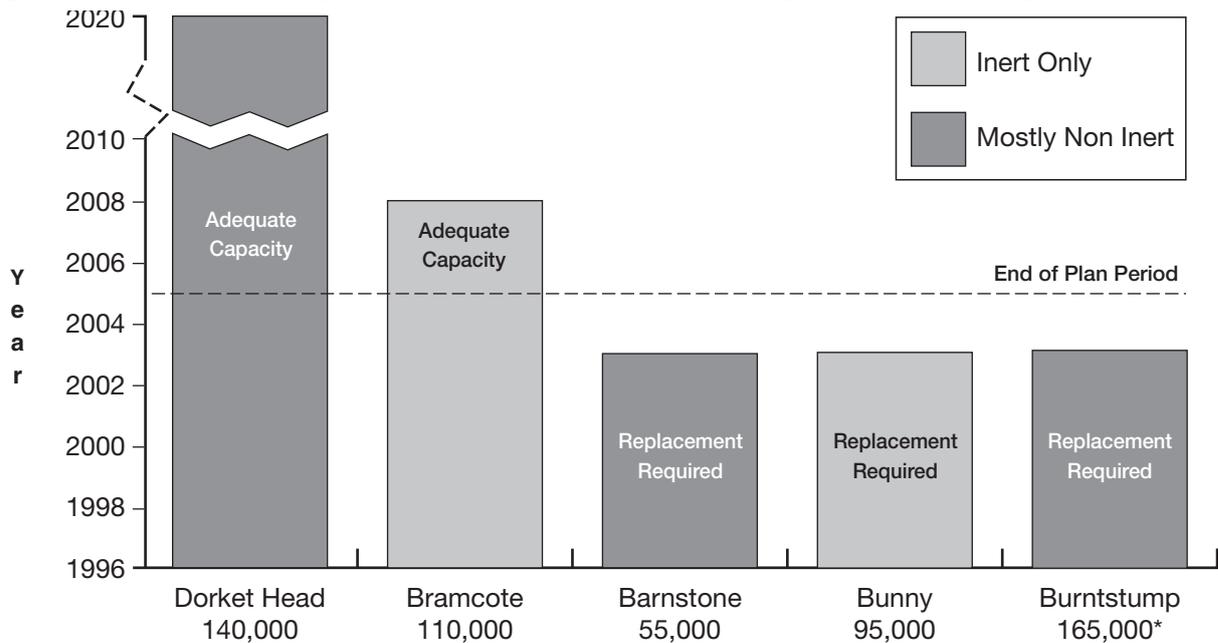
Mansfield/Ashfield Area

- 10.12 The Mansfield/Ashfield area is also anticipated to have a shortfall in capacity during and immediately beyond the Plan period. Initially, this is likely to be limited to 10,000 tonnes per annum due to the closure of Burntstump Landfill in 2003. This small shortfall could be absorbed at other sites, such as Sutton or possibly Dorket Head if no new capacity has been permitted. The critical time will come when the Sutton Landfill site closes in 2007, which will result in a total shortfall of 185,000 tonnes per annum. Although this falls beyond the Plan period (which ends on 31 December 2004) a replacement site will need to be planned for and permitted well in advance if continuity is to be maintained. Accordingly, it is considered relevant to take account of this during the current Plan period.

Best and Worst Case Scenario's

- 10.13 These shortfalls are equivalent to the need to provide one, or possibly two, major non-inert and one major inert disposal sites to serve the Greater Nottingham area. The Mansfield/Ashfield area will require one or possibly two large non-inert disposal sites.
- 10.14 These predictions are based on a "worst case" scenario and assume that the policies contained within Chapters 5 - 9 have little impact on reducing disposal needs (see Figure 10.4). These chapters aim to encourage other forms of managing waste, including household waste recycling centres, materials recycling facilities, mini recycling centres, aggregate recycling centres, scrapyards, composting facilities and waste treatment such as incineration. The role of more experimental waste management methods is also considered.
- 10.15 In particular the "worst case" scenario assumes that the third line at the Eastcroft Incinerator does not become operative and recycling, composting and other treatment initiatives do not increase their role significantly. It is essential to consider this scenario, as the Plan can only encourage, not force, the waste industry to take up these opportunities. Proposals for more sustainable methods of managing waste are not certain to come forward.
- 10.16 The "best case" scenario assumes that the third line at the Eastcroft Incinerator becomes operative by around 2000 and that recycling, reuse and other initiatives result in a 10% decrease in the quantity of waste currently being disposed of in Nottinghamshire (see Figure 10.2). The 10% estimate is speculative but represents a very significant improvement above current levels. Although this would result in an important and sizeable reduction in the overall shortfall capacity required, particularly for non-inert waste, it is not likely to have sufficient impact so as to alter the number of replacement sites required during the Plan period (see para 10.13).

Figure 10.2 – Adequacy of Disposal Facilities Serving Greater Nottingham



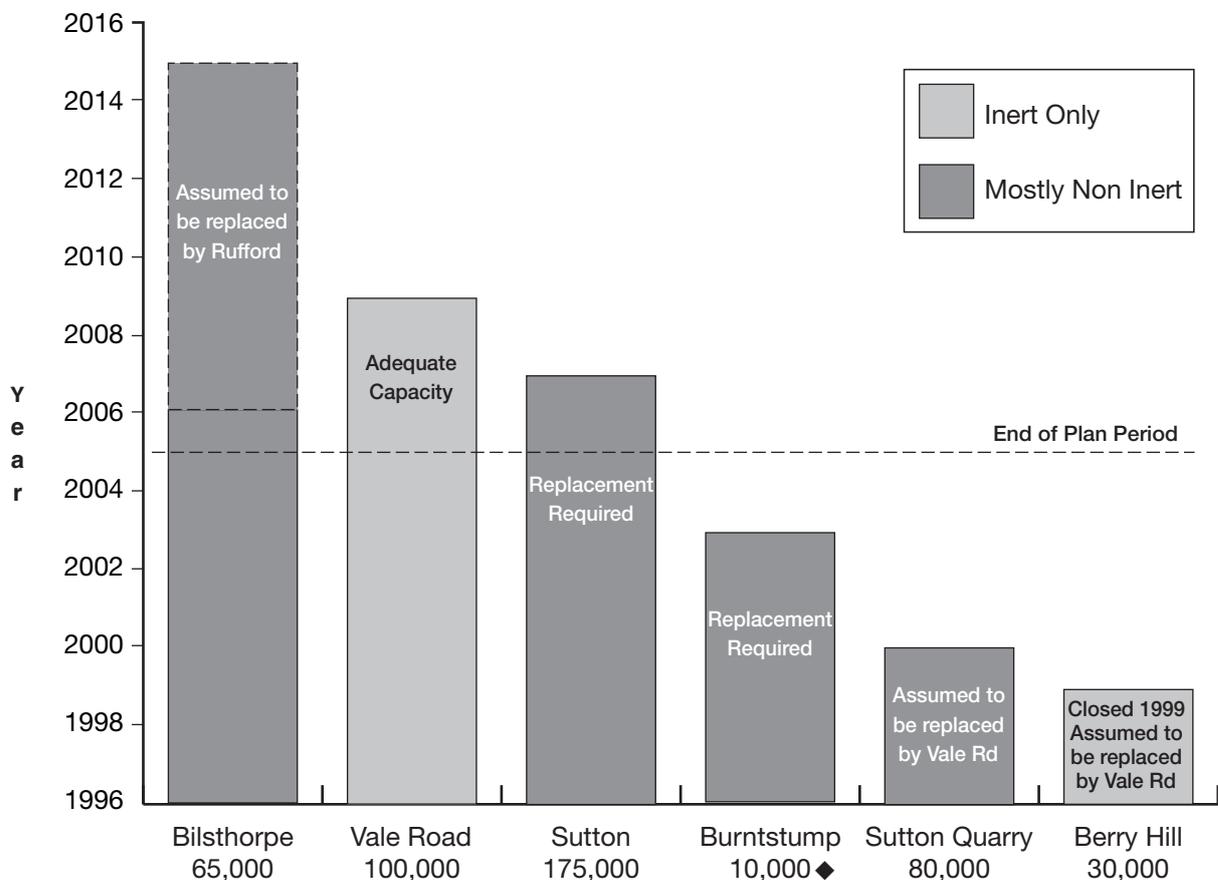
Waste Disposal Input in Tonnes per annum. Figures indicate average annual input between April 1997 and April 2000.

*Excludes estimated 10,000 tonnes of waste originating from Mansfield/Ashfield. (See Fig. 10.3).

Note: All values rounded to nearest 5K.

Barnstone – If no new options become available Staple Quarry and/or Fiskerton may serve as a partial replacement (see Table 10.1, note 10).

Figure 10.3 – Adequacy of Disposal Facilities Serving Mansfield & Ashfield



Waste Disposal Input in Tonnes per annum. Figures indicate average annual input between April 1997 and April 2000.

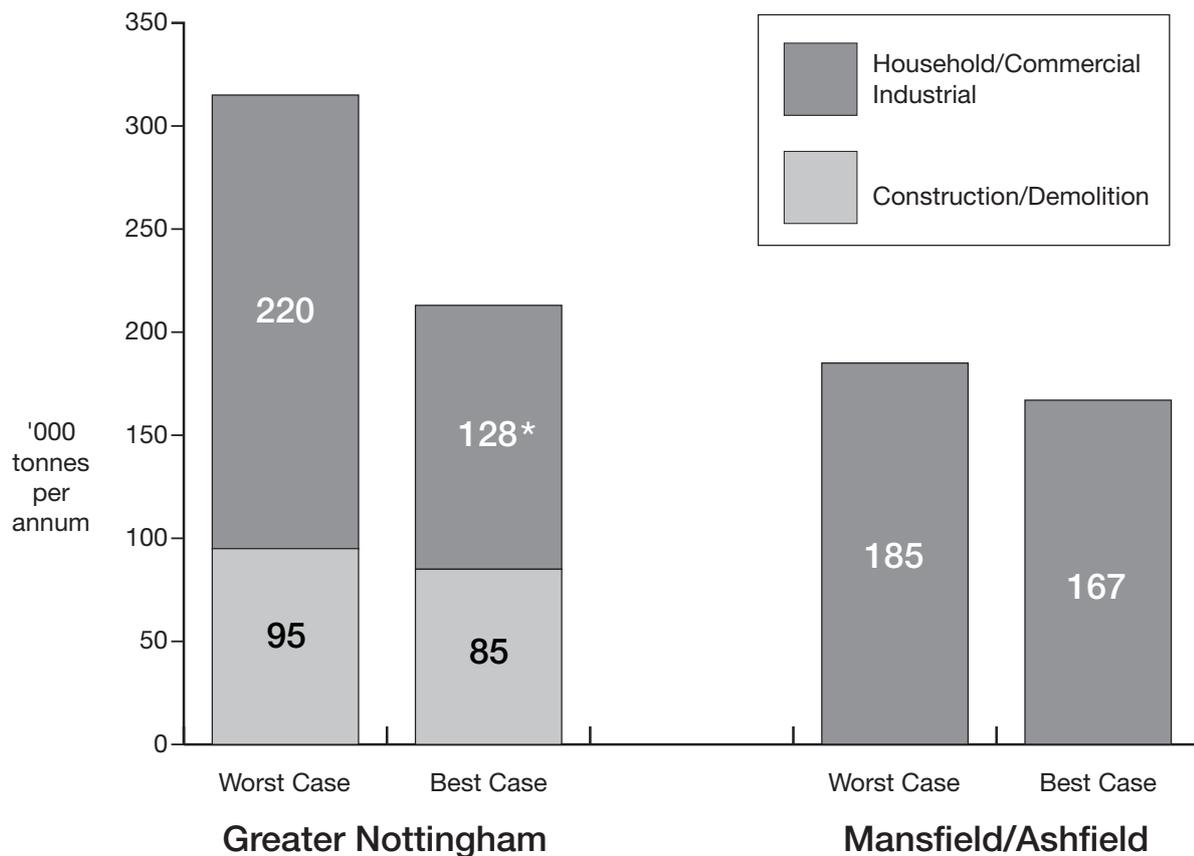
♦Tonnage comprises estimated portion arising from mansfield/Ashfield Area (See Fig. 10.2).

Note: All values rounded to nearest 5K.

TABLE 10.4 SUMMARY OF SHORTFALL IN DISPOSAL SPACE OVER THE PLAN PERIOD (based on 'Worst Case Scenario')		
HOUSEHOLD, COMMERCIAL & INDUSTRIAL WASTE		
AREA OF SHORTFALL	APPROXIMATE TIMESCALE SHORTFALL BEGINS	SHORTFALL CAPACITY (tonnes per annum) Values Rounded
GREATER NOTTINGHAM	2003	220,000*
MANSFIELD/ASHFIELD	2003 2007	10,000 185,000
CONSTRUCTION AND DEMOLITION WASTE		
GREATER NOTTINGHAM	2003	95,000

*This is a maximum value as some waste from Rushcliffe, which would have gone to Barnstone, could go to Staple Quarry or Fiskerton if no other closer options exist.

Figure 10.4 – Forecast Shortfalls – Best and Worst Case Scenarios



Note: Values shown are estimated shortfalls expected to arise by the end of the Plan period if no further tipping capacity is permitted. See Paragraphs 10.13 - 10.16 assumptions used.

*In addition to an overall reduction of waste input of 10% the Greater Nottingham 'best case' figure assumes Eastcroft Municipal Third Line comes on stream and reduces 100,000 tonnes waste to 30,000 tonnes of ash per year.

Shortfalls in the Longer Term

- 10.17 As indicated in Figures 10.2 and 10.3, three major disposal sites are anticipated to close around 2008/9 (based on the "worst case" scenario). Just how these and other shortfalls that may arise will be best resolved will be a major issue for the Waste Local Plan Review (see Para 1.26).

CRITERIA FOR PERMITTING WASTE DISPOSAL PROPOSALS

- 10.18 The above analysis indicates that there is a need to find suitable disposal sites to meet the shortfall as soon as possible. In order to conform to the Government's "proximity principle" (see Chapter 2, Para 2.22) sites must be as near as possible to the sources of waste. In addition, new disposal capacity must be directed towards areas where it has both the least environmental impact and the maximum opportunity to gain environmental improvements, for example by, reclaiming a worked out quarry. It is also important that potential disposal capacity is preserved for future generations and sites are not unnecessarily used up. Future proposals must therefore be able to demonstrate a recognised need.

Mineral Sites, Other Voids & Incomplete Colliery Spoil Heaps

- 10.19 In Nottinghamshire, opportunities to gain environmental improvements through waste disposal comprise the infilling of mineral and other voids such as disused railway cuttings, and the reclamation of incomplete colliery spoil tips. The lattermost situation has arisen due to the recent rapid contraction of the deepmine coal industry, which has caused the closure of fifteen collieries in the County since 1993. Many of these are now subject to recently agreed reclamation schemes to various after-uses. In considering such sites, the value of any nature conservation interest, which may have arisen due to natural regeneration or planned restoration, will need to be taken into account (see Policies in Chapter 3).

POLICY W10.1

PROPOSALS FOR THE RECLAMATION OF MINERAL OR OTHER VOIDS AND/OR INCOMPLETE COLLIERY SPOIL HEAPS THROUGH WASTE DISPOSAL WILL BE PERMITTED PROVIDED THEY:

- (a) ACHIEVE ENVIRONMENTAL BENEFITS AND,**
 - (b) MEET A RECOGNISED NEED FOR ADDITIONAL DISPOSAL CAPACITY AND,**
 - (c) DO NOT HAVE AN UNACCEPTABLE ENVIRONMENTAL IMPACT.**
-

Derelict or Degraded Land

- 10.20 There are very few if any significant derelict or degraded areas of land in Nottinghamshire which would be suitable for waste disposal. Appropriate

circumstances include the reclamation of derelict voids (the justification being as described in Para 10.6) and where contaminated soils need to be removed and the resulting voids replaced with suitable waste. There may also be situations where waste disposal is the only economically viable means for reclaiming derelict or degraded land. Notwithstanding the above exceptions, in most cases derelict and degraded land can be reclaimed without the need to import waste. In view of the general environmental disadvantages associated with land raising (see Para 10.7) waste disposal on derelict and degraded land is only acceptable where it represents the only viable option in environmental and economic terms.

POLICY W10.2

PROPOSALS FOR THE RECLAMATION OF DERELICT AND DEGRADED LAND THROUGH WASTE DISPOSAL WILL BE PERMITTED PROVIDED THEY:

- (a) ACHIEVE ENVIRONMENTAL BENEFITS;**
 - (b) REPRESENT THE BEST OPTION FOR RECLAIMING THE LAND;**
 - (c) MEET A RECOGNISED NEED FOR ADDITIONAL DISPOSAL CAPACITY; AND**
 - (d) DO NOT HAVE AN UNACCEPTABLE ENVIRONMENTAL IMPACT.**
-

Greenfield Sites

- 10.21 Waste disposal on greenfield sites is considered to be inappropriate for Nottinghamshire. No environmental benefits are achieved and due to the raising of ground levels and the creation of slopes, land can rarely be put back to its original quality and landscape character. This option falls at the very bottom of the Government's waste management hierarchy. As Nottinghamshire has enough potential disposal sites where environmental benefits could be achieved (see below), disposal on greenfield land is not considered necessary or acceptable. It is, however, possible that schemes involving the reclamation of voids or derelict land may, by necessity, include incidental areas of greenfield land in order to achieve the optimum reclamation scheme. Such schemes would by virtue of their nature be primarily assessed against Policies W10.1 and W10.2, rather than W10.3.

POLICY W10.3

PROPOSALS FOR WASTE DISPOSAL ON GREENFIELD SITES WILL NOT BE PERMITTED, EXCEPT WHERE INCIDENTAL AREAS OF GREENFIELD LAND ARE REQUIRED TO BE INCLUDED SO AS TO ACHIEVE AN OPTIMUM RECLAMATION SCHEME.

POTENTIAL OPTIONS FOR MEETING SHORTFALLS

- 10.22 Waste disposal sites require long lead times, from identification of suitable sites, gaining ownership and other legal rights, to finally acquiring planning permission and site licences. It is important therefore that suitable sites which meet the requirements of the shortfall areas (see Plan 10.2) are identified as soon as possible. Potential sites are indicated in Plan 10.3.
- 10.23 **Important Note:** In order to assess the most suitable options, all known existing and foreseeable voids with potential to serve the shortfall areas have been assessed in terms of their suitability for waste disposal. For each existing and potential option, brief summaries of the main features and constraints are provided. Where a suitable option has been identified, and there is sufficient certainty as to its availability, it has been allocated. Should other existing or future sites come forward, these would be tested against Policies W10.1 and W10.2. Finally, the implications of not permitting sites within the shortfall areas are discussed.
- 10.24 The planning position for potential sites discussed below is accurate as at October 2000 (when the Schedule of Proposed Modifications was published). Subsequent changes, such as the granting of new planning permissions, are not taken into account. Where such changes have Plan implications, they will be treated as "material considerations" in reaching any subsequent planning decision.

(A) EXISTING MINERAL VOIDS AS POTENTIAL DISPOSAL SITES

- 10.25 The sites in this category comprise all existing mineral voids located in the shortfall areas. They either have infilling conditions which have not been complied with, or have poor or non-existent reclamation conditions. Voids which are already subject to infilling schemes or have alternative satisfactory reclamation schemes, are not considered as potential options.

Gunthorpe

- 10.26 A series of lagoons, some part filled, some partly reclaimed or naturalised, exist within this sand and gravel quarry, which closed in 1979. Although infilling conditions exist over much of this quarry, these have not generally been complied with. This is due to a lack of suitable fill and old, weak planning conditions. Whilst there remains a need to secure a proper reclamation scheme for this quarry, much will depend on any future proposals to open up adjacent land allocated in the Minerals Local Plan (see Paras 10.30-32 for reclamation options).

Bestwood No 1

- 10.27 Production at this large sand quarry ceased in 1981 due to a rationalisation of other sites owned by Tarmac Roadstone. A significant part of the quarry is subject to an infilling scheme, which was completed in July 1995. Part of the quarry was excluded in order to conserve the remaining permitted sand reserves which may be recovered in the future. Waste is restricted to construction and demolition categories due to the proximity of the Sherwood Sandstone aquifer.

- 10.28 In 1995, the waste operator, Biffa, submitted a planning application to fill the remainder of the quarry. This included extraction of some of the sand reserves for a period of 4 years. Whilst, this proposal represented a satisfactory reclamation solution, permission was refused in July 1995, primarily due to access problems. Any future proposals are likely to depend on the ability to create an alternative access. If such a scheme was permitted it would help resolve some of the future shortfalls in construction and demolition waste capacity in the Greater Nottingham area.

(B) FUTURE MINERAL VOIDS AS POTENTIAL DISPOSAL SITES

- 10.29 The situations described below, are potential voids which might be created during the Plan period. There is of course no certainty that such voids will come into existence, and timescales and suitability for waste disposal must be considered speculative. Therefore, such sites cannot be allocated, but should proposals come forward they would be tested against Policy W10.1.

Gunthorpe (Minerals Local Plan Allocation)

- 10.30 The Minerals Local Plan allocates 80 hectares of land at Gunthorpe to serve as a replacement to Holme Pierrepont. The timescales are uncertain, although reserves at Holme Pierrepont may become exhausted before the end of the Waste Local Plan period. The land is owned by Severn Trent plc, and forms part of the Stoke Bardolph sewage sludge disposal area.
- 10.31 Any proposal to open up a new quarry will need to include a comprehensive reclamation scheme for both the allocated area and the existing workings (see Para 10.26). As noted in the Minerals Local Plan, in principle, a water recreational after-use may be acceptable which will not require any importation of fill. Much will depend on Severn Trent's land requirements for sludge disposal which might require at least part of the site to be backfilled.
- 10.32 Infilling options would most likely be restricted to construction and demolition wastes, due to the need to protect the River Trent from pollution. Gunthorpe's role may therefore be limited to meeting future shortfalls of this category of waste in the Greater Nottingham area.

New Sand Quarries

- 10.33 The main Sherwood Sandstone outcrop extends in a broad belt from Nottingham, northwards towards Sherwood Forest. A number of large sand quarries exist, some of which (as noted above) have been subject to infilling schemes. The Sherwood Sandstone is a major aquifer and this factor is likely to restrict the range of wastes which can be disposed of in these voids. The main consideration is Burntstump Quarry which is substantially worked out and extraction and infilling with waste is expected to be completed by 2003. As considered in the Minerals Local Plan (Chapter 7) there is an excess of permitted reserves and production capacity of Sherwood Sandstone in the County. This means that in the short to medium term the need for a replacement sand quarry is in doubt. Nevertheless, if a new sand quarry was approved it may represent one of the few options for creating substantial new void capacity in the Greater Nottingham area, within the timescales required.

PLAN 10.3 -

Potential Void Capacity in Nottinghamshire



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FOR KEY SEE OVER

KEY TO PLAN 10.3

Potential Void Capacity in Nottinghamshire

- - - - Limit of Shortfall Area

● Existing Potential Mineral Voids
(current reclamation options uncertain)

■ Allocated Site in Minerals Local Plan

▲ Unreclaimed Colliery Spoil Heap

□ Opencast Coal Resource Area
– where potential future voids might arise

■ Sherwood Sandstone Resource (within shortfall area)
– where potential future voids might arise

Scale: 1:312,500 (1" to 5 miles) 1cm = 3.125km

- 10.34 In 1999 a planning application to extend the quarry and backfill with household, commercial and industrial waste was submitted. The proposal was to extract 1.7 million tonnes of sand and to backfill with 1.9 million cubic metres of waste. This followed a similar proposal, submitted in 1990 which was subsequently withdrawn, a principal concern being the possible impact on the aquifer. The Environment Agency is of the view that, whilst a pollution risk is not proven, disposal of non-inert wastes in sites where major aquifers are not at a risk must be favoured where available. In August 2000 the mineral operator made public its intention to pursue an alternative sand only extraction scheme which would reclaim the site to a low level.

New Opencast Coal Sites

- 10.35 The exposed coalfield, which exists in the west of the County between Trowell and Teversal has been worked extensively for opencast coal and further proposals are likely. The Measures predominantly comprise clays and shales with some sandstone bands. These are classified as a minor aquifer by the Environment Agency and, subject to individual site assessments, may be suitable for receiving a wide range of waste. Whilst opencast coal sites can normally be worked and reclaimed without the need to backfill, it may be possible to engineer schemes to create a void. (A recent example included Coronation Road Site at Cossall.) This may be desirable if it results in a better landform, and there are no other environmental concerns as a result of importing waste. Such concerns are likely to include extra traffic and prolonging the overall disturbance.
- 10.36 Further requirements for opencast coal are set out in Chapter 12 of the Minerals Local Plan. No sites are allocated, but the Plan recognises that opencast coal proposals may be permitted, subject to various criteria being met. Schemes in the south of the resource may be able to help meet shortfalls in all categories of waste identified in the Greater Nottingham area. Those in the north of the resource may be better placed to meet shortfalls in household, industrial and commercial waste in the Mansfield area.
- 10.37 Whilst opencast coal extraction may provide suitable waste disposal options such opportunities must be considered very uncertain and speculative at the present time.

(C) UNRECLAIMED COLLIERY TIPS (DUE TO MINE CLOSURES)

- 10.38 The recent major contraction of the coal mining industry has resulted in many colliery tipping areas being closed prematurely. Further pit closures cannot be ruled out. At most closed tips alternative reclamation schemes have been agreed with the County Council which do not involve the importation of waste. Within the shortfall areas there remain two tips where void capacity, above that required for tipping, exists or may exist in the future. These are considered below.

Bentinck Void and Colliery Tip

Planning Background

- 10.39 Annesley-Bentinck Colliery closed in January 2000, leaving behind over 85 hectares of derelict colliery tip. The final tipping levels fall well short of the contours contained in the reclamation scheme approved in 1986 to allow for colliery spoil disposal. This scheme included both the active tip and a large 50 hectare southern extension which was never implemented. The latter was also subject to opencast coal extraction which took place in the late 1980's, the aim being to recover the coal before it was lost to tipping. After the coal was extracted the southern extension was sold off by the Coal Authority to a waste disposal company, as it was no longer needed for colliery spoil disposal. The opencasted area was left in a largely derelict and degraded state and became known as the 'Bentinck Void'. Both areas occupy the northern part of the Cuttail Brook Valley which lies within the Green Belt.
- 10.40 The 1986 planning permission to tip colliery spoil contains a condition requiring an alternative reclamation scheme to be implemented in the event of the colliery closing or tipping ceasing prematurely, as proved to be the case. However, recent legal test cases suggest that this condition may not be enforceable if challenged. Even if enforcement was successful, it is very doubtful that it could provide a satisfactory reclamation solution. The reasons for this and a proposed alternative solution involving a major landfill scheme are set out below.
- 10.41 In 1997 and 1998 two planning applications were submitted by separate companies to landfill the Void and colliery tip respectively with household, commercial and industrial waste. The Void proposal gave a landfill capacity of 5.5 million cubic metres to be filled at approximately 500,000 cubic metres per annum. The colliery tip proposal had a disposal capacity of 4.7 million cubic metres to be filled at an annual rate of 300,000 cubic metres. Each scheme has the potential to meet in full the anticipated shortfalls in waste disposal capacity for both the Greater Nottingham and Mansfield /Ashfield areas.
- 10.42 In May 2000 the colliery tip landfill proposal was refused planning permission principally because of its unacceptable visual and traffic impact. The Bentinck Void proposal has not yet been determined.

Planning issues and options - Bentinck Void

- 10.43 The Bentinck Void site has left part of the Cuttail Valley as a wide steep sided bowl, extending well below the original course of the Cuttail Brook. The site includes a large body of deep water created when the adjacent bank of the diverted Cuttail Brook failed. The disturbed valley sides have suffered from instability and landslipping. The site has, however, naturally regenerated to varying degrees and some parts, especially east of the Cuttail Brook, have developed a nature conservation interest sufficient to meet the criteria of a

SINC¹ (see paragraph 3.76). Protected species are also present. The land has no agricultural value or public access and remains in a very degraded condition. Large stockpiles of soil and overburden have been left mainly along the southern boundary.

10.44 For the Bentinck Void, importing waste to recreate a valley profile and landscape character is considered to be the most appropriate, if not the only viable, option for reclaiming this site. A landfill scheme would enable the site to be reclaimed to a landform and character compatible with the undisturbed valley to the south. It would also allow the land to go back to a beneficial use appropriate to its green belt status ie. agriculture, nature conservation and public recreation.

10.45 The relatively contained nature of this site and underlying geology means that the disposal of construction and demolition, household, commercial and industrial waste should be environmentally acceptable, providing the following main planning considerations are taken into account:

- (a) a new purpose built access is required which avoids the use of Salmon Lane for HGV traffic and allows direct access onto the main highway network;
- (b) measures are taken to minimise the visual impact on the nearest isolated properties, and the more distant views from Kirkby Woodhouse;
- (c) surface water resources are protected;
- (d) the two adjacent SSSI's ie. Bogs Farm and Annesley Woodhouse Quarries are protected;
- (e) protected species and their habitats are conserved or translocated;
- (f) areas of other significant wildlife habitat are retained where feasible and steps are taken to mitigate those which cannot be retained, for example by translocation;
- (g) measures are taken to safeguard the viability of the Mushroom Farm;
- (h) The stability of buried or surface slurry lagoons must not be compromised.

Planning issues and options - Bentinck Tip

10.46 The reclamation of the tip site presents entirely different environmental issues and options to the Void. Whereas the Void has widened and deepened the Cuttail Valley, the tip has obliterated it and transformed it into a very exposed

¹ The SINC Panel met in July 2000 and determined that Bentinck Void was of sufficient interest to qualify as a Site of Nature Conservation Importance. Formal designation through the planning system is dependent upon the site's inclusion in the Ashfield District Local Plan.

plateau, visible over a wide area. The Cuttail Brook now flows under the tip via a culvert. Unlike the void, recreating the original landscape character is not a feasible option.

- 10.47 The plateau comprises a series of partly filled slurry lagoons which need to dry out before being capped with suitable materials and reclaimed. A major obstacle to achieving even the most basic standard of reclamation is the absence of soils. This is because nearly all of the stripped soils were stored to the south in the Void site, which is now in separate land ownership. It is estimated that approximately 0.5 - 1 million cubic metres of soils and other suitable reclamation materials are required to cap the lagoons, provide a reasonable landform with adequate gradients for drainage and to achieve a viable plant growth.
- 10.48 A major environmental constraint to importing this amount of reclamation material is HGV traffic. This is because the routes leading to the tip access comprise narrow winding roads that pass through residential areas.
- 10.49 A further problem is that there are serious doubts that such a scheme would be commercially feasible. Developing the tip as a major household, commercial and industrial waste scheme would overcome the latter obstacle, but it would only exacerbate the access problems and result in a highly visible operation causing severe problems of visual intrusion. There would also be no need for the extra capacity, assuming the Void landfill option was allowed to proceed. A major commercial landfill scheme on the tip is not therefore considered to be environmentally acceptable.
- 10.50 As a stand alone scheme there appears to be no feasible option for reclaiming the tip due to severe environmental and economic constraints.

A Comprehensive Reclamation Scheme

- 10.51 The above assessment indicates that treating the two sites separately cannot promote the best reclamation solution. Only the Void site is likely to be reclaimed, the benefits of which will inevitably be marred by the continued presence of the adjacent derelict colliery tip. If, however, the two sites are considered as one comprehensive reclamation scheme then the environmental and economic constraints preventing the reclamation of the tip could be overcome. This is for three main reasons. First, the Tip can use the same new access required for the Void site. Secondly, the main landfill scheme in the Void should provide the necessary finances to reclaim the tip. Finally, a significant environmental and cost benefit is that a joint scheme would enable soils from the tip, now stored in the Void site, to be returned to the tip so reducing the amount of soil which needs to be imported.
- 10.52 A comprehensive scheme will depend on the relevant landowners agreeing to co-operate. Whilst this cannot be guaranteed, the environmental benefits of this approach over any other, are such that it is in the public interest that it is promoted to encourage the necessary co-operation.

- 10.53 Guidance on the most appropriate landform, and the quantities of waste needed to achieve it, is set out in a concept scheme prepared by independent consultants appointed by the County Council². The concept landform focuses landfilling within the Void west of the Cuttail Brook and recreates a valley profile compatible with the surrounding area. The eastern slopes, where most of the nature conservation interest exists, are left largely intact. For the Tip a shallow dome is proposed which would be achieved by capping the lagoons with inert granular waste and grading them into a coherent shape. The total amount of waste that needs to be imported is estimated at 4 million cubic metres for the Void and between 0.5 - 1 million cubic metres for the Tip. The latter range reflects different assumptions on the thickness of capping needed to reclaim the slurry lagoons
- 10.54 Whilst at the planning application stage proposals may vary in detail from this concept scheme, it is essential that proposals are based on the following principles:
- (a) The main household, commercial and industrial waste landfill scheme must be limited to the Void site.
 - (c) At the Tip site, reclamation should be the main priority. Imported materials must be limited to what is essential to reclaim the Tip, i.e. soils, overburden and other inert waste.
 - (d) The reclamation of the Void and Tip sites should be phased so as to keep the overall reclamation timescale to a minimum. Where practical reclamation of the land outside the landfill area should be completed as a priority in order to maximise environmental benefits.
 - (e) The reclamation scheme should lead to the landscape enhancement of the area and the surrounding countryside, and maximise the opportunities to gain environmental improvements. Particular regard should be given to creating wildlife habitats, both in terms of adding to the existing interest and providing linkages with the two adjacent SSSIs.
- 10.55 The individual planning and environmental issues raised earlier with respect to the Void and Tip sites must also be taken into account.
- 10.56 The boundary of the land which needs to be included in the comprehensive reclamation scheme is indicated on the Proposals Map (Inset Plan 13). The inset map also indicates which part of this site is allocated for the major landfill scheme.

² Bowman Planton Associates 'A Concept Restoration Scheme for Bentinck Tip and Void, Kirkby in Ashfield, Nottinghamshire' August 2000.

POLICY W10.4

PROPOSALS TO DISPOSE OF CONSTRUCTION, DEMOLITION, HOUSEHOLD, COMMERCIAL AND INDUSTRIAL WASTE WITHIN LAND ALLOCATED AT THE FORMER BENTINCK VOID WILL BE PERMITTED PROVIDING THE PROPOSALS SECURE THE COMPREHENSIVE RECLAMATION OF THE ADJACENT COLLIERY TIPPING SITE AND OTHER LAND WITHIN THE VOID WHICH FALLS OUTSIDE THE AREA TO BE LANDFILLED. IMPORTED MATERIALS NEEDED TO RECLAIM THE COLLIERY TIPPING SITE MUST BE LIMITED TO INERT WASTE.

Calverton Colliery

- 10.57 Calverton Colliery closed in July 1999, leaving behind two partly filled slurry lagoons. Since then the Coal Authority has been assessing an alternative reclamation scheme in accordance with the planning conditions. The indications to date are that this will be achievable by using on-site spoil and soils. If, however, additional materials are needed to cap the lagoons then these are likely to be limited to inert granular material for engineering reasons. The proximity of the Sherwood Sandstone aquifer which underlies the tip may also be a further limiting factor on the types of waste that could be imported to reclaim this site.

(D) REMOTE DISPOSAL

- 10.58 If sites from the above options do not come forward, it may be necessary to transport waste over a much longer distance to more geologically suitable locations. This practice is already well established in the south of the country, where much of Greater London's waste is transported to remote sites in the surrounding counties, in particular clay pits in Bedfordshire. However, this practice conflicts with the Government's 'proximity principle'.
- 10.59 Within Nottinghamshire, potential options include clay and gypsum workings in the Newark area, and the Daneshill site in Bassetlaw, where there is currently an excess of capacity during the Plan period. Within Mansfield there may be some potential for waste to go to the permitted but uncommenced site at Rufford Colliery (see Table 10.1). This option would disadvantage the site's preferred role which is to meet more local shortfalls when Bilsthorpe closes in 2003. Suitable geological options may also exist outside the County, with Leicestershire and south-east Derbyshire being relatively accessible to Greater Nottingham.
- 10.60 Clearly, all remote disposal options, whether within or outside the County, are very unsuitable both in terms of the environment and economic costs of long distance transportation, unless rail or barge transport is available. Furthermore, any major increase in waste disposal to remote areas may only bring forward the date when these areas require new capacity.

CONCLUSIONS

- 10.61 In conclusion, Nottinghamshire will need to find significant volumes of additional waste capacity to meet predicted shortfalls of household, commercial, industrial, construction and demolition waste, well before the end of the Plan period. This is regardless of the success and impact of more sustainable options such as recycling and incineration.
- 10.62 The potential for meeting the identified shortfalls in capacity is likely to depend on the allocated site coming forward and gaining planning permission. If this allocation is unsuccessful and none of the other local potential options provide suitable alternative sites, remote options, either within or outside the County, may have to be considered.
- 10.63 The situation in Nottinghamshire is reflected in many other parts of the UK and this highlights the importance of achieving a more sustainable system of waste management as endorsed in Waste Strategy 2000 and PPG 10 (as set out in Chapter 2). However, it is likely that, for the foreseeable future, disposal will form an essential and important part of any sustainable management strategy at least for some waste streams. In the longer term, and beyond the Plan period, there is little to suggest that waste disposal sites will become easier to find, and indeed they are likely to become more difficult. It seems inevitable, that unless current practices are radically changed, waste disposal will become an increasingly less acceptable and more costly management option.

