Nottinghamshire & Nottingham Waste Core Strategy & Development Control Policies

Background Paper 3: Recycling

Nottinghamshire County Council

Nottingham City Council

Revised 15.11.06

1. Introduction

1.1 Nottinghamshire County Council and Nottingham City Council are preparing a new set of waste planning policies for Nottinghamshire. These will replace the existing waste local plan and will be part of both councils' new local development frameworks. The new waste policies will be set out in three separate documents. The first of these, the waste core strategy and the development control policies are being prepared together and will set out future requirements, suitable location criteria and appropriate environmental controls. A site-specific document will follow.

1.2 As part of preparing these new planning policies for waste, the County Council and City Council have produced a series of background papers to provide more detail on the 'Issues and Options consultation exercise (see below).

Purpose of this Background Paper

1.3 This background paper looks at recycling. Other papers look at different waste management methods including composting, incineration, landfill and the possible use of new technologies. Each paper sets out the number, location and capacity of current facilities, likely future needs, and the main planning issues in terms of site location and environmental controls. The general policies and principles of waste management are set out in Background Paper 1 and Background Paper 2 provides a basic assessment of how much waste is produced in Nottinghamshire, how it is managed and possible future trends.

Further information

1.4 For further information, copies of other background papers or to join in the Issues and Options consultation please contact the Minerals and Waste Policy Team at the County Council or the City Development Team at Nottingham City Council. Details are shown on the back cover.

Please note that, unless stated otherwise, all references to Nottinghamshire within this paper include the City of Nottingham.

2. The Process, Site Requirements and Environmental Impacts

Why Recycle?

2.1 Recycling reduces the amount of waste that has to be disposed of and helps to conserve natural resources. It is often the most sustainable option for managing waste that cannot be re-used.

2.2 Historically, recycling efforts have been hampered by the cost of collecting and sorting the waste and the difficulty in finding secure end markets for the recycled products. Often landfill has been the cheapest and easiest solution but the balance is now changing as taxes and tighter environmental controls are making landfill more expensive. The Government has also set strict recycling targets for municipal waste in order to meet international obligations and reduce our traditional reliance on landfill (see Background Paper 1). These targets can be met through either recycling or composting but it is expected that the majority will need to come from recycling. Targets for other wastes are likely to follow.

2.3 Existing recycling provision will therefore need to increase significantly if these future targets are to be met. A key issue for the Core Strategy will be to estimate how much additional waste needs to be recycled, the number and type of additional facilities needed and the types of site that are likely to be suitable.

What is recycling?

2.4 Recycling means the reprocessing of waste materials into another or similar product. For example, most metals can be melted down and re-used. Plastic waste can be melted down, but often to a lower grade product which may be less easy or economic to recycle. Glass bottles can be melted down to make new bottles, or crushed for use as aggregate or garden decoration. Composting is also a form of recycling as organic waste (e.g. garden waste) can be turned into a soil improver. However this raises different planing issues and is therefore considered separately (see Background Paper 4.)

2.5 The actual physical process of recycling usually involves non-waste facilities such as paper mills or bottle-making plants. These generally fall outside the scope of specific waste planning policies. The facilities described here are therefore those sites where waste materials are collected for recycling. They are referred to as ‘recycling’ sites for convenience. The only exception to this is aggregate recycling where the material can be crushed and screened on site without further treatment.

2.6 Not all waste is suitable for recycling. At present it is possible to recycle materials such as paper, card, plastic, glass, textiles, timber and metal. There are also specialist schemes to recycle items such as batteries, oil and old tyres. Technology will play a major part in whether or not certain materials can be recycled but it will also depend on whether there is a market for the end product. If it is too expensive or not of a high enough quality then there may be little interest in recycling that material. Where a material is scarce or high value, such as aluminium or copper, there may be more commercial incentive to recycle.

Panel 1: Types of recycling site

Mini Recycling Banks - small local facilities, often close to shops, libraries or leisure centres, where people can take glass, paper, card and sometimes tins, plastic and textiles for recycling. These do not always require planning permission.

Household Waste Recycling Centres (HWRCs) - sites where householders can bring a wider range of waste (e.g. timber, metal, garden waste, unwanted electrical items and old furniture) to be sorted and recycled. Usually open-air, and waste is usually brought by car and then sorted into bulk containers or skips for transfer and recycling or composting. Waste that cannot be recycled or composted is sent to landfill.

Materials Recovery Facilities (MRFs) - larger facilities where bulk collections of waste can be brought for separation and recovery. These are usually enclosed within an industrial type building. Clean MRFs take only clean, dry recyclables from separate kerbside collections. So-called 'dirty' MRFs take mixed unsorted waste and use magnetic separators, air blowers, optical recognition equipment and hand-picking to separate out recyclable materials. MRFs can be stand alone or linked to other facilities such as an incinerator or landfill site to increase the recovery of recyclable materials from those sites.

Aggregates/Soils Recycling - most rubble, hardcore and soils from construction can either be reused on-site or crushed and graded for other uses. There may also temporary facilities linked to landfill sites where incoming material can be recovered for re-sale or on-site engineering uses. Permanent sites tend to be more central e.g. on industrial estates and often form part of a Materials Recycling Facility. They are usually open-air.

Metal Recycling - scrap yards for dismantling old cars are the most common example but new European requirements to de-pollute end of life vehicles could see more specialist sites developed in future. Household Waste Recycling Centres and Waste Transfer Stations may also collect metals such as aluminium and copper for re-processing. Sites are often open-air but there may be more need to enclose operations in future.

Resource Recovery Parks - modelled on business parks these provide an opportunity to concentrate waste producers, research and technology, and re-processing facilities at one location. Manufacturing businesses could co-operate and benefit from exchanging wastes, which may be useful raw materials for other firms.

Site Requirements

2.7 The physical size and layout of a site will vary greatly depending on whether it is a small local collection point or a large centralised facility that receives and separates a wide range of wastes. All sites will generally require suitable vehicular access and a hard surface but the type of building (if any) and the equipment used will be dictated by the volume and type of waste.

2.8 Household Waste Recycling Centres, for example, tend to be open air whereas Materials Recovery Facilities are normally enclosed to prevent litter, dust, odour and noise. The following elements will not therefore be required at every site but illustrate the main components:

- Access (vehicle/pedestrian)
- Weighbridge
- Hard surfacing
- Site drainage system
- Building(s)
- Crushing equipment
- Screening equipment
- Storage area(s)
- Skips/containers
- Conveyor/picking area
- Mechanical/optical/ magnetic separators
- Compactor/baler
- Maintenance area
- Fuel storage
- Loading vehicles
- Picking vehicles/grabs
- Forklift

Environmental Impacts

2.9 The potential environmental impacts of a development will vary according to where it is located, its size, and the type of operation being carried out. For example a small bottle bank at a busy supermarket may have very little impact whereas a large new recycling building could have a major impact in a rural area where it is unlikely to fit in with the surrounding landscape and would generate large amounts of HGV traffic. The main impacts considered here are those caused by the operation itself e.g. noise, dust and traffic. There are other important concerns such as the impact on wildlife, habitats and heritage but these are issues relating to the choice of site rather than the impact of a particular type of facility. These issues will therefore be covered under specific development control policies and are addressed as part of the ongoing sustainability appraisal of each of the plan documents.

2.10 Panel 2 overleaf is therefore intended to illustrate the possible impacts that waste development may have on those living or working nearby. It summarises the typical issues that need to be considered but does not mean that they will apply in every case:

2.11 The key issue is whether these impacts are acceptable i.e. is there a risk of harm or disturbance? In many cases, environmental impacts can be minimised through careful site design and layout but there may be times where the potential impacts of a development mean that it should not be permitted at a particular location.

Panel 2: Environmental Impacts

Visual Impact – for smaller, open-air sites, the main visual impacts will be from skips, containers, storage areas, Portakabins, security fencing, lighting, and any mobile plant used to move and separate the waste. At larger sites, storage and sorting operations are likely to be enclosed within a large, industrial type building. Careful site design, colour treatment of buildings and screening and landscaping measures can help to minimise visual intrusion.

Noise – the tipping, sorting and onward shipment of waste can generate significant vehicle noise as can any mechanical sorting, compaction, crushing and screening operations. Avoiding proximity to residential areas or other noise sensitive properties, enclosing these operations within a building, fitting vehicle/plant silencers and smart reversing alarms, acoustic screening, setting maximum noise limits and controlling working hours can keep noise within acceptable limits.

Odour – clean, dry waste such as paper, plastic and cardboard should not present any odour risk. Only items contaminated with food waste or decomposing green waste are likely to create odour problems. This is most likely to affect the so-called 'dirty' MRFs. Odour risks can be minimized by ensuring that waste is not stored on site for more than 24 hours and that it is covered or enclosed in a building. Negative air pressure systems can be used in very sensitive areas but these are only likely to be cost effective at very large sites.

Litter – can be a problem especially with light weight paper card and plastics. Problems are normally avoided through careful storage and/or enclosure within a building. Fly tipping and litter can be a nuisance at mini recycling banks if they are not emptied regularly. Good operational management is therefore needed.

Traffic – vehicle traffic is not normally an issue for mini-recycling sites but Household Waste Recycling Centres can generate high volumes of traffic, especially at weekends. Sites need good road access, and adequate space to avoid congestion and queuing both within the site and on approach roads. Materials Recovery Facilities are more likely to generate HGV traffic. Controls over access routes (routeing agreements), vehicle numbers and the hours of operation can help to keep impacts to acceptable levels.

Flies/Vermin/Birds – are only likely to be a problem if mixed waste is left uncovered. Most sites handling this type of waste will be covered or within a building but waste should not be stored for more than 24 hours on site as an additional precaution.

Water – clean dry recyclables should not pose any risk but all sites will need appropriate drainage for surface water run off. Sites which take mixed or 'dirty' wastes will require a separate drainage system. Particularly sensitive water resource areas should be avoided if there is considered to be any significant risk.

What types of site are suitable?

2.12 The different sizes, operations and impacts of the various types of recycling facility mean that not all sites will be suitable for every operation. In some cases very small-scale sites can be located close to residential areas where they are needed most. In other cases, the large volumes of traffic and heavy equipment needed may mean that facilities are better suited to industrial locations.

2.13 **Mini-recycling banks** should be local (within walking distance) and easily accessible. They are often located at places people already visit such as supermarkets and local shopping centres. Although physically quite small, there is potential for noise disturbance and litter. Sites therefore need to be relatively self-contained, far enough away from housing to avoid noise nuisance and accessible to the vehicles which collect and empty the containers. National policy in Planning Policy Statement 10 (PPS10) and the emerging Regional Waste Strategy seek to encourage the provision of recycling facilities within or alongside new community and residential development.

2.14 **Household Waste Recycling Centres** again need to be close to the areas they serve with good vehicle access to prevent traffic nuisance. Sites on the outskirts of urban areas/major residential areas can provide suitable access whilst minimising local disturbance. As sites are busiest at the weekend, care should be taken to design and locate sites so that they do not impact on any nearby residences.

2.15 **Materials Recovery Facilities (MRFs)** need good HGV access and should be sited away from uses which are sensitive to noise and traffic. Their typically industrial appearance makes them well suited to existing or proposed industrial/commercial areas. Areas of degraded, previously contaminated or derelict land may also be suitable. Some sites may be able to take advantage of rail or water links if available. It can also be beneficial to locate MRFs alongside other waste facilities e.g. at an incinerator to remove recyclables prior to combustion, or at existing waste transfer facilities to increase the amount of recyclable material recovered. Greenfield or Green Belt locations are not normally suitable unless on previously developed land or facilities are provided on a temporary basis as part of other essential development.

2.16 **Aggregates recycling facilities** – permanent stand-alone sites will need good vehicle access and should be located away from uses sensitive to noise and dust. It is not economic to transport construction waste very far and sites should generally be close to the main urban areas. This usually favours industrial locations. Existing quarries and landfill sites may also be appropriate for temporary sites linked to the life of the quarry or landfill. The use of mobile plant to crush and screen secondary aggregate at construction and demolition sites does not normally require separate planning permission.

2.17 **Scrapyards** are often open air but more facilities may need to be enclosed in future to prevent noise, dust and pollution concerns. Stockpiles of cars and parts can also have a significant visual impact. Whilst they may not be as intensively used by HGVs as other types of facility, they will still need good road access. For these reasons sites should be away from housing or other sensitive uses and tend to be well suited to existing or proposed industrial areas.

2.18 **New specialist facilities** to manage waste electrical equipment and fridges, for example, should not raise any additional planning issues. They are likely to be similar to Materials Recycling Facilities both in appearance and site requirements. There may also be scope to locate these facilities within business parks or 'resource recovery parks' (see below).

2.19 **Resource recovery parks** – these are a new concept to designed to encourage recycling businesses, re-processors and manufacturers to locate together to take advantage of possible waste exchanges and research and development opportunities. They are intended to promote the use of waste as a resource and move away from the traditional 'dirty' image of waste. As these are likely to involve several businesses at one location they are likely to need a very large site with good road access. The more specialise role of these sites suggests they would need a strategic location – potentially within existing or proposed business parks or larger industrial estates.

3. Current Position and Future Needs

What is the current situation?

3.1 The Regional Waste Strategy has set out estimates of future recycling/composting needs for each of the major waste streams. Table 1 below shows these estimates compared to current recycling/ composting rates.

Table 1: Indicative recycling/composting requirements for Nottinghamshire (tonnes / year)

	Municipal	Commercial & Industrial	Construction & Demolition
2005	155,000*	590,000**	1,171,000**
2010	213,000	550,000	1,280,000
2015	386,000	546,000	1,346,000
2020	386,000	532,000	1,346,000

* excludes 20,000 tonnes of inert material that cannot be counted towards targets
** based on 2003 estimates (see Background Paper 2)

3.2 Table 1 shows that recycling and composting of municipal waste will have to more than double over the next 10 years. Current recycling rates for commercial and industrial waste are based on a regional estimate and may not give a true picture for Nottinghamshire. Assuming these figures are accurate then Nottinghamshire is already meeting future targets but this does not allow for any unexpected waste growth or more stringent recycling targets for commercial and industrial waste. Similarly, the estimate of current recycling rates for construction and demolition waste is close to the level sought by the Regional Waste Strategy. [1] However, this only maintains the current pattern and there may be scope to further reduce the landfill of construction wastes by increasing recycling rates beyond those assumed here.

3.3 These figures are only a minimum estimate – if waste growth is more than expected then more facilities will be needed to keep landfill in line with targets. The remainder of this background paper looks at each of the above waste streams in more detail and assesses the implications for meeting future requirements.

[1] Data on local waste arisings and recycling rates for construction and demolition waste in particular is very speculative and should be treated with caution (see Background Paper 2).

a) Municipal Waste

3.4 Recycling and composting of municipal waste in Nottinghamshire has more than doubled over the last 4 years and now stands at just over 150,000 tonnes or around 25%. This is mainly in response to increasingly strict Government targets which require 33% of municipal waste to be recycled or composted by 2015 (see Background Paper 1). The Regional Waste Strategy is more ambitious and sets a 50% target by the same date.

3.5 To achieve the regional target, recycling and composting in Nottinghamshire will have to more than double again to roughly 390,000 tonnes per annum. Details are shown in Table 2 below. This also assumes very moderate waste growth. If waste arisings continue to grow at current levels then recycling and composting may have to be much higher to meet the regional targets.

Table 2: Estimated Recycling/Compost rates for Municipal Waste in Nottinghamshire compared to current level (tonnes / year)*

Year	Recycle	Compost	Total
2005	95,000	55,000	155,000
2015	236,000	150,000	386,000
Balance	**141,000**	**95,000**	**231,000**

* N.B. these figures are only indicative to illustrate how targets could be met

3.6 In practice the targets can be met by either recycling or composting and the exact levels are likely to depend on how much waste can realistically be composted. As explained in Background Paper 4, this is estimated to be around 150,000 per annum – leaving the remaining 236,000 tonnes to be met through recycling. This would mean an annual recycling rate at least 140,000 tonnes above current levels (see Table 2, Appendix 1).

3.7 The key issue for the Waste Core Strategy is to decide how this extra recycling capacity can be provided and, in very broad terms, where it should be located. In order to look at possible options, the following paragraphs assess current recycling practices and facilities and consider what scope these might have to help meet future targets.

Options to meet future municipal recycling needs

3.8 In 2004/05, almost 100,000[2] tonnes of municipal waste was recycled through mini-recycling banks, household waste recycling centres and kerbside collections (see Appendix 1). If the indicative recycling target of 236,000 tonnes a year by 2015 is to be met, there will have to be a massive increase in outputs from some or all of these methods. The potential role that each of these options could play in meeting the target is discussed in paragraphs 27 - 36 below. The exact role of each option will, to some extent, be influenced by the individual waste management strategies and contracts of each authority which set out the broad aims for municipal waste management (see Panel 2).

Mini recycling banks (bring sites)

3.9 The district councils and Nottingham City Council provide a network of more than 450 mini-recycling banks at supermarkets, shopping centres, leisure centres, and schools. Schemes operated in conjunction with schools and charity groups are eligible for financial incentives. The Regional Waste Strategy also encourages the co-provision of recycling facilities with new development.

3.10 In 2004/05 over 30,000 tonnes were recycled through these centres – around a fifth of all municipal waste recycled that year. However, their future role may be limited by the planned increase in the kerbside collection of many materials. As more materials are collected directly there is likely to be a reduction in the use of these sites. It is possible that some authorities may therefore look at reducing provision or provide facilities only for those materials that are not collected at the kerbside. Even if expanded, it is likely this network could only provide a relatively small proportion of the extra recycling capacity needed over the next 10 years. Although such sites often do not require planning permission, the Core Strategy will need to consider how to promote and support the use of these sites in order to maximise their potential.

Household Waste Recycling Centres (HWRCs)

3.11 The County and City Councils also provide 19 household waste recycling centres (civic amenity sites) where householders can bring their waste. Plan 1 shows the location of existing sites and highlights that that current provision is concentrated in the main urban areas. Rural areas to the north and west have more limited provision.

[2] excludes 20,000 tonnes of inert material that cannot be counted towards Government recycling targets

Panel 2: Local authority waste management contracts

As well as their planning functions, County Councils and Unitary Authorities, such as the City Council, are responsible for ensuring the safe management and disposal of municipal waste. This is done through a process of letting contracts to private sector operators who provide the actual waste management facilities such as landfill and recycling sites.

These contracts are based on 'municipal waste management strategies' which seek to provide an integrated and sustainable framework for future municipal waste management. The County Council prepared its municipal waste management strategy jointly with the Nottinghamshire districts in 2001. This identified a long-term need to provide at least an additional 100,000 tonnes of incineration capacity or 340,000 tonnes of mechanical biological treatment, or similar, in order to meet landfill reduction targets. The City Council is preparing a complimentary strategy of its own.

After extensive negotiation and appraisal, the County Council agreed its new contract in July 2006 with Veolia Environmental Services. This will provide a recycling/composting rate of over 50% and reduce the landfill of municipal waste to minimum levels. Proposals put forward by Veolia include a large-scale recycling facility in the Mansfield area. If approved, this would provide around 80,000 tonnes of additional materials recycling capacity per annum. All proposals under the new contract will require planning permission. They will be tested against policies in the existing Waste Local Plan adopted in 2002 and any other material considerations such as the emerging policies within the new development pan documents and any new Government guidance.

The City Council is currently developing its waste management strategy to help inform the longer-term procurement of waste management contracts that will aim to maximise recycling and composting and minimise waste to landfill.

Local authority waste management contracts only apply to municipal waste - all other wastes are by managed by private, commercial agreements between individual companies and contractors.

3.12 In 2004/05 almost 29,000 tonnes of municipal waste was recycled through the HWRCs (about 25% of the material received). In comparison 38,000 tonnes (33%) was composted. Although there may be potential to increase the amount of waste that is recycled from these sites, it is likely that any increase would be fairly limited in real terms. For example, even if the amount of waste recycled could be increased from 25% to 35%, this would only mean recycling an extra 11,000 tonnes per annum.

3.13 The County Council is due to carry out a comprehensive review of its sites to see whether there is a need for additional provision or if any existing sites need to be upgraded or replaced. The outcome of consultation on the Waste Core Strategy will help to inform this review. The aim is to provide a strategic network of sites that will compliment the district kerbside collection schemes by taking bulkier items and materials that cannot be collected in twin-bin or other schemes.

Kerbside collection and Materials Recovery Facilities (MRFs)

3.14 The recent increase in recycling is mainly due to the introduction of kerbside collection schemes by many districts. These are set to expand as all local authorities are required to collect at least two recyclable materials such as paper, glass or green waste by 2010[3]. In 2004/05 just over 32,000 tonnes was collected from kerbside for recycling. There are no large-scale materials recovery facilities for municipal waste in Nottinghamshire and most of the collected waste is therefore bulked up at various waste transfer stations (see Background Paper 7) and taken out of county for re-processing. However, outline planning permission has now been granted for two sites in Calverton and Mansfield and it is also possible that existing facilities for commercial, industrial and construction wastes could be expanded to take municipal waste if the sites were suitable. Plan 1 shows existing and permitted major MRF sites but these take mainly commercial, industrial and construction demolition wastes and are concentrated to south and east of Nottinghamshire.

3.15 Given the limited increases that could probably be achieved through bring sites and HWRCs it is likely that the majority of the additional 140,000 tonnes recycling capacity will have to come from kerbside collection. Whereas existing schemes have relied on waste going through waste transfer stations before being transported on for reprocessing (see paragraph 32 above), any significant increase in kerbside collection is likely to need a more appropriate method of handling and sorting the collected waste. Specialised materials recovery facilities are able to sort a wide range of co-collected waste enabling materials such as paper, card, plastic, metal, wood, and glass to be separated out for re-processing. Meeting future targets is therefore likely to depend on a major increase in materials recovery capacity within Nottinghamshire.

3.16 This could be from one or two large-scale site or a number of smaller sites. The benefits of larger sites are that they tend to be more economic and able to sort a wider range of materials. The sorted waste can also be transported for processing more easily. The economies of scale mean that larger sites could potentially make use

[3] Section 1 of the Household Waste Recycling Act 2003 requires waste collection authorities to collect at least two recyclable materials separately where it is economic to do so.

of rail or water links if available, especially over longer distances, where materials are re-processed elsewhere in the UK or even exported. If the option of one or two larger sites were pursued it would make sense for these to be located either to the north and south of the county or fairly centrally to serve the main areas of population and therefore the main sources of waste.

3.17 The alternative is to have a number of smaller, more local sites dispersed around the county. These would be closer to the immediate sources of waste but would not provide any overall benefit in terms of transporting waste to its final destination. Road transport is also likely to be the only practical option form smaller sites.

3.18 In conclusion, increased kerbside collection, supported by an expansion of materials recovery capacity, will almost certainly be the main driver behind meeting the 2015 target. However, mini-recycling banks and household waste recycling centres will still have an important role.

b) Commercial and Industrial Waste

3.19 There is no reliable estimate of current capacity for recycling commercial and industrial waste within Nottinghamshire as the technical reports for the Regional Waste Strategy only provide a regional estimate. A very rough estimate suggests that Nottinghamshire currently recycles approximately 590,000 tonnes of recyclable commercial and industrial waste per annum[4]. This is about 44% of what is currently produced in Nottinghamshire.

3.20 Commercial and industrial waste is not subject to targets in the same way as municipal waste but there are increasing efforts to boost recycling rates. Various EU Directives have introduced measures such as the recovery of electrical equipment, end of life vehicles and packaging which are changing the way these waste are managed. The National Waste Strategy also introduced a voluntary target to reduce the landfill disposal of commercial and industrial waste to 85% of 1998 levels. Beyond this, recycling initiatives for this waste stream are reliant on the work of regional development agencies and organisations such as the Waste and Resources Action Programme[5] to promote good practice. Overall, there are fewer incentives for business to recycle, but they are more likely to do so where raw materials are scarce or expensive. The increasing cost of landfill tax and greater corporate social responsibility should also see more demand for recycling provision in future.

[4] Based on 2003 estimates in East Midlands Regional Waste Strategy, EMRA January 2006
[5] Partnership set up by Government in 2000 to help business and the public to reduce and recycle waste.

3.21 The Regional Waste Strategy estimates that Nottinghamshire will need around 550,00 tonnes of annual recycling and/or composting capacity for commercial and industrial waste by 2015 compared to 590,000 at present (see Table 3 below). Based on the very approximate figures available, this suggests that existing facilities are adequate to meet future needs.

Table 3: Estimated Recycling/Compost rates for Commercial and Industrial Waste in Nottinghamshire compared to current level (tonnes / year)*

Year	Recycle	Compost	Total
2005	590,000	-	590,000
2015	546,000	-	546,000
Balance	**-44,000**	**-**	**-44,000**

* Figures are speculative given the lack of local data

3.22 However, this would still mean that a significant volume of commercial and industrial waste would still be sent to landfill each year (around 750,000 tonnes). A major reduction in the landfill of commercial and industrial waste would require a much higher recycling rate. The Core Strategy may therefore have a role in promoting additional recycling facilities to support a more general move away from landfill. It is also likely that future reviews of national waste policy may introduce stricter targets for recycling these wastes.

3.23 As with municipal waste, future recycling targets for commercial and industrial waste could potentially be met by a combination of recycling and composting. However, the possible contribution of composting to any overall target is difficult to estimate. Food waste is a major component of this waste stream and although green vegetable waste can be easily composted, animal by-products including meat and fish require specialist treatment (see Background Paper 4). Due to these uncertainties, it assumed that any additional capacity sought is likely to have to be met through recycling, at least initially. Background Paper 6 also considers possible new technologies for managing biodegradable waste.

Options to increase recycling of commercial/industrial waste

3.24 The main elements of the commercial and industrial waste stream are from the food and drink, energy, chemical and retail sectors[6]. Materials such as paper, card and plastic are cleaned and baled before being sent to UK or overseas re-processors. Many electrical items are now classified as hazardous waste and will need specialist treatment to

[6] East Midlands Regional Waste Strategy, East Midlands Regional Assembly, January 2006

dismantle and reprocess their components. Wastes from the energy sector such as power station ash and colliery spoil, although high in volume, generally raise fewer planning issues and are considered separately in Background Paper 10. The following paragraphs therefore look at possible ways to increase the amount of commercial and industrial waste that is recycled.

Materials Recovery Facilities

3.25 The majority of recycling sites carry out only limited separation of wastes and are essentially bulking up points but there are a number of sites which carry out more sophisticated materials recovery using mechanical separation. These take plastic, paper, card etc. from businesses and commercial premises and are thought to have sufficient capacity to handle up to 600,000 tonnes of industrial and commercial waste per annum. Plan 1 shows the main Materials Recovery Facilities in Nottinghamshire which take commercial and industrial waste. These are concentrated in Nottingham with little provision to the north or west of the county. Any significant increase recycling rates is likely to require the expansion of existing materials recovery facilities or the provision of new sites.

Specialist facilities

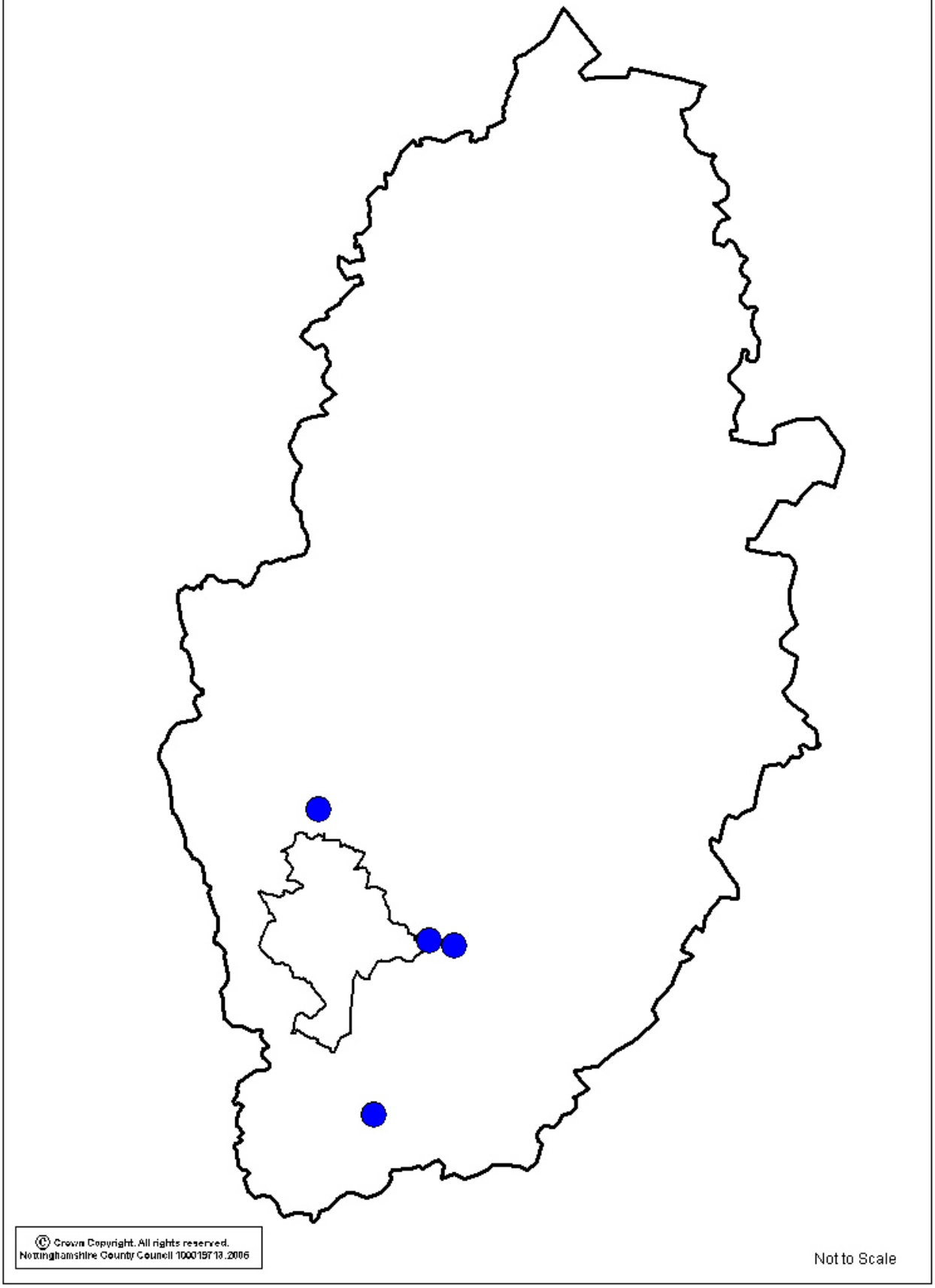
3.26 Strict new regulations requiring manufacturers to take back certain unwanted or end of life goods for recycling or disposal will mean a need for additional collection and recovery capacity. For high volume items such as electrical items there may need to be a number of local sites but for very specialist items there may only be a few sites regionally or even nationally. It is possible that materials will be collected through the various materials recovery facilities or companies may choose to develop dedicated sites. There are no such specialist facilities in Nottinghamshire at present and there is no published estimate of how much additional waste might be involved.

Metals Recycling

3.27 There are approximately 30 licensed metal recycling facilities across Nottinghamshire. These are mostly traditional 'scrapyards' but new European requirements mean that there may be a need for additional specialist 'de-pollution' facilities[7] as well as traditional vehicle dismantlers and breakers. This is likely to mean the expansion of some sites although stand-alone sites are a possibility.

[7] Council Directive 2000/53/EC of 18 September 2000 on End of Life Vehicles

Plan 1: Materials Recovery Facilities in Nottinghamshire



Not to Scale

Resource recovery parks

3.28 The concept of 'resource recovery parks' aims to bring together business who produce large volumes of waste such as glass or rubber, with companies who can use this as a raw material to manufacture new products. This approach would be most effective when combined with research companies specialising in the re-use of waste materials. It is not yet clear whether these would be best developed on a national, regional or local scale. There are no such sites in Nottinghamshire but there may be opportunities for businesses to co-locate in future. Government policy is to encourage planning authorities to work together to encourage the development of an integrated mix of uses[8]. This could mean identifying strategic locations within the Regional Spatial Strategy where suitable clusters of waste-related business could develop. These locations could be safeguarded within district development plan documents as part of wider business/employment land strategies. The Core Strategy will therefore need to consider how to encourage the provision of this type of facility.

3.29 As with municipal waste, the key to achieving higher recycling rates will be the provision of sites to take the recyclable materials and separate these for re-processing. Although the forecast need for new sites is relatively low at present – this is likely to change over the life of the Core Strategy and it is important that the emerging policy framework is flexible enough to allow for this.

c) Construction and Demolition Waste

3.30 There is very little information on how much construction waste is recycled. All current estimates are based on national surveys that have been disaggregated to the regional level. As a very broad estimate about 1.2 million[9] tonnes are thought to be recycled in Nottinghamshire each year. This is about 50% of the construction and demolition waste produced here each year but probably does not include material recycled and re-used on construction sites.

3.31 Government guidelines on aggregate provision[10] assume that recycled and alternative materials will account for 23% of national supply until 2016. This is double the previous level. As well as construction and demolition waste, other materials such as power station ash, of which Nottinghamshire is a major producer, river-dredgings, and glass can be used as substitute materials. The Government introduced an aggregates tax in 2001 which is designed to make the use of recycled aggregates more competitive.

[8] Paragraph 20, Planning Policy Statement 10 'Planning for Sustainable Waste Management' ODPM July 2005

[9] (Table 36) Study to Determine the Current and Future Treatment Capacity of the East Midlands Region: Phase 2, Enviros Consulting Ltd on behalf EMRA April 2005

[10] Minerals Planning Guidance Note 6: Aggregate Provision in England 1994 (partially replaced)

3.32 The Regional Waste Strategy estimates that aggregates recycling within Nottinghamshire will need to be around 1.3 million tonnes by 2020 which is close to current levels. However given the uncertainty surrounding local figures for construction and demolition waste, these estimates must be treated with caution. If waste arisings do not slow down as predicted, then the future recycling rate may have to be far higher.

Table 4: Estimated Recycling/Compost rates for Construction and Demolition Waste in Nottinghamshire compared to current level (tonnes / year)*

Year	Recycle	Compost	Total
2005	1,171,000	-	
2015	1,346,000	-	
Balance	**175,000**	**-**	**175,000**

* Data is based on national estimates and may not be reliable at local level

Options to increase recycling of construction/demolition waste

3.33 Given the regional estimate of future needs and the likely impact of the aggregates tax, there could be a need to expand provision for both permanent aggregates recycling facilities and temporary sites linked to other development. The contribution that will come from the re-use of materials on site or the sale of the materials is impossible to estimate. Without any clear statistics it is difficult to make any realistic assessment of future needs other to look at the options for providing additional sites if needed.

On site recycling

3.34 Many construction and demolition projects crush and screen material on site for re-use or sale. There are no statistics on how much is recycled in this way and it is difficult to make any reliable estimate as to what contribution this will have in future. The assumption is that this practice will continue at least current rates. Government policy stresses the importance of an integrated approach to development[11]. The Core Strategy will need to look at ways of encouraging recycling and re-use as part of all construction projects.

[11] Paragraphs 34 – 35, Planning Policy Statement 10 'Planning for Sustainable Waste Management' ODPM July 2005

Temporary sites

3.35 Nottinghamshire currently has 5 temporary aggregates recycling facilities at former quarries and active landfill sites. Again there are no published statistics on how much is recycled through these sites but these temporary sites make an important contribution by recovering material that would otherwise go straight to landfill. It is expected similar sites will be needed in future.

Permanent sites

3.36 There are currently 6 permanent aggregates recycling facilities within Nottinghamshire. One of these recovers over 100,000 tonnes of used rail ballast each year. The other sites are all based at existing transfer stations and recovery facilities – usually within industrial areas. As it may not always be economic to recycle construction and demolition waste on-site, there will presumably be a continued need for permanent sites.

4. Conclusions

4.1 The data on current levels of recycling for the different types of waste is variable. However, from the regional forecasts of future waste growth it is clear that there will be a need for additional recycling facilities – particularly for municipal waste. Whether there is a need for a significant increase in provision for commercial, industrial and construction wastes is less certain. Current recycling rates for these wastes appear to be close to what may be required but this assumes very limited waste growth and is based on what may be quite poor data. It also means maintaining current levels of landfill disposal, which may not be acceptable in future, particularly if the Government chooses to introduce statutory recycling targets for these wastes as well. There may also be changes in the way these waste are managed in future to allow for more integration of waste and re-processing sites.

Appendix 1: Recycling Rates

Table 1: Municipal Waste Recycling in Nottinghamshire 2004/05 (tonnes / year)

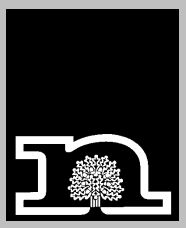
Method	County	City	Total
Bring Sites*	30,000	3,000	33,000
Kerbside	28,000	5,000	33,000
HWRCs	27,000	2,000	29,000
Total	**85,000**	**10,000**	**95,000**

* includes community/school schemes etc.

Table 2: Current v Projected Future Recycling Rates for Nottinghamshire (tonnes / year)*

	Current*	2015**	Required
Municipal	95,000	236,000	141,000
Commercial & industrial	590,000	546,000	-44,000
Construction & demolition	1,171,000	1,346,000	175,000
Total	1,856,000	2,158,000	302,000

* Current figures are 2005 for municipal waste and 2003 for commercial & industrial and construction & demolition waste
** 2015 figures are based on Regional Waste Strategy estimates adjusted for the possible contribution of composting to the overall target where applicable



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