# Waste Strategy



## A waste-less Nottingham

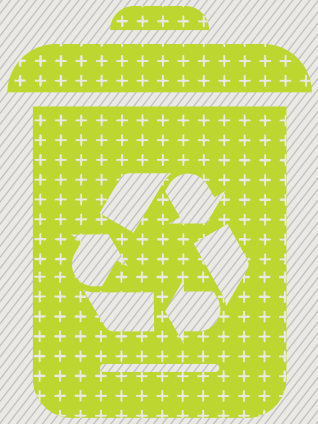
recycle for Nottingham

Nottingham City Council

# Executive Summary

**This draft Municipal Waste Management Strategy (MWMS) seeks to develop a 'waste-less' society for the City of Nottingham.**

## What do we mean by this?



# The five key actions

**Here are five key actions this Strategy aims to delivers over the period (2010-2030) to provide an illustration of what we see as a 'waste-less' society.**

## 1

To produce the lowest amount of household waste per person of any core[1] City in England

## 2

To increase the amount of reuse and recycling from just over a third of our waste at present to the majority of household waste (55%+)

## 3

To transform the management of trade waste and other (non household) wastes by providing new services and infrastructure to reduce, recycle and recover energy

## 4

To save an additional 3-6,000 tonnes of carbon dioxide[2] per year by recovering resources and energy from waste, helping to combat climate change - making the carbon savings by the waste management service around 16 -19,000 tonnes of $CO_2$ / year, this is 25-30% of the City Council emissions, e.g. from heating buildings, vehicle usage, street lighting etc.

## 5

To recover around 47 million kilowatt hours of energy from waste using the Energy from Waste plant at Eastcroft with associated District Heating and electricity generation scheme, and by also processing food and other organic waste in a technology known as Anaerobic Digestion. This also contributes to the Council's Sustainable Energy Strategy targets.

1 The Core cities are: Nottingham, Liverpool, Manchester, Birmingham, Leeds, Sheffield, Newcastle, Bristol
2 Or carbon dioxide equivalents, where other greenhouse gases are generated

# What do these numbers mean?

## 47 million kilowatt hours

**is about the same total amount of energy as every household in Nottingham using their (efficient) fridge freezer & washing machine in normal usage for a year ... as well as boiling the kettle once a day for a nice cup of tea!**




## 16,000 tonnes

**of carbon dioxide is about the same amount as would be released if a person from every house in Nottingham drove a small car 10 miles per week for a year**

# What is a Municipal Waste Management Strategy?

**This Municipal Waste Management Strategy sets out the aims and intentions for delivery of the waste management service provided by the City Council. This includes the collection, recycling, treatment and disposal of wastes from households, some commercial premises (known as trade waste), and other council supporting services to reduce the amount of waste we generate. The combination of both household waste and other wastes collected by the City Council is known as 'Municipal Waste'.**

**This document is a draft Municipal Waste Management Strategy for public consultation. The Strategy (when finalised) will cover the period 2010 – 2030. We have broadened the remit of a Municipal Waste Management Strategy and linked opportunities and initiatives for managing other waste streams and wider environmental agendas (climate change, energy and sustainability) in accordance with best practice in waste management.**

# Why do we need a Waste Management Strategy?

**The delivery of the waste management service is an area that requires forward planning to ensure that the collection, recycling and disposal services not only meet the latest standards and policies but also meet the aspirations and needs of the residents. We therefore need to carefully consider what we want the service to look like in the medium and long term so that we can plan and deliver the services we need. For example one of the proposed services within this strategy is to develop a capacity to digest food waste in order to recover compost and a useful biogas.**

**However this technology (known as Anaerobic Digestion) usually takes 3 – 4 years from the decision to procure a facility or service, to when it becomes operational.**

**Therefore if we decide to procure this service now (2010/11), the food waste collection and treatment service is unlikely to actually be in place until 2014 at the earliest (unless there is spare merchant capacity available at an affordable cost in the interim).**

**The Municipal Waste Management Strategy is designed to consider the type of service we would like to see, and this draft version of the Strategy is an opportunity to comment on our vision and proposed actions for the service up to 2030.**

# Our vision

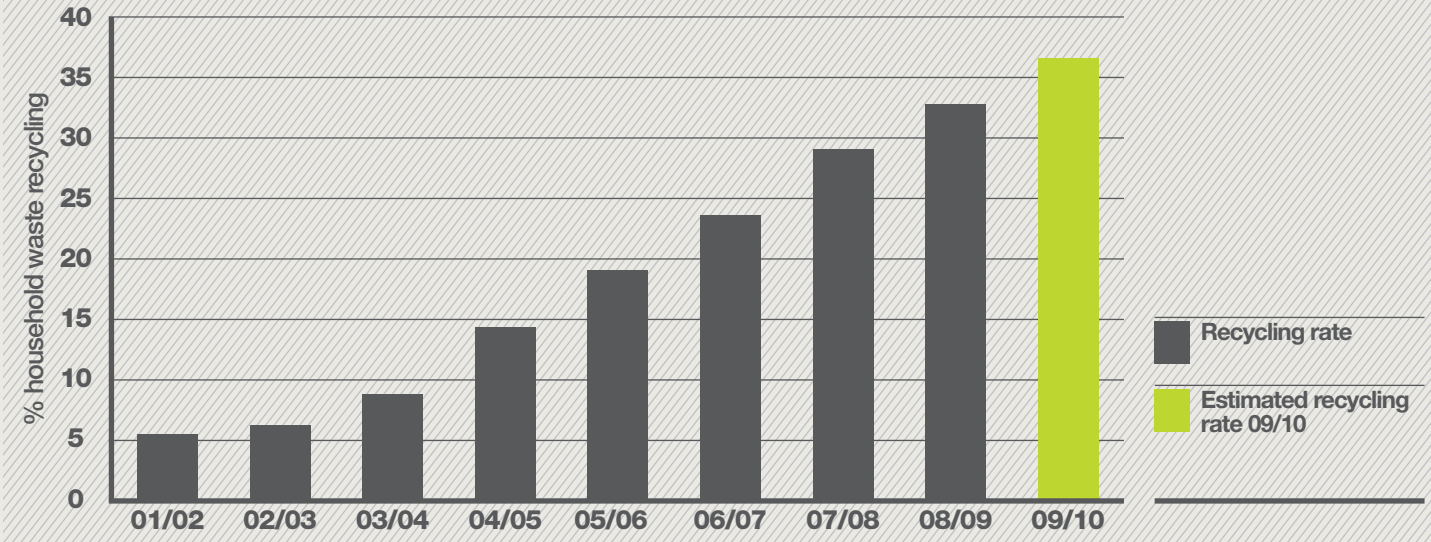
**The Municipal Waste Management Strategy aims to deliver a service driven by the need to conserve resources and reduce carbon emissions. The municipal waste management service will be flexible and innovative as regards new technologies, high quality, accessible to all and delivered in a cost effective manner.**

**The Council will lead by example and strive to work in partnership with the community and other stakeholders to: firstly reduce the amount of waste that is generated; secondly to recover materials for recycling; and finally to treat waste through energy and resource recovery techniques to support the energy needs of residents and businesses in the City. The amount of waste landfilled will be minimised with the ultimate aim of 'zero waste' to landfill. The Municipal Waste Management Strategy is integrated with the Nottingham Sustainable Energy Strategy, Carbon Management Plan and Nottingham Plan.**

# Where have we come from?

**Nottingham has substantially improved its environmental performance over the last decade as shown in the graph of household waste recycling rates, below. Recycling saves finite (limited) resources and helps reduce damaging carbon emissions that contribute to climate change.**

**Just over a third of Nottingham's household waste is now recycled. However there remain further challenges for the service.**



# Challenges and Solutions

**There are many challenges facing the delivery of the municipal waste management service and we will explain the key issues in this summary document. However one challenge sits above all the others in our view, and that is the threat of climate change. The City Council and its stakeholders have acknowledged the importance of this issue and placed carbon performance as the prime environmental criteria in choosing between waste management options making this a truly 'carbon led' Strategy.**

**Tackling climate change must also be set in the context of the obligations and responsibilities of the City Council as a Waste Collection and Disposal Authority and the main challenges and solutions for the service are set out in this document. It should be noted however that this is a twenty year Strategy and there will be other changes during that period that we cannot predict at this stage. It is for this reason that the Strategy is designed to have some flexibility and there will be a review at five year intervals of the strategy or where fundamental changes take place.**

# The challenge to reduce waste

**Nottingham already performs well compared to many other areas of the UK as regards producing less household waste per person than the average local authority area. A challenge of the Strategy is to continue this high performance and seek to be the best core city[3] in England by producing less household waste per person than any of the other seven core cities.**

**We aim to achieve this by providing improved information and services on how to reduce wastes through waste prevention initiatives or by reusing items to avoid them becoming wastes.**

**An appraisal of waste prevention and reuse options[4], using criteria developed in consultation with our officers, Councillors and other stakeholders, concluded that the following measures be adopted:**

- **A high profile food waste prevention campaign will be launched, aligned with the national 'Love Food, Hate Waste' message and materials. The aim of this campaign would be to influence purchasing and cooking behaviours and reduce the environmental impacts of unnecessary food being purchased and food waste requiring disposal. This will be linked to the home composting promotion (below).**
- **The current practice of providing subsidised home composting units to householders will be continued and reinvigorated as part of the new food waste promotional campaign including supporting information and advice on good home composting practice.**
- **The 'Freecycle' and other similar reuse or 'exchange' networks will be promoted by the Council to raise awareness and participation in these schemes to encourage the reuse of unwanted goods from households and businesses, thereby avoiding disposal.**
- **The Council will be proactive in engaging with the business community of Nottingham as regards prevention & reuse opportunities and utilise the customer base of the trade waste collection as a route to engagement.**
- **The Council will provide leadership and resource to support the delivery of reuse activities in the City through partnerships with the third sector (e.g. charities, not for profit organisations, etc). This is an area that we believe can be enhanced, providing jobs, training and refurbished goods back into the Community for the benefit of the environment and Nottingham as a whole.**

3 The Core cities are: Nottingham, Liverpool, Manchester, Birmingham, Leeds, Sheffield, Newcastle, Bristol
4 Options Appraisal report supporting the Municipal Waste Management Strategy, available from www.nottinghamcity.gov.uk/wastestrategy

# The challenge to recycle more

**One of the key challenges for this Municipal Waste Management Strategy is to deliver a minimum of 50% recycling target of household waste by 2020, and to exceed this level where we can. At present Nottingham recycles around ~36% of its household waste. The draft MWMS explores options therefore for moving from 36% to over 50% recycling, and concludes that a combination of approaches will be required:**

- To maximise the use of the current kerbside recycling collection system through good communications / door knocking techniques and targeting lower performing areas.
- To expand recycling kerbside collections to all households capable of receiving the collection by the end of 2010-11, utilising the current capacity available based on a three-bin collection scheme.
- To review the performance and benefits of the Bring sites / Mini Recycling Centres to ensure that the collection system complements the enhanced kerbside service, remains an efficient service and that households not covered by the kerbside collection system can have a comprehensive alternative recycling system available to them.
- To introduce on-street recycling (litter bins for recycling) at key locations in the City.
- It is noted that the Redfield Road Household Waste Recycling Centre (HWRC) already performs to best practice levels of recycling (>80%), and therefore no initiatives are planned for this facility. However there is likely to be a need for a second Household Waste Recycling Centre in the City and options are being explored at present for this facility. A new facility (and any contract let for its operation) should optimise both recycling and reuse of waste that is taken to the site. There may be potential for use by non household users at designated times if appropriate.
- The trade waste collection system currently serves around 4,000 customers and handles around 17,000 tonnes of waste per annum. Only a fraction of this is recycled, although the bulk (~75%) is sent for energy recovery at the Eastcroft site / Enviroenergy heat station. This strategy seeks to transform the trade waste service where economically feasible to become a ‘recycling led’ service seeking to emulate the household collection service in the range of recyclables collected and its environmental performance.



- **To develop a food waste collection and recycling service to householders and trade customers and to engage with other commercial organic waste producers in the city to seek to provide a large enough waste stream for a cost effective organic waste treatment plant for Nottingham.**

- **To procure Anaerobic Digestion[5] capacity to treat either a mix of garden / food wastes (first preference) or separate food wastes only. This technology will produce a useable 'compost' output[6] and also derive a biogas which can be used to recover energy. This approach has strong carbon (climate change) and energy security benefits. The business case for different collection and treatment options will be explored to achieve the optimum environmental, economic and practical solution.**

- **Where biogas is generated through Anaerobic Digestion the most efficient viable energy recovery process will be utilised.**

- **The appraisal of different recycling options which was undertaken also explored alternative collection methods for dry recyclate from the kerbside. The preferred option is to seek to optimise the existing system, predominantly on the grounds of lower cost and practical deliverability of an alternative collection system including its public acceptability and operational challenges.**

- **The Council will develop and maintain an active dialogue with both the third sector and the private sector recycling contractors as regards exploring markets and opportunities for adding further materials to the kerbside and / or bring site services, and to seek local markets for recyclates where possible. Additional materials should be added to the recycling collection service where viable to maximise environmental performance. However this should be balanced by affordability and only where sustainable markets are identified. This aspect will be subject to periodic review and reporting, in liaison with relevant Government bodies such as the Waste & Resources Action Programme.**

**This Strategy aspires to reach a 55% recycling rate for household waste by 2025, but acknowledges that this level of recycling will be in part dependent on the market for recycled material and there is significant uncertainty over the regulations and markets, notably towards the latter period of this MWMS. However we believe we will deliver a minimum of 50% recycling by 2020 and aim to push the boundaries in this area to deliver 55% rate or indeed a higher recycling performance wherever viable.**

5 Anaerobic Digestion is the treatment of organic wastes in sealed vessels where bacteria digest the waste releasing biogas (mostly methane and carbon dioxide), this can be combusted for green energy generation

6 This may be used on land or dried for use as a fuel where appropriate

# The challenge of managing the waste left over

Nottingham already landfills far less waste than most authorities in England. The initiatives explained in this Strategy will mean that Nottingham will also create far lower amounts of residual waste than the target set by Government. We believe in a 'waste – less' society and seek to reduce the amount of residual household waste per person to ~222kg by 2020, compared to the national target of 250kg per person. We also seek to go further and reduce this to below 200kg per person by the end of the Strategy period.

The management of residual (or 'wheelie bin') waste from households mostly takes place at the Eastcroft Energy from Waste plant. This facility burns the waste and uses the heat to generate steam which is sent to the Enviroenergy combined heat and power (CHP) plant, where the steam drives turbines for electricity generation and to provide heat for the District Heating network. Enviroenergy is an 'arms length' local authority company and receives government incentives for the generation of this low carbon energy and the electricity contributes to national renewable energy targets.

The contract for sending waste to this facility runs out in 2030, and therefore towards the end of this Strategy period there will be a need to consider a procurement strategy for replacing this residual waste treatment capacity. This Strategy does not seek to identify a technology for residual waste treatment as there will be at least two strategy reviews prior to the procurement phase. However a high level assessment of environmental impacts of different treatment options was conducted for the purposes of the draft Environmental Report which accompanies this Strategy.

The contribution of energy recovery is a key component of this Strategy and supports delivery of targets within the Nottingham Sustainable Energy Strategy. In addition there is the potential for other initiatives within the Energy Strategy (e.g. biomass combustion) to link with waste management operations to gain economies of scale or be co-located on sites identified for future waste infrastructure development.

Nottingham also recycles some residual waste from both household and non household sources at the Wastecycle residual waste Materials Recycling Facility at the Colwick Industrial Estate. This facility handles some of the more difficult municipal waste streams such as street cleansing wastes, bulky waste, transfer station wastes and Household Waste Recycling Centre residual wastes, and makes a significant contribution to the City's recycling rate adding around 4%.

**A smaller proportion of residual household and non household wastes (15 – 25%, depending on which specific waste stream) is sent to landfill. This Strategy intends to reduce this fraction, and seeks to divert as much waste as possible with the aspiration of delivering zero waste to landfill, as this is the most damaging form of waste management. The Strategy will put in place measures designed to help achieve this aim, notably:-**

- **Waste prevention measures – to reduce overall waste arisings.**
- **Reuse initiatives to extract often difficult to manage wastes from the waste stream (e.g. bulky goods) that are often inappropriate for recycling or energy recovery, and therefore could otherwise end up in landfill.**
- **Innovate and continue to deliver best practice in extracting more recyclate from the household and trade waste streams to reduce overall levels of residual waste.**
- **Work with residual waste treatment partners (e.g. Wastecycle, Waste Recycling Group) to seek alternative treatment measures to recover materials or energy from residual waste and avoid landfill.**
- **Work with Waste Recycling Group to recycle[7] bottom ash from the Eastcroft plant to provide a useful secondary aggregate and to avoid landfill disposal of this material. This process will also extract additional metals from the ash for recycling and could contribute to saving over 2,000 tonnes of $CO_2$ emissions by recycling the non ferrous element in particular.**
- **Ensure sufficient reuse, recycling, and residual waste treatment capacity is available throughout the Strategy period and beyond to prevent landfill becoming the default option for wastes.**
- **Continue to deliver education and raise awareness of environmental issues to encourage more sustainable waste management and reduce levels of residual waste to a minimum.**

7 This would not qualify as 'recycling' due to the definitions applied in the National Indicators



# The challenge for us all

**A key aspect of this draft MWMS is a need to engage with the community (businesses, schools, charities, residents) to seek to manage wastes more sustainably. In broad terms this means to generate less waste and recover as much of the waste that is generated so we can recycle the materials to conserve our resources and reduce our impact on climate change. The explanation of why there is a need to participate in such waste management services is a key role of the Council.**

**The aim of our education programme is to raise awareness and to stimulate sustained changes in behaviour, leading to improved management of our resources. We want to deliver the best carbon performance we can and this means the Council and its partners providing both accessible and comprehensive services, and residents using the systems do so to their full potential.**

# The challenge for the Council

**We have also identified a need to ensure our own staff and activities adhere to the objectives of this Strategy and will set in place initiatives and targets to reduce Council wastes and seek to recycle wastes where they do arise.**

**The Council will also implement the range of actions identified in the Municipal Waste Management Strategy. An action plan with key activities, roles and responsibilities supports the objectives and targets within this draft Strategy[8].**

# Next Steps

**The draft Municipal Waste Management Strategy will be subject to a 12 week public consultation over the summer of 2010, accompanied by a questionnaire seeking views on key aspects, and events/opportunities to engage with the process.**

**The Strategy will then be finalised in the light of these comments in October and be published before the end of 2010.**

8 Action Plan for the draft Municipal Waste Management Strategy is included at www.nottinghamcity.gov.uk/wastestrategy

# Want to find out more?

**If you want more detail a full set of Waste Strategy documents are available at www.nottinghamcity.gov.uk/wastestrategy, or you can look at a printed copy of each report at your local library. Alternatively contact us on 0115 915 2000 and ask for Waste Management.**

1

The draft Municipal Waste Management Strategy for Nottingham

2

A draft 'Options Appraisal' report

3

A draft 'Environmental Report', looking at the effect our Waste Strategy will have on the environment

4

A draft Action Plan, setting out what we intend to do

**We can give you this information in whatever form, style or language is best for you. Just call 0115 915 2000.**

## Polish

Pomoc dla mniejszości
By pomóc Państwu skorzystać z tych informacji, możemy je udostępnić w innym formacie, stylu lub języku. Prosimy o kontakt pod numerem telefonu: 0115 915 2000

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## Farsi

پیام بر ابندی ها:
مامی تو اتیم این اطلاعات را به شکای متفاوت سیکها و زیتهای دیگر در اختیار شما قرار دهیم . برای کسب اطلاعات بیشتر با شماره تلفن **0115 915 2000** تماس حاصل فرمایید.

## Urdu

شعبہ مساوات سے متعلق معلومات۔
اس بات کو یقینی بنانے کیلئے کہ آپ کو ان معلومات تک رسائی حاصل ہو ہم آپ کو یہ معلومات کسی بھی زبان یا صورت میں مہیا کر سکتے ہیں۔ براہ مہربانی فون نمبر: 0115 915 2000 پر رابطہ کریں۔

## French

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**Waste Strategy**



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