

INTRODUCTION

Kildare County Council is required under Section 23 (1) of the Waste Management Act, 1996 to prepare a Waste Management Plan, having due regard to the Waste Management (Planning) Regulations, 1997. Kildare County Council has prepared a Waste Management Strategy Study as a precursor to the development of its Waste Management Plan.

Traditional approaches to waste management have focused on end-of-pipe and end-of-product-life issues. The costs, however, of waste treatment and pollution control are continually rising. The production of waste is not just an environmental issue – it is an economic issue.

Waste management is one of the central themes of sustainable development. It is imperative that an efficient waste management infrastructure be in place within Kildare if the county is to continue to attract modern industry and commerce. Kildare County Council has an ongoing commitment to sustainable development and to the protection of the environment and public health.

The main objectives in developing a waste management plan for Kildare are to:

- Comply with the principles of sustainable development
- Offer the best available environmental option not involving excessive cost
- Apportion costs in an equitable fashion
- Promote participation in waste management by the public at large and private/commercial organisations
- Comply with current and impending national and EU policy and legislation concerning waste management.

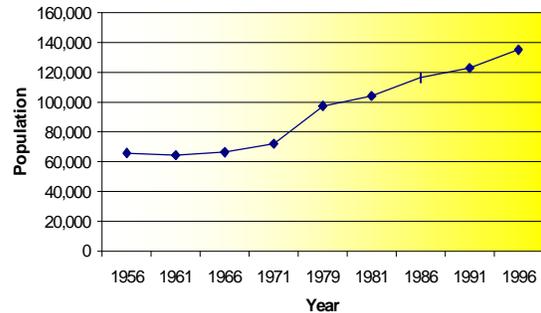
The content of the Kildare Waste Management Plan is in accordance with the format required by the Waste Management (Planning) Regulations 1997, the following of which is a summary.

DESCRIPTION OF THE COUNTY

County Kildare is an inland county in the east of Ireland. The county is 1,688km² in area. The principal towns within Kildare are Naas, Leixlip, Newbridge, Kildare, Maynooth and Athy.

Co. Kildare has a population of 134,992 (Census of Population, 1996) which accounts for 3.7% of the total population of the State. The large growth in population in recent years in the county is due in part to its proximity to Dublin. The records for comparisons with earlier years are illustrated below.

Figure 1 Historical Population of Co. Kildare 1956 – 1996



The number of households in aggregate town areas (i.e. population clusters of 1,500 or more inhabitants) is 23,920 and that in aggregate rural areas is 13,507. Table 1 gives the number of households in each town in Kildare with a population greater than 10,000.

Table 1 Number of Households in Towns of Population > 10,000

TOWN	NO. OF HOUSEHOLDS
Naas	4,380
Leixlip	3,543
Droichead Nua	4,015
Celbridge	3,465

Industrial activity in Co. Kildare is represented by a number of sectors including high technology (e.g. Intel, Hewlett Packard), food processing (Green Isle), engineering (Master Plast, Moovmor), pharmaceutical (Wyeth and Oral –B) and services (e.g. Bord na Mona HQ, Council Offices). Apart from the companies above, the majority of industrial concerns may be classified as small to medium enterprises.

Commercial businesses are also significant in both number and distribution within the County. Each of the main towns has in the region of 100 – 150 commercial businesses. Of these grocery and public houses are in the highest proportion. Other important commercial businesses include clothing, footwear and newsagents.

Kildare has 123,000 ha of farmland. Of this 33,000 ha consists of crops, fruit and horticulture, 85,000 ha of silage, hay and pasture (of which 16,000 ha is silage) and 5,000 ha of rough grazing (in use). Total number of cattle in the county is 140,000, while sheep number 281,000 and pigs total 26,200. Poultry, deer and goats are also farmed and these number 95,000, 100 and 300 respectively.

County Kildare has an excellent transport network. The County is serviced by an intricate network of national, regional and county roads as well as motorway. The County Council has a number of schemes underway with regard to road improvement, upgrading etc.

The railway network makes a significant contribution to the economic activity of the County. There are stations at Newbridge, Kildare, Athy and Maynooth. In addition there are commuter services utilising the main lines. It is likely that the demand for these services, and particularly the commuter services, will increase due to increased population in towns served, and due to the changing patterns of commuting and economic activity.

Kildare is an inland county and therefore has no ports. The main rivers flowing through the County are the Liffey, the Barrow and the Boyne. The Barrow is navigable throughout its course in Kildare. The Royal Canal and Grand Canal are also significant navigable waterways in the county giving passage to both Dublin and the Shannon.

PRESENT POSITION REGARDING WASTE MANAGEMENT

Waste Arisings

Household waste generation is a function of population. The average per capita rate of household waste generation in Co. Kildare is taken as 330 kg per annum (Waste Management Strategy, 1999). The quantity of household waste collected in Co. Kildare, estimated from landfill

weighbridges is 42,000 tonnes/annum (1998). Household waste delivered to civic waste facilities in 1998 amounted to 4,000 tonnes approx. An additional 500 tonnes was collected at bring centres and by Kerbside Dublin in the county.

There are of course a number of other sources of waste arisings in Co. Kildare. Table 2 below highlights the quantity of waste arisings in the County (1998).

Table 2 Summary of Waste Arisings in Co. Kildare for 1998 (tonnes/annum)

Waste Type	Estimated Quantity Arising	Managed by the County Council in 1998
Household	46,730	46,500*
Commercial	25,649	20,200
Industrial	30,000	17,000
Litter & Street Sweepings	1,000	1,000
Construction & Demolition	99,894	3,230
Municipal Sludges	18,045	18,045
Contaminated Soils	1	1
Ash & Other Incineration Residue	0	0
Mining & Quarry Waste	Unavailable	0
Healthcare	39	0
Sewage Sludge (tds)	1,931	1,931
Water Treatment Sludge	1,860	1,860
Industrial Sludge	8,686	-
Agricultural Waste	90,660	-
Total	324,495	109,767

* This quantity includes household waste collected at civic amenity sites, bring centres and household waste collected by Kerbside Dublin.

General agriculture waste consists mainly of animal slurries, plastic wrap/bags for silage, fertiliser bags and mushroom compost. Table 3 below illustrates the quantity of agricultural waste arisings.

Table 3 Summary of Agricultural Slurries and Sludges

Sludges & Agricultural Wastes	Estimated Quantity Arising (tonnes dry solid)
Sewage Sludge	1,931
Water Treatment Sludge	1,860
Industrial Sludge	8,686
Cattle & Cow Slurry	74,186
Pig Slurry	3,309
Sheep Dung	5,756
Horse and Pony Manure	202
Poultry Litter & Slurry	1,154
Spent Mushroom Compost	6,053
Total	103,137

The EU Resolution of May 7th, 1990 on waste management policy within the community considered that it was desirable to establish programmes to deal with certain types of wastes. In 1991, the commission initiated its programme on Priority Waste Streams whereby project groups were established to determine solutions for a number of waste streams. Table 4 below gives a summary of quantities of priority wastes arising in County Kildare.

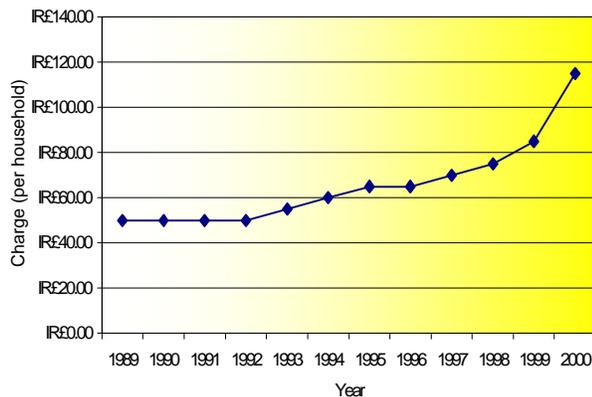
Table 4 Summary of Priority Waste Quantities

Priority Waste	Estimated Quantity Arising (tonnes)
Electrical & Electronic Goods	2,000
Batteries & Accumulators	270
Oils	211
Polychlorinated Biphenyls (PCB's)	0
Tyres	662
End-of-Life Vehicles	300
Packaging Waste	30,596
Total	34,039

Waste Collection

Kildare County Council provides a refuse collection service to householders, as well as commercial and industrial premises. Waste collection services in Naas U.D.C. and Athy U.D.C. are provided by the private sector. The method used for these services is based on wheeled bins. Charges levied by the County Council for the collection of waste from households for the past ten years are shown in figure 3 below.

Figure 3 Kildare County Council Household Waste Collection Charges 1989 - 2000

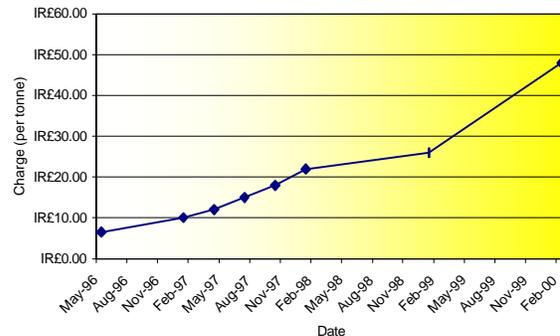


Waste Prevention & Minimisation

A Cleaner Production Demonstration Programme aimed at industry all over the country was run over the years 1997 and 1998. It is anticipated that the achievements of industry and commerce in the field of waste minimisation will gather pace in the short to medium term as the combined influence of such measures gains momentum. Future success in this field will tend to moderate the rate of growth of waste generated from these sectors.

The waste collection charges and landfill disposal charges are periodically reviewed by the Council to ensure that the real cost of waste disposal is met. Increased charges are also intended as an economic incentive for the reduction of waste.

Figure 4 Landfill charges at Silliot Hill (per tonne) 1996 – 2000



units at a reduced rate to the general public. This scheme is intended to encourage and support the composting of the organic fraction of household waste by householders and in so doing reduce the quantity of waste left out for collection.

Waste Recovery

There are 25 bring centres located throughout the county for the collection of glass, cans and textiles. The collection centres are provided and operated by private concerns assisted by Kildare Co. Council. The current density of bring centres is one per 5,870 persons (1996 population).

The quantity of material recovered from bring banks by the main operator of these sites, Rehab Recycling is shown in Table 5.

Table 5 Quantity of Material recovered by Rehab Recycling in County Kildare (1998)

Materials	Quantity (tonnes)
Glass	422
Cans	4
Textiles	1
Total	427

Waste Management Facilities

Silliot Hill is the only site operated by Kildare County Council. The site is located approximately 2.5 km north of Kilcullen in a former sand and gravel quarry. The landfill is centrally located to serve the county and accepted approximately 104,500 tonnes of waste and 84,100 tonnes of material for site works. A breakdown of these figures is provided in Table 6.

Table 6 Material Recorded at Silliot Hill Landfill in 1998

Waste Type	Quantity
Household	42,000
Silliot Hill Civic Amenity Waste	4,000
Commercial	20,200
Industrial	17,000
Construction & Demolition	3,230
Material for Site Works	84,145
Sludge	18,045
Total	188,620

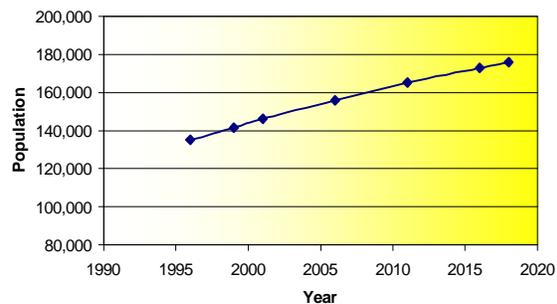
ANTICIPATED DEVELOPMENTS & TRENDS OVER THE PERIOD OF THE PLAN

A number of developments and trends are anticipated over the period of the Plan. The primary anticipated developments/trends include:

- Trends in population size and distribution
- Trends in activity in the commercial, industrial and agricultural sectors
- Trends in waste management and private sector involvement
- Pending community acts
- Relevant developments in other local authorities.

With respect to future population numbers in the county, reference was made to the projections in the County Development Plan 1999. Using this data the County Population in 1999 is estimated at 141,600 while forecast numbers in the period to 2018 are represented in Figure 5 below.

Figure 5 Projected Population for Co. Kildare 1996 - 2018



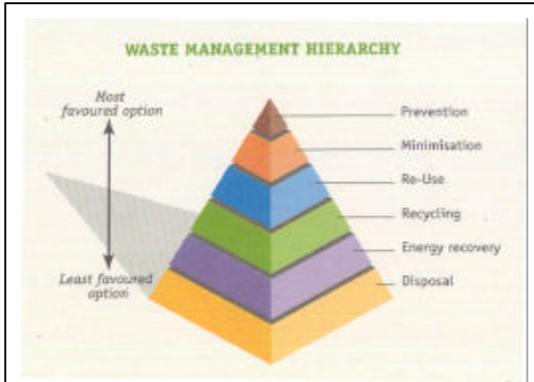
The Economic and Social Research Institute (ESRI) provides growth forecasts per annum for specific sectors in its Medium Term Review (1997) with regard to trends in the commercial and industrial sectors. A very rigorous growth in market services is predicted with annual rates as high as 6.9% in the period to 2000 and averaging 5.7% per annum overall in the period to 2011. It can be assumed that the generation of commercial waste is linked to the performance of the services sector of the economy.

The ESRI also provides forecasts of economic output from the various industrial sectors for the period to 2011. A growth rate of 2.5% pa in industrial waste production is proposed for the period 1999 – 2006 based on a consideration of the ESRI's economic projections.

WASTE MANAGEMENT POLICY

The following is a summary of Kildare County Council's waste management policy for the period of this plan. These actions are prioritised in accordance with the Governments policy objectives as stated in the document "Changing Our Ways" (DoELG). Figure 6 below shows the hierarchy of waste management.

Figure 6 Hierarchy of Waste Management



Specific Policy on Waste Prevention

- Intensify public awareness and information using Internet, environmental bulletins etc.
- Review disposal charges as an economic incentive for waste prevention
- Review the recommendations of the “Consultancy Study on Plastic Bags”.

Specific Policy on Waste Minimisation

- The Council will carry out a detailed eco-audit of its activities
- Based on the audit, targets will be established for in-house waste minimisation and recovery
- Pursue full certification via an environmental management system such as ISO 14001
- The Council will continue to encourage small and medium sized enterprises in the application of minimisation techniques
- The Council will initiate a public information programme
- Impose realistic disposal charges.

Specific Policy on Recovery/Reuse

- Provide facilities at the Councils civic amenity centres to recover reusable materials
- Facilitate a repair/renovation outlet.

Specific Policy on Recovery/Recycling

- Continued support for commerce and industry in the achievement of statutory targets for the recovery and recycling of packaging waste
- Implement the Waste Management (Packaging) Regulations 1997
- Arrange for the provision of kerbside collection for packaging waste and newspapers in a number of towns (Naas, Newbridge, Kildare, Celbridge, Leixlip, Maynooth, Athy)
- The Council will arrange for the provision of an intensive bring system for the recovery of household recyclable material in the remainder of the county
- The Council will arrange for the provision of a minimum of 3 No. dedicated Civic Amenity sites.

Figure 7 Recycling Centre



Specific Policy on Energy Recovery

- The Council in the short-term will dispose of municipal solid waste arisings through landfill in adjacent authorities
- In the short to medium term, the Council will provide a materials recovery facility, biological treatment centre and residual landfill
- In the medium to long term, the Council will consider alternative arrangements for the disposal of residual waste in co-operation with neighbouring local authorities.

Specific Policy on Disposal

- The Council will provide restoration and aftercare for the Silliot Hill Landfill post closure
- The Council will encourage private sector collectors in the use of approved privately operated disposal facilities
- The Council will provide, or arrange for, the provision of a materials recovery facility/waste processing facility, biological treatment plant and waste transfer facilities
- The Council will provide, or arrange, for the provision of a new engineered landfill site
- The Council will have due regard to developments by or in adjoining local authorities
- The Council is developing measures designed to limit the quantity of construction and demolition waste landfilled in the County

Specific Policy on Waste Collection

- The County Council will ensure that all householders within its administrative area are provided with a regular and efficient system for the collection of waste
- The Council is currently reviewing waste collection services in the county including on-vehicle-weighing
- The Council will regulate all waste collectors in accordance with the Waste Collection (Permitting) Regulations as and when they are implemented.

Specific Policy on Animal Slurries

Spreading of slurry related materials can contribute to elevated nutrient levels in freshwaters and groundwaters. Where these conditions exist, the relevant regulations will be implemented as well as the recommendations contained in DoELG publications.

Specific Policy on Sludge

A sludge management plan for County Kildare is currently being prepared in accordance with the guidance *document Sludge Management Plans: A Guide To Their Preparation and*

Implementation (DoELG). The sludge management plan considers all forms of non-hazardous sludge arising and predicted to arise in the county over the next 20 years and proposes sustainable strategies for them. In the interim Kildare Co. Council intend to enter into a service contract for two years for the treatment of digested sludge arisings from the main wastewater treatment plants at Osberstown and Leixlip. It is intended to locate this temporary plant at the landfill site at Silliot Hill. Thermally dried biosolids are shown in Figure 8.

Figure 8 Thermally Dried Biosolids



Specific Policy on Hazardous Waste

The Council will review and consider the objectives of the Proposed National Hazardous Waste Management Plan and will consider the implementation of any actions required of it under this document. The Council will base its own Hazardous Waste Strategy on this document.

Figure 9 Separation of Hazardous Waste



The Council will provide appropriate facilities for the collection of waste oils and household hazardous waste (refer to figure 9 above). The Council has also introduced a number of

collection points for batteries. Battery collection facilities will be increased depending on the success of the initial trials.

Specific Policy on Litter Prevention

- A programme of education will be undertaken in both primary and secondary schools
- The Council has arranged to have a leaflet 'Litter and the Law' printed and distributed county wide
- The Council will continue to operate a number of schemes which are designed to assist the community in their endeavours to clean up their areas
- The Council will continue to operate a street cleaning programme throughout the period of this plan
- The number of litter bins and their location shall be reviewed and additional bins will be provided, as required, in all towns
- The Council have already appointed two litter wardens.

CONCLUSION

Efficient waste management is one of the central themes of sustainable development. The strategy and the overall policy aim of Kildare County Council, requires that waste management practices move up the hierarchy of waste management such that waste is not merely disposed of, but should where possible, be prevented, recovered, re-used and minimised.

It is a specific policy of Kildare County Council to encourage, support and promote waste prevention. The Council will actively encourage and support the waste management policies as outlined in the Waste Management Plan. The Council will encourage support of the policies through such avenues as education, the internet and the publication of newsletters as well as leading by example in introducing an environmental management system to cover all of the Councils own activities.

Furthermore, the Council will continue to support the public involvement in the implementation of the waste management policies by:

- Co-financing the establishment of litter bins and community composting facilities in remote areas
- Assisting community groups in local clean-up campaigns
- The development of civic amenity facilities
- Increasing the density of drop-off centres in rural areas
- Introducing kerbside collection in several towns.

The Council is aware of the need to promote participation in waste reduction and recycling, if the regulatory targets are to be met. It is the Council's hope that by presenting pro-active and consistent messages repeatedly, behavioural changes will be encouraged, acknowledged and reinforced. Furthermore, every effort will be made to alert voluntary organisations and community groups within the county of the need for a greater effort at waste minimisation, recycling and recovery.

To reduce the amount of waste being produced and being disposed of, it is imperative that the Council and the community work together to implement the policies outlined in the Waste Management Plan. With the active participation and involvement of the people of Kildare in implementing the Waste Management Policies, the goals and targets in the Plan can be achieved.

