
1. OVERVIEW OF THE COUNTY

County Kildare is an inland County bounded to the south by Carlow, to the west by Counties Laois and Offaly, to the east by Counties Dublin and Wicklow and to the north by County Meath. The total area of the County is 1,688 km². The estimated population of the County is 163,924 being 4.2 % of the nation's total population (2002 Census).

1.1. Topography

The 2000 Waste Management Plan for County Kildare describes the topographical features of the area as follows:

“A low lying and flat topography dominates the Plainlands of County Kildare. Approximately two-thirds of the County is less than 100 m above ordnance datum (OD). The Plainlands of County Kildare can be sub-divided into three regions. These are the central and southern plains, the west central lowlands and the northwest boglands. The plain of central and southern Kildare varies from very flat to strongly undulating. The west central lowlands are characterised by raised bogland which formed after the last glaciation. The River Barrow and its tributaries drain this region. In northwest Kildare relief is low and elevations in this area are between 60 m and 120 m OD.

“The East Kildare Uplands occupy a narrow strip that runs along the Kildare/Wicklow County boundary to the southeast of Kill. The highest elevation in County Kildare occurs in this region at 349 m OD. These hills can be considered as the foothills of the Wicklow Mountains. The hills of the East Kildare Uplands follow a northeast-southwest trend. Elevations range from approximately 140 to 350 m OD. To the east lie the Wicklow Mountains and to the west are the plains of Kildare.

“The Chair of Kildare and the Newtown Hills comprise a ridge of low hills trending northeast-southwest between Kildare and Rathangan. Redhill, the most southerly of the hills, rises to a height in excess of 138 m OD. Dunmurray Hill immediately to the north of Redhills, reaches 234 m OD and Grange Hill (also known as the Chair of Kildare) reaches 226 m OD. These three hills are separated from the Hill of Allen (202 m OD) by almost 3 km of lower ground (92 m OD).”

Figure 1.1 shows a 3-D view of the terrain of County Kildare.

1.2. Geology

The 2000 Waste Management Plan for County Kildare describes the geology of the County as follows:

“The bedrock geology of County Kildare can be divided into four associations based on lithological variation:

- Lower Palaeozoic slates, volcanic rocks and old red sandstone formations
- Silurian calcareous greywackes, siltstones and shales
- Tullow Granite Pluton
- Carboniferous Limestone”

Figure 1.2 shows the geology of the county.

1.3. Soil Association

The main quaternary sediments identified in County Kildare are gravel deposits, glaciolacustrine deposits, peat, till and alluvial deposits.

Figure 1.3 shows the generalised distribution of the soil associations in County Kildare.

1.4. Hydrogeology

The aquifer classification system approved by the Geological Survey of Ireland (GSI) categorises aquifers as:

- regionally important
- locally important
- poor

Each category is subdivided based on the value of the resource and hydrological characteristics. Figure 1.4 shows the GSI's Aquifer Classification Map for County Kildare.

County Kildare has extensive and valuable groundwater resources. The most important aquifer units are the sand and gravel deposits which overlie limestone bedrock in the central area of the County.

1.5. Groundwater Protection

The assessment of groundwater protection requirements is considered useful for the identification of areas with greater or lesser limitations concerning the suitability or otherwise of such areas for a potential waste facility. This discussion on groundwater protection is given in this context. It is noted that this type of classification is inappropriate for site-specific purposes, due to the lack of in-depth information available.

Groundwater vulnerability, as defined by the GSI, is the term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater could be contaminated by human activities. The factors used in assessing groundwater vulnerability include subsoil type and thickness and recharge type. The overall aim of a groundwater protection scheme is to preserve the quality of groundwater, for drinking water, surface water ecosystems and terrestrial ecosystems, for the benefit of present and future generations. Each zone is represented by a code which enables an assessment of the risk to groundwater, independent of any particular hazard or contaminant type. This assessment should be regarded as a guide in evaluating the likely suitability of an area for a proposed activity prior to site investigations. Table 1.1 indicates the vulnerability ratings for different aquifers.

Table 1.1: GSI Guidelines – Aquifer Vulnerability Mapping

Vulnerability Rating	Hydrogeological Conditions		
	<i>Subsoil Permeability (Type) and Thickness</i>		
	High Permeability (sand/gravel)	Moderate Permeability (e.g., sandy soil)	Low Permeability (e.g., clayey subsoil, clay, peat)
Extreme (E) ²	0.0 - 3.0 m	0.0 - 3.0 m	0.0 - 3.0 m
High (H) ²	> 3.0 m	3.0 -10.0 m	3.0 - 5.0 m
Moderate (M) ²	N/A	>10.0 m	5.0 - 10.0 m
Low (L) ²	N/A	N/A	> 10 m

Notes:

1. N/A = not applicable
2. release point of contaminants is assumed to be 1 – 2 m below ground surface

The “County Kildare Groundwater Protection Scheme” was completed in 2004. Figure 1.5 illustrates the different vulnerability classifications for the County.

Groundwater quality from the highly permeable aquifers of County Kildare is generally excellent. Groundwater from these aquifers tends to be very hard, a characteristic which, although beneficial to health, can cause problems to pipes, hot water systems and some industrial processes. Groundwater yield from the less permeable aquifers is naturally poor and is often characterised by low pH values and high concentrations of iron, manganese and sulphates. These are naturally occurring in the groundwater in these areas and can be attributed to the bedrock through which the water has passed.

Many aquifers in County Kildare are vulnerable to pollution. Water-bearing glacial deposits (sand and gravels), particularly where the water table is shallow, can be at risk from land-spreading of fertilisers or septic tank effluents. Aquifer vulnerability could be increased by activities such as quarrying and mining or excavation works, where some of the natural protection provided by overlying soil is removed. Human activities affect the natural purity of groundwater so that groundwater quality varies locally. Since June 1992, all of the County’s public groundwater sources provided water which satisfied the European Community Regulations of 1988. Several abstraction points have nitrate levels close to EC maximum allowable concentrations (MAC). These high levels are probably due to diffuse impacts by fertilisers on the groundwater.

Based on groundwater vulnerability information, a land classification can be made concerning suitability for landfill. For example, an overriding factor for landfill suitability is the presence of karst features, which normally indicates extreme vulnerability for groundwater due to rapid throughput. In karst areas, polluted surface water in sinking streams can recharge aquifers with no attenuation. The siting of a waste disposal site in karst areas poses a greater risk to groundwater quality than if it is located over a poor aquifer. The greatest risk occurs when the landfill is in the catchment area of a public or major industrial groundwater supply.

Therefore, this classification involves the exclusion of regionally important aquifers and is shown on Figure 1.5. However, due to lack of depth-to-bedrock information and accurate information on aquifer boundaries, no area can be completely discounted at this stage. Although Figure 1.5 identifies areas with greater or lesser limitations, its use for site-specific purposes is inappropriate. Evaluation of specific sites will require further and more detailed assessments.

For a contained waste disposal site, the most suitable bedrock types are the finer-grained variety such as slates, shales, mudstones and siltstones, preferably overlain by clayey glacial till or clays. In County Kildare these rock types are not widespread. A more common scenario in County Kildare is limestone bedrock covered by a thick sand and gravel aquifer. Much of the land is low-lying and the water table tends to be relatively shallow. In some cases, a thin sand and gravel covering lies on karstified limestone or fractured sandstone. In this scenario the bedrock often exhibits secondary permeability and this will encourage rapid contaminant movement, particularly when the overlying sand and gravel is clean and well sorted. These sites constitute the major aquifers in County Kildare and are the most vulnerable to pollution. The Geological Survey of Ireland has published a response matrix for the location of new landfills. Table 1.2 summarises the response matrix for the location of landfills on different classifications of aquifers.

Table 1.2: GSI Guidelines - Response Matrix for Landfills

Vulnerability Rating	Resource Protection					
	Aquifer Category					
	Regionally Important (R)		Locally Important (L)		Poor Aquifers (P)	
	Rk	Rf/Rg	Lm/Lg	LI	PI	Pu
Extreme (E)	R4	R4	R3 ²	R2 ²	R2 ²	R2 ¹
High (H)	R4	R4	R3 ¹	R2 ¹	R2 ¹	R1
Moderate (M)	R4	R3 ¹	R2 ²	R2 ¹	R2 ¹	R1
Low (L)	R3 ¹	R3 ¹	R1	R1	R1	R1

Aquifers are classified in the different categories based on the following classification:

- **PI** Bedrock aquifers which are generally unproductive except for local zones
- **Pu** Bedrock aquifers which are generally unproductive
- **Lg** moderately productive aquifer - sand/gravel aquifers
- **Lm** Bedrock aquifers which are generally moderately productive
- **LI** Bedrock aquifers which are moderately productive only in local zones
- **Rg** aquifer which is sufficiently productive to be able to yield enough water to boreholes or springs to supply major regional water schemes
- **Rk** Karst aquifers
- **Rf** Fissured aquifers

Four levels of response (**R**) to the risk of a potentially polluting activity are proposed:

- **R1** acceptable subject to normal good practice
- **R2**a,b,c acceptable in principle, subject to conditions in note a,b,c, etc. (the number and content of the notes can vary depending on the zone and the activity)
- **R3**m,n,o,...not acceptable in principle; some exceptions could be allowed subject to the conditions in note m,n,o, etc. (notes as defined by GSI)
- **R4** not acceptable

1.6. Hydrology

The major rivers draining County Kildare are the Liffey, the Boyne and the Barrow. The Liffey rises in the Wicklow Mountains, and flows west, and then to the north at Kilcullen. It meanders through Kildare before turning east towards Dublin. The Liffey drains a catchment of 1,122 km² above Islandbridge Weir, Dublin. The catchment of the Liffey in County Kildare is 631 km².

The Barrow flows through part of the western side of County Kildare. It rises in the Slieve Bloom Mountains in County Laois and flows in a southerly direction. This river has a total catchment of 3,068 km², of which 838 km² lies in County Kildare.

The River Boyne rises near Newburyhall, Carbury in Kildare. The upper catchment area of the River Boyne and its tributaries, including the River Blackwater, drain the northern area of County Kildare. Approximately 8 % of the Boyne catchment lies within County Kildare. This amounts to 216 km² of the total catchment of the Boyne (2,700 km²).

Annual rainfall averages for County Kildare vary between 746 mm and 932 mm. The higher rainfall averages generally correspond to elevated areas. For example, at Pollaphouca (elevation 174 m OD) the annual average rainfall is 932 mm, the highest recorded annual average. The highest monthly averages occur between August and January.

Figure 1.6 illustrates the different catchments areas in County Kildare.

1.7. Water Quality Management Plans

The production of Water Quality Management Plans on a river catchment basis is provided for under Section 15 of the Local Government (Water Pollution) Act 1977 and subsequent amendments. The Plans are required to take account of present and potential future beneficial uses and to set water quality objectives to meet and sustain these demands.

Kildare has been involved in a number of river protection schemes including:

- The Three Rivers Project - a catchment monitoring and management project for the Boyne, Liffey and Suir river systems
- South East River Basin District (SERBD)
- Eastern River Basin District (ERBD)

The South East River Basin District (SERBD) project commenced in 2002 and is due for completion in 2006. The € 8.25 million project has been developed under the National Development Plan. The SERBD comprises hydrometric areas 11 - 17 encompassing the Owenavorragh, Slaney and Wexford Harbour, Ballyteigue-Bannow, Barrow, Nore, Suir and Colligan-Mahon catchments covering approximately one-fifth of the country. There are thirteen local authorities participating in this project, including Kildare County Council.

The Eastern River Basin District (ERBD) project has been established under the requirements of the Water Framework Directive. The principal aim of this project is to establish a water quality management plan for the district, which will be adopted by the thirteen local authorities participating in the project. The lead authorities are the County Councils of Kildare, Meath, Wicklow and Dublin City Council, which also manages the contract for the project.

The area of the ERBD takes in all or part of counties Cavan, Dublin City, Dún Laoghaire-Rathdown, Fingal, Kildare, Louth, Meath, Offaly, South Dublin, Westmeath, Wicklow and Wexford. It encompasses Hydrometric Areas 7, 8, 9 and 10, which include the rivers Boyne, Liffey, Nanny, Delvin, Vartry and Avoca and the canals, which pass through County Kildare.

The main water features included in the study are:

- 16 distinct river basins
- approximately 500 lakes - 20 of which are greater than 10 hectares in area
- 2 canal systems - combined length 200 km
- 120 km of coastline
- 28 reservoirs

It is the aim of the ERBD project to have the Management Plan completed by 2008.

1.8. Mineral Resources

In County Kildare the mineral resources are concentrated in the slopes of the eastern upland and the central upland (Chair of Kildare) areas, and in some parts of the lands to the east and south east.

Deeper sand and gravel deposits are typically found in the east of the County, while rock quarrying commonly takes place on the eastern uplands and in the Chair of Kildare.

It is the policy of Kildare County Council's County Development Plan "to safeguard resources by seeking to prevent incompatible land uses that could be located elsewhere, from being located in the vicinity of the resource, since the extraction of minerals and aggregates is resource based".

Under Section 261 of the Planning and Development Act 2000, registration of all operating quarries was required before the 24th April 2004. This is intended to bring all quarries within the planning system, including those which have claimed exception because they were operating before the 1963 Planning Act. This is intended to deal with concerns regarding unauthorised sand and gravel quarries in the country.

1.9. Infrastructure

The following section of the Plan describes the basic infrastructure supporting the County, which includes:

- road network
- railway network
- ports and navigable waterways
- municipal water supply and sewerage services

1.9.1. Road Network

A network of national, regional and County roads service County Kildare, as shown on Figure 1.7.

The total length of National Primary Routes in the County is 136 km, which includes a number of important transportation routes. These are:

- N4 (Dublin – Galway)
- N7 (Dublin – Cork/Limerick)
- N9 (Naas – Waterford)

The 2000 – 2006 National Development Plan identifies the need for major investment in road schemes throughout Ireland, and in County Kildare in particular.

Table 1.3 details the road schemes constructed in County Kildare in 2003 and 2004.

Table 1.3: Road Schemes Completed in County Kildare in 2003 – 2004

Scheme Name	Description
M4 Celbridge Interchange	Provision of a new interchange on the M4 Lucan/Kilcock Motorway, and 4 km of associated link roads serving Celbridge, West Leixlip and employment facilities in the area. The scheme opened to traffic on 3rd February 2003.
Kildare Bypass	The M7 Kildare By-pass was officially opened in December 2003 and involved the construction of 13 km of new motorway by-passing Kildare Town. It also included 12 km of minor road realignment, two interchanges at Kildare and Mayfield, three underpasses and four over passes.
Monastervin Bypass	The M7 Motorway was officially opened on 8 th November 2004. This stretch of the M7 links the Kildare Bypass to the Portlaoise Bypass, which completes the motorway route from Naas to Portlaoise.

Table 1.4 details the road schemes under construction in County Kildare in 2005.

Table 1.4: Road Schemes under Construction in County Kildare in 2005

Scheme Name	Description
N4 Kilcock/Kinnegad Bypass	Motorway running from the M4 at Kilcock to west of Kinnegad on both the N4 (to Mullingar/Sligo) and N6 (to Galway). Construction commenced in May 2003. The completed project will be tolled.
N7 Naas Road Widening	This Design & Build contract will involve the widening of 14 km of dual carriageway and the construction of four new interchanges, two pedestrian footbridges and a new local road linking Castlewarden to Kill, Johnstown and Naas.

A number of significant schemes are also being advanced which will improve the regional and County road network. In particular, grant funding which is currently forthcoming from the “Strategic Roads” and “Special Grants” Schemes will result in substantial improvements to the regional network. The ongoing five-year programmes will greatly enhance the quality of the County road network. The “Development Contribution Scheme” will also enhance funding arrangements in the future.

1.9.2. Railway Network

The railway network makes a significant contribution to the economic activity of the County. The three main lines are:

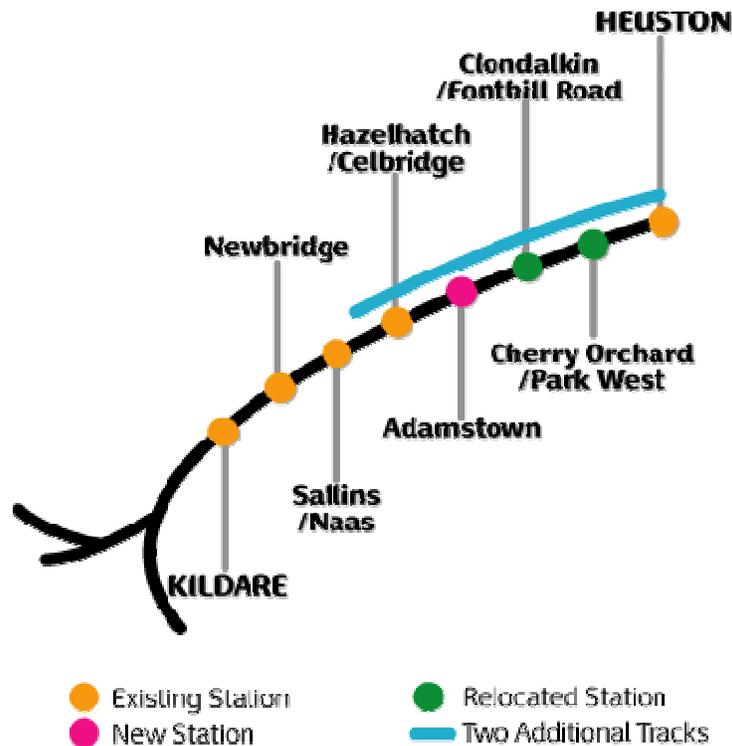
- (i) Dublin – Limerick/Cork
- (ii) Dublin – Mullingar – Sligo
- (iii) Dublin – Carlow – Kilkenny – Waterford

There are railway stations at Newbridge, Kildare, Athy, Maynooth, Leixlip, Celbridge, Sallins/Naas, Monasterevin and Kilcock. The demand for these services, and particularly the commuter services, has increased. This is due to increasing populations in the towns served, and to changing patterns of commuting and economic activity. The National Development Plan identified the 32-km route between Dublin's Heuston Station and Kildare as a major national growth corridor that will require significant upgrading to meet the transportation needs of the communities living along the route. Consequently, Iarnród Éireann has developed the Kildare Route Project, which envisages meeting this demand by increasing the capacity and frequency of trains serving the route. The project will:

- allow for the provision of more frequent and larger trains along the route
- increase the capacity of the line to allow up to six commuter trains will run along the route per hour at peak times
- upgrade, enlarge and relocated stations which will facilitate better access for rail users.

Figure 1.8 outlines the proposed improvements for the Dublin – Kildare line under this scheme (Source Iarnród Eireann).

Figure 1.8: Kildare Route Project



1.9.3. Ports and Navigable Waterways

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

1.9.4. Municipal Water Supply and Sewerage Infrastructure

Waste Water Treatment Facilities

There are approximately 41 waste water treatment facilities operating in County Kildare. The main facilities are Leixlip and Osberstown. All municipal sludge arisings within the County are transported to one of these two facilities for de-watering and anaerobic digestion.

There are a number of proposed waste water schemes in the newly adopted County Development Plan. The main schemes are outlined below:

- Kildare Town Sewage Treatment Plant
- Upper & Lower Liffey Regional Sewerage Schemes
- Rathangan Sewerage Scheme
- Athy Sewerage Scheme
- Milltown Sewerage Scheme

Water Treatment Works

There is only one major water treatment works situated in the County. This is located at Ballymore Eustace. The sludge generated at this treatment works is managed by Dublin City Council and disposed of at the KTK landfill in Kilcullen.

A report entitled "Water Services Investment Programme – Assessment of Needs 2007 - 2012" outlines the need for the following schemes:

- North East Kildare Regional Water Supply Scheme
- Construction of Water Treatment Plant at Srowland
- Pipeline from Ballymore Eustace
- Ardscull Reservoir and pipeline to Athy
- the development of wellfields for the extraction of groundwater at Rathangan, Monasterevin, Robertstown and Johnstownbridge

The Public Water and Sewerage Small Schemes Programme was introduced to provide funding for small public water and sewerage schemes in areas with clearly identified local needs. In March 1997 the Small Schemes Programme was extended to include all public schemes with an estimated cost of € 317,434. This figure increased to € 634,869 in 2000. The design, planning and construction of such schemes are the responsibility of the local authority under the Rural Water Programme. A number of schemes within the County have received funding from this scheme.

1.10. Hospital and Healthcare Services

On 1st March 2000, the Eastern Regional Health Authority became the statutory body with responsibility for health and personal social services for the 1.5 million people who live in Dublin, Kildare and Wicklow.

Three Area Health Boards were also established on 1st March 2000 – the South Western Area Health Board, the Northern Area Health Board and the East Coast Area Health Board. Within their own areas, they are responsible for delivering the services that were previously provided by the Eastern Health Board.

The Health Service Executive was established as the unitary body managing the Irish Health Service on 1st January 2005. The Health Service Executive (HSE) South Western Area extends from Dublin inner city south of the River Liffey, to South County Dublin, and to all of County Kildare and West County Wicklow.

The healthcare needs of County Kildare are serviced by two main hospitals: Naas General Hospital, and St. Vincent's, Athy. Naas General Hospital has a total of 196 beds. St. Vincent's has 224 beds.

In addition to these hospital facilities, there are 23 health care facilities within the County. These are listed in Table 1.5. Each hospital and health care facility is serviced by a private waste collection service.

Table 1.5: Health Care Facilities in County Kildare

Location	Number of Waste Collections per Month
Aishling House Maynooth	1
Athy	2
Carbury	1
Celbridge	2
Clane	1
Derinturn	1
Kilcock	1
Kilcullen	1
Kildare	2
Kill	1
Kilmeague	1
Leixlip	1
Maynooth	1
Moat Mall, Naas	2
Monread Industrial Estate	1
Newbridge Road, Naas	2
Newbridge	2
Sarot Road	1
Naas Day Care, Newbridge Rd	1
Rathangan	1
St. Vincent's Hospital, Athy	2
Tuas Nua	1

1.11. Population and Settlement

The Central Statistics Office (CSO) published population and migration estimates for the year 2003. These figures for 2003 are projections of the 2002 census. The population in County Kildare in April 2002 was 163,944 compared to 134,992 in April 1996. This increase represents a growth of approximately 28,952 persons or 21.4 % over the six-year period. Figure 1.9 illustrates the increase in population in County Kildare from 1971 – 2002 (source: CSO, 2002).

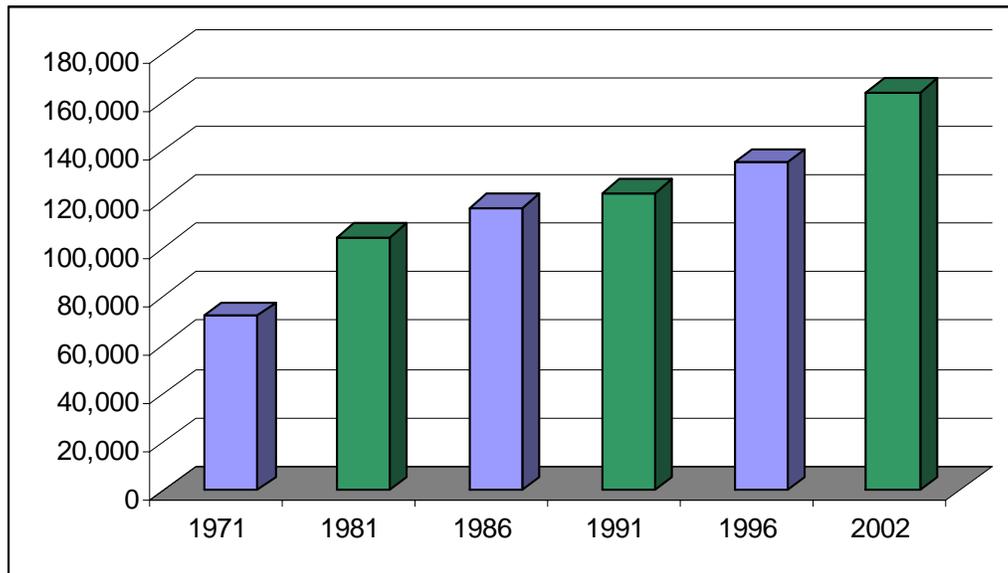


Figure 1.9: Historical Population of County Kildare 1971 - 2002

1.11.1. Patterns of Population Growth in the County

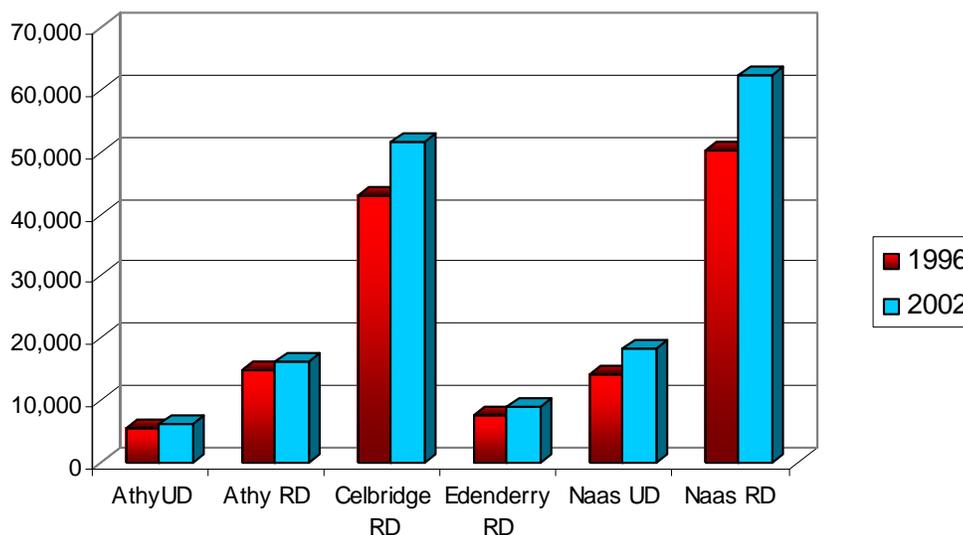
Kildare can be divided into six districts:

- Athy Urban District
- Athy Rural District
- Celbridge Rural District
- Edenderry Rural District
- Naas Urban District
- Naas Rural District

Figure 1.10, overleaf, illustrates the population distribution within the County.

Population change in the County is primarily influenced by proximity to the Dublin region. Naas Urban District, within the commuter influence of Dublin, grew by 30 % in the period 1996 - 2002. Even towns previously considered outside the Dublin commuting belt have shown considerable increases. Athy Urban District grew by 14 % (source: Kildare County Development Plan 2005 – 2011).

Figure 1.10: Population Distribution in Kildare 1996 - 2002



The Regional Planning Guidelines for the Greater Dublin Area set out a strategy for development in two main areas:

- metropolitan area, of which Celbridge, Kilcock, Leixlip and Maynooth
- hinterland which included the remainder of County Kildare

The Regional Planning Guidelines estimate that an additional 14,360 households will be constructed within the County during the period 2002 – 2010. The household figures used in this Plan are based on those in the County Development Plan, but are also informed by the Regional Planning Guidelines.

1.11.2. Household Numbers

In 2002, the number of private households within the County was 50,477, compared to 39,041 households in 1996. This represents an increase of 22.6 %. The average number of persons per private household is 3.2. The 2005 – 2011 County Development Plan sets out the projected housing growth rate for 2002 - 2011, as given in Table 1.6 below.

Table 1.6: Projected Housing Growth Rate 2002 - 2011

Area	Population 2002	Private Households 2002	2002 – 2011 Households
Naas, Newbridge, Kilcullen	42,472	13,360	7,343
Celbridge Rural District	51,622	15,306	5,393
Kildare - Monasterevin	11,446	3,575	4,167
Athy & Remainder Area*	42,839	13,106	3,560
Clane	5,179	1,639	631
Dublin Border	10,386	3,221	1,469
County	163,944	50,207	22,563

* housing growth allocation, with respect to the County Development Plan, between the town of Athy and remainder of the County will be subject to review in the light of progress on the M9 development, and emerging patterns of urban development in the south of the County and in Carlow

The County Development Plan estimates that the population of County Kildare in 2011 will be 203,000. This will represent a 50 % growth over 15 years. Figure 1.11 illustrates the distribution of housing numbers within the six electoral districts.

1.12. Tourism

The 2000 – 2005 Waste Management Plan describes tourism in Kildare as follows:

“Kildare has a worldwide reputation for its equine industry arising from the County’s concentration of stud farms, equestrian centres and race courses. Other activities which attract tourists included the excellent angling facilities“

In 2003 the Midland Region was host to 828,000 overseas tourists, which compares to 762,000 in 2002. This generated revenue of €310 million within the Region.

Table 1.7 and Table 1.8 show a County-by-County breakdown in the number of tourists visiting the Midland Region, and the revenue generated (Source: Bórd Fáilte 2004). Figure 1.12 illustrates the data

Table 1.7: Overseas Tourism to the Midlands

	Total (000s)	Britain	Europe	N. America	Others
Kildare	151	88	30	24	10
Laois	36	25	5	5	1
Longford	37	25	5	6	1
Louth	79	46	18	11	4
Meath	98	52	22	17	7
Wicklow	268	135	72	43	18
Offaly East	41	26	9	4	2
Westmeath	118	61	31	19	7

Table 1.8: Revenue Generated by Overseas Tourists

	Total (€m)	Britain	Europe	N. America	Others
Kildare	70	30	23	10	7
Laois	9	6	2	1	-
Longford	15	11	1	3	-
Louth	27	14	8	5	1
Meath	32	17	7	6	3
Wicklow	89	44	33	9	3
Offaly East	23	10	3	9	-
Westmeath	45	24	13	6	2

1.13. Agriculture and the Bloodstock Industry

There are approximately 112,518 hectares of farmed land in County Kildare, with approximately 29,500 hectares under tillage, and the balance in grassland. Table 1.9 details the breakdown of agricultural activities within the County (Source: Teagasc - County Kildare County Business Plan, 2003).

Table 1.9: Breakdown of Farming Activities within County Kildare

Farming Activity	% ^{Note 1}
cattle	75
tillage	24
sheep	22
dairy	7.4
pigs	0.4

Note 1: many farms have more than one farming activity and are therefore counted in more than one group

Livestock is by far the most dominant farming activity within the County. Kildare has a large concentration of stud farms. The Irish Field Directory 2003 lists a total of 143 studs. The nursery stock industry is also expanding, with an estimated 35 nurseries in the County, generating approximately € 12.5 million each year (source: 2005 –2011 County Development Plan for County Kildare).

1.14. Construction and Development

The total value of the construction output in Ireland in 2001 was € 20.1 billion. The Mid-Eastern Region, which consists of Kildare, Meath and Wicklow, had an 11.4 % share of this total, generating € 2.3 billion.

Table 1.10 gives a breakdown of the different areas of construction output within the Mid-Eastern Region.

Table 1.10: Construction Output in Mid Eastern Region

Type of Construction	€million	% of National Total
residential	1,374.6	60.1
private non-residential	1,812.4	16.4
productive infrastructure (roads, energy etc)	394.6	17.3
social infrastructure (education, health)	142.3	6.2
total	2,285.6	100 %

Source: Construction Industry Review 2001 Outlook 2002 - 2004

The 2005 – 2011 County Development Plan estimates that a further 22,564 houses will be constructed within the County during the period 2002 – 2011.

1.15. Industry

Almost 60 % of total employment in Kildare is in companies that are part of the technologically advanced sectors, compared to 45 % nationally. The service sector has also continued to grow. It is now the most rapidly growing sector of the economy in Kildare, as outlined in Table 1.11 below.

Table 1.11: Change in Employment of Persons Resident in County Kildare*

Sector	Kildare 1996		Kildare 2002	
agriculture, forestry & fishing	3,633	7.0 %	3,096	4.2 %
mining, quarrying & turf production	370	0.7 %	402	0.5 %
manufacturing industries	10,238	20.0 %	12,085	16.3 %
electricity, gas & water supply	426	0.8 %	478	0.6 %
building & construction	3,928	7.6 %	7,665	10.3%
transport, communication & storage	2,572	5.0 %	3,941	5.3 %
commerce, insurance, finance & business services	10,921	21.3 %	23,209	31.2 %
public administration & defence	5,024	9.8 %	5,696	7.66 %
other	14,097	27.5 %	17,775	23.9 %
all industries	51,209		74,347	

1.16. Land Use

Land use within Kildare was extracted from information supplied by the CORINE Land Cover Project. This is given in Figure 1.13, overleaf. The CORINE Project is a compiled digital database of land cover in Ireland. The GIS format is at a scale of 1:100,000, in accordance with the EU's CORINE Land Cover methodology and naming convention.

1.17. Designated Environmental Areas

The Special Area of Conservation (SAC) and Natural Heritage Area (NHA) datasets include a range of sites designated under EU Directives or in the process of designation. These are illustrated in Figure 1.14.

* County Development Plan 2005 – 2011