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5.1 National Context

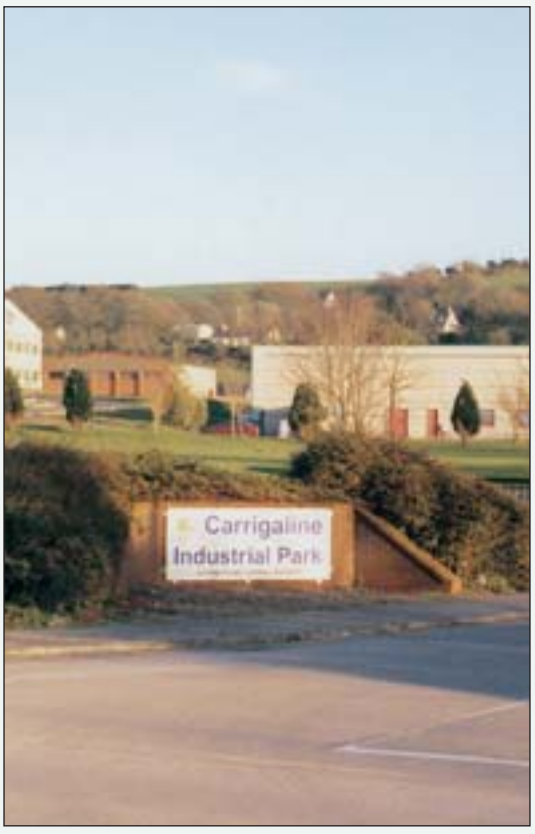
The economy of Cork is influenced greatly by the performance of the national economy, which has grown extremely quickly in recent years. The following table illustrates the extent of this growth.

Table 5.1 **National Growth**

Year	GDP %	GNP %
1997	10.8	9.4
1998	8.6	7.9
1999	10.8	8.2
2000	11.5	10.4
2001	6.8	5.2

Source: Ireland - Stability Programme Dec. 2001

The scale of the above economic growth, which is the highest in the EU, has resulted in the Irish economy expanding by 51 per cent since 1995. In 1987 income per head in Ireland was approximately two-thirds of the EU average level. In 1993 Ireland still qualified for EU aid under the cohesion package agreed under the Maastricht Treaty to raise the GDP of countries with a per capita GDP of less than 90 per cent of the EU average. By 1999 Ireland had exceeded the EU average per capita GDP.



In 1987, when total employment was 1.11 million, there were fewer employed in Ireland than in 1926. However, by 1998 the numbers at work had soared to 1.46 million showing a 32 per cent increase. In the same period the unemployment rate more than halved and this trend has continued to its current rate of less than 4 per cent.

Furthermore, employment growth has been in a broad range of sectors with Ireland having by far the largest growth in industrial employment in the EU, a high proportion of growth in permanent jobs, and a higher proportion of growth in full-time rather than part-time employment.

Table 5.2 **Economic Indicators**

Ireland's Economy	1991/1992 %	2000 %
Per Capita GDP/EU GDP	68.7	106.0
Inflation	3.2	5.6
Unemployment	14.7	4.3
National Debt/GDP	98.0	38.6

Many international economic commentators attribute the "Celtic Tiger" performance of the Irish economy over recent years to the high levels of EU financial transfers. However, while the level of EU support is one of the key elements contributing to the performance of the economy, it needs to be considered in context. It is acknowledged by the OECD in its annual economic survey on Ireland (1999) that over the past decade Structural Fund receipts from the EU may have raised growth by between one quarter and one half of one per cent annually. In fact the ESRI's own analysis suggests that the Single Market initiative was a far more important economic growth promoter, being responsible for 3 times more growth than the structural funds.

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Some of the other main factors that are generally accepted as having contributed to the growth of the Irish economy include the following:

- Stabilisation of public finances since 1987.
- Social partnership incorporating three-year centralised wage agreements.
- Significant and continued investment in education and especially third level education including technological education and training.
- Foreign Direct Investment (FDI)– sophisticated targeting of selected overseas industries and market sectors.
- Introduction of internationally competitive corporate tax rate (12.5% from 2003).
- Membership of EMU.
- The discipline imposed by the five-year community support framework to promote a useful form of long term planning for the economy.
- Rapid expansion of the labour force, increased participation and population growth.

As one of the founder members of the EMU and the only English speaking one, Ireland can offer significant advantages including the elimination of exchange rate risk transaction costs, consistently lower interest rates and a generally more predictable economic environment in which to operate. Ireland has thus become an attractive location for Foreign Direct Investment (FDI).

5.2 Local Context

Historically, Cork City has functioned as the Capital of Munster, and an international gateway to the South West Region. The City is regarded as the key (but not sole) driver of the prosperity of a very wide region. Cork is also the second largest city in the State.

In the last 30-35 years, the City-Region has evolved through cycles of relative growth and recession, especially the slump in the 1980s and early 1990s, to the current period of unprecedented economic growth. The present boom represents a degree of challenge and opportunity, as well as intense pressure that has not been felt before. The City-Region is prosperous and this has lead to the growth of satellite towns/suburban centres in what is becoming Metropolitan Cork. The larger Ring Towns further afield are showing varying rates of growth. They are generally prospering, at present, despite their greater dependence on an agricultural hinterland.

Cork City is not generally perceived as having kept pace with the improvements evident in other cities in Ireland or in comparable cities elsewhere, and this trend must be addressed.

In response to economic growth and likely expectations over the next 20 years, both Cork and the City-Region will need to adapt quite significantly in order to effectively compete in a rapidly changing international market. Trends towards decentralisation of power, urbanisation and liberalisation of global markets have established cities and their regions as the engines of growth in the global economy. To achieve its aspiration of 'going for growth' and building on its remarkable strengths, Cork will need to re-double its efforts to -

- Compete for the investment of capital technology and management expertise.
- Compete in the provision of IT and communications, infrastructure and services.
- Compete in attracting new industries and businesses.
- Compete in the pricing and quality of utilities and services.
- Compete in producing and attracting an appropriately educated labour force.

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The challenge to be faced is about accommodating the growth in population envisaged for Cork and the City Region, and the jobs that are driving the escalating rates of in-migration. Critically, the challenge for the Strategic Plan is also to accommodate the growth in a sustainable manner that is complementary to the aspirations of both investors and local communities. In this respect, the role of Cork City centre, the wider Cork City-Region and the key Ring Towns in adapting to the demands of the economy and society is fundamental. Successful regions throughout the world depend on a mutually inter-dependant balance of a thriving, buoyant and attractive key City, and an equally successful and diverse network of satellites and free standing market towns, which, in combination, offer a varied and interesting urban and rural "product" which will attract investment while being increasingly able to improve the quality of life for residents and businesses.

In responding to the challenge of potential continued growth and prosperity the pivotal role of a thriving City region needs to be both recognised and accommodated. Economically buoyant and physically attractive major urban areas are the key drivers of regional economies in the modern world. At present, much of the new investment for property and business development is going into the periphery of Cork - the Airport, Douglas, Carrigaline, Little Island, Mahon and Ballincollig. A successful spatial development strategy will bind these areas into a Metropolitan Cork, which will have excellent infrastructure. Effectively, Metropolitan Cork will become the key driver and will truly enable Cork to function more effectively offering investors a properly integrated and well connected pattern of economic development. Development should seek to capitalise on this "natural" economic growth centred on Cork and its immediate hinterland, and there is clear evidence that both investors and businesses wish to locate in or near central Cork. This is where development is currently taking place. This trend will continue as the area experiences significantly higher future growth in finance, banking and services, which are located mainly in major cities. Growth in education will also locate relatively centrally. These sectors require access to an extensive, skilled labour market through close proximity to nearby housing and public transport links (mainly rail) together with a more extensive wider labour market area.

There is scope for some peripheral housing and economic development. This economic activity will take the form of smaller scale manufacturing and service businesses performing a more localised service function. The spatial development strategy will need to incorporate quite large scale expansion in some of the Ring Towns with better locational characteristics and therefore in a position to attract new investment.

An important component of the future strategy underpinning the future of the Cork City Region, will be to correctly identify the key economic development themes that are apparent in the City-Region economy, and on these foundations support business development and a thriving economy with a development programme that will deliver the necessary property products. These two points are addressed overleaf.

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Economic Development Projections

5.3 Key Economic Development Themes

The recent economic achievements which have underpinned Ireland as a competitive location for international commerce including Foreign Direct Investment have resulted in Ireland being the selected location for:

- 7 of the world's top 10 software companies.
- 9 of the world's top 10 pharmaceutical companies.
- 10 of the world's top 15 medical device companies.

Ireland is now perceived as the European Market leader in software, with 40 per cent of all PC packaged software sold in Europe (including 60 per cent of all business application software) being produced in Ireland.

As part of the above achievement, Ireland has attracted 27 per cent of all US manufacturing investment in Europe and 40 per cent of all US electronic investment in Europe since 1980.

The Role of Education
Investment in education in Ireland has played a key role in fostering the development and sustaining the current knowledge based economy. The quality of Ireland's education is exceptionally high. In the ten years, up to 1998, the number of students in full- or part-time third level courses increased by 72 per cent whilst the number of post graduate students more than doubled.

In particular, 60 per cent of third level students graduate with engineering, science, or business degrees with a significant number of students being proficient in more than one language. For example, Ireland can boast the highest number of computer science graduates per 100,000 in the OECD. In fact, the number of software engineers has increased from 500 in 1996 to a projected 2,400 by 2002.

The availability of a well educated, highly skilled young workforce represents an important competitive advantage for Ireland and particularly for Cork to offer employers and inward investors

Clusters of Excellence
The IDA's current strategy in relation to job creation is to create clusters of excellence that it describes as areas in which groups of companies, corporate and academic research facilities, venture capitalists and others would congregate to foster innovation and entrepreneurship. They cite the National Micro Electronics Research Centre (NMRC) at UCC as an excellent example of what can be achieved. The IDA emphasise the need to use our skills in the area of educational research and the importance of building

better links between industry and our educational institutions. Counting job numbers is no longer the best measure of success. High value jobs and the regional location of these are now the important measures of achievement in an economy with near full employment.

Recent Developments in Cork City-Region
Over the last two to three years there has been a significant amount of new commercial and industrial development in the Cork City-Region, particularly round the outskirts of Cork City. Significant road improvements (e.g. completion of the Lee Tunnel linking the South Ring Road with the Dublin and Waterford arterial routes - N8 and N25 respectively) have opened up new development areas at strategic locations. There is now a growing supply of office parks around the boundaries of the City.

An important component of demand is the substantial growth in technology-based companies utilising information and communication technologies (ICTs) as a key business platform. Another component of future potential market demand is the emergence of Internationally Traded Services (ITS). With the fairly limited size of Ireland's local market, the activity of exporting products, goods and services will be critical for much of the future growth.

The primary employment growth sectors currently include healthcare, pharmaceuticals, Information and Communication Technology (ICT) and International Traded Services (ITS). Cork has been one of the primary foci for growth and innovation in these sectors with a substantial number of these industries locating in Cork. Cork City Region incorporates the third largest concentration of pharmaceutical companies worldwide.

Internationally Traded Services
The ITS sector in particular is viewed by the Irish economic agencies (Enterprise Ireland, Forfas, IDA) as constituting a key component in the further

development of Ireland's economy. This sector has major potential for creating extra wealth, exports and high quality employment.

The ITS 2007 Strategy produced by Enterprise Ireland points to the influence of the 'foundation' technologies of informatics and biotechnology enabling the growth of ITS activities in Ireland, particularly for Informatics; Digital Media; E-Business; and Healthsciences. ITS 2007 has a major regional focus, placing intervention as a necessity to draw future growth and development away from the Dublin area. Cork represents one of the key areas for focusing future growth of ITS sectors. For the ITS growth objectives to be met, key place development requirements include:

- The ability to exploit the commercial potential of research and development at Ireland's universities.
- Access to high bandwidth telecoms services at global competitive costs.
- Adequate transport infrastructure
- The availability of suitable accommodation - wired buildings and flexible lease arrangements.
- The availability of a high quality of life (good housing, education, social, sporting, entertainment and cultural amenities)
- The availability of a pool of skilled labour.

Techonology Hubs

One of the main infrastructure recommendations of ITS 2007 is the establishment of a number of technology hubs throughout Ireland. These hubs aim to generate a critical mass of high potential start-up companies that are high R&D and export performers. The other pre requisite for driving forward Cork's economy, based on the twin forces of technology and globalisation of markets, is the provision of broadband telecommunication services. The availability of competitively priced broadband international connectivity is a fundamental requirement for Cork businesses - in particular, for e-commerce, software, and multimedia businesses.

This established track record of furthering and facilitating the development of successful FDI businesses in Cork has been achieved through the co-operation of the development agencies, the local authorities and the local educational institutions and their research facilities. It is upon the foundation of these and other remarkable strengths that the Cork region will build its future.

Six Key Themes

Given this background, six key economic development themes have been identified which could underpin a planning and development strategy for the City Region and ensure that the local economy is in a position to aspire to achieve the sectoral economic projections as set out in the 'central forecast' (this and the demographic projections are discussed in the following chapter). The six themes are summarised briefly below.

- First, the Study Area should exploit the foundation technologies of semi-conductor design, informatics and biotechnology. These key enabling technologies will help to underpin the growth of knowledge-based activities. For example, the pharmachem base of the area provides an excellent infrastructure resource for addressing the opportunities being provided by the increase in outsourcing within the health sciences sector of core competencies such as R&D, manufacture, and sales. Equally, while Dublin is the focus for the development of a Digital Media District, Cork should begin to develop a cluster area for digital media activities.

- Second, in relation to high bandwidth telecoms networks, while Cork is connected to Ireland's backbone network (and will benefit when the backbone provision is enhanced from the current 2.5 Gbit to 40 Gbit), the local loop

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Economic Development Projections

access still needs to be addressed, and the most effective way of rolling out broadband services is to install the local access network to key cluster areas where there is a critical mass of users for broadband services. It will be important to ensure that small businesses, homes and schools gain access to broadband, as well as the large corporates.

- Third, the increased use of teleworking could be used as a means of reducing work-based trips and encouraging local employment opportunities in the more rural parts of the Study Area. The development of telecentres at strategic locations where mobile workers can utilise ICTs on a shared basis to undertake their work, should become a feature of the area. While it is unlikely that people will want to work at home full-time, increasingly many knowledge-based workers wish to work a couple of days a week at home or at neighbourhood telecentres.

- Fourth, the City Centre is the key asset for the City Region and its robustness needs to be sustained to ensure that it remains a driver of the area's economy. The re-use of vacant buildings should be a major priority and the move to a services-based economy will provide opportunity for re-use by leisure industries such as pubs and restaurants. The development of a new office zone (with perhaps financial inducements to attract major occupiers) will provide a major employment generator to help maintain the City Centre's image and sustainability. Digital media clusters tend to form within City Centre environments and a Digital Media District could be encouraged within Cork City Centre.

- Fifth, the university zone within the southwest sector represents a key driver of the area's future economy. This 'knowledge zone' has potential for expansion and, to encourage area regeneration, it needs to expand across the River Lee to the north. Knowledge sharing is best delivered through face-to-face contact, and therefore geographic proximity and interconnection play a key part in the exchange of ideas and transfer of innovation. While the university campus is the most appropriate location for fundamental (basic) research, applied research and development activities can be located off-campus and co-located at facilities such as innovation centres and science parks. It is important, however, that these locations are close to and easily accessible to the university campus.

- Sixth, as well as the attraction of FDI to enhance the local economic base, the growth of indigenous businesses should also be a high priority. With the strong emphasis on developing knowledge-based companies, the necessary property infrastructure needs to be in place. This means wired buildings with flexible lease arrangements to allow fast-growing companies to expand their office accommodation as appropriate. For start-up operations the provision of incubator facilities will be an important feature. For the established serviced office businesses such as the traditional professional activities (law, accountancy, consultancies, etc.) the ability to expand easily, in part, requires the availability of modern office accommodation at a range of prices in a variety of City or town locations.

5.4 Development Requirements

To facilitate this economic development, a range of property products will need to be brought forward. This will require partnership between various departments of the City and the County Councils, Irish inward investment agencies, and the private sector.

Manufacturing Floorspace - There will be significant changes in property provision for the manufacturing sector. There will be an improved quality of accommodation and a broad range of specific property types. There is also likely to be rationalisation of the older industrial areas, including possibly, the heavy engineering, metal production, and pharmachem production areas. These larger industrial areas will offer the scope of smaller scale business development and provision of mixed use development. Existing contaminants on-site normally entail relatively costly remediation works.

Warehousing Floorspace - To exploit Cork's growing role as a distribution node, modern warehousing space will be required. While the traditional industrial estates located round the south ring road and at Little Island offer mixed warehousing/commercial units, dedicated distribution parks providing the appropriate large sizes, heights, and specification of warehouse units are required. The transport focus of the airport provides a major opportunity for a high profile distribution park, which demonstrates Cork's international logistics capabilities. In addition, a distribution park located on the north or east side of the City (the gateway for Limerick and Dublin traffic), utilising the rail connection afforded by the area and the potential of the northern distributor road, could also provide a regional logistics facility for the City Region.

Business Parks - The letting success of the Cork Airport Business Park helps to demonstrate the demand for business park space in the area. Business parks are most likely to be edge-of-town, and future business park developments should be able to offer a choice of transport (including public transport links) and good access to the airport. This is likely to be more achievable in locations that are reasonably accessible to key transport nodes and existing settlements.

Technology Parks/Innovation Centres - The science and technology base of Cork is a key component for future growth, bringing high-skill, high-wage jobs. Innovation and new technologies are an essential element for creating new economic value, and Cork needs to ensure that it can accommodate such activity at appropriate locations. The Cork Business and Technology Park currently meets this demand. However, additional development land will be required over the Plan period for technology-based activities.

City Centre Offices - City centre office accommodation in Cork is at near 100 per cent occupancy. The City needs to significantly enhance its City centre office stock if it is to capture its share of international traded services. The International Financial Services Centre (IFSC) in Dublin provides a successful model for this aspiration. High density, large, open-plan, IT capable office space is a key requirement for Cork city centre. Cork must achieve a mix of uses centred around high density offices, supported by housing, leisure, and public transport facilities in order to achieve vitality and viability.

Local Office Centres - As well as the large city centre office supply, the City Region will have to offer small office space to accommodate local services provision. This may be located within the Ring Towns, Satellite towns at suburban or local centres, or at business parks. This smaller scale office provision will be for sizes of 50 square metres up to 500 square metres. It is forecast that indigenous office demand is going to increase significantly in the short to medium term, reflecting the national and regional growth in service sector activities.

Telecentres – Telecentres are serviced offices providing drop-in facilities for teleworkers living in the local area. For mobile workers who utilise information technology and 'hot-desking', the provision of a local telecentre for drop-in working, client meetings, and video conferencing, helps to reduce the extent of commuting to work and reduces the number of car trips. Telecentres are usually located on the edge of major metropolitan areas and within rural areas adjacent to key urban centres.

Incubator Centres - To support the growth of local start-ups, the provision of small, easy-in/easy-out space will be advantageous. Incubator space, which offers flexible, cheap and small space with shared services/space and business development support, is a means of addressing this requirement. Typically, units in an incubator centre will range from 20 square metres up to 300 square metres. Incubator space can be located at a variety of different locations.

5.5 Development Principles

Clearly, it is not appropriate to seek to attain the full range of property products throughout the Study Area. Development needs to respond to specific locational characteristics, the transport network, and fundamentally, market demand. Having said that, it is possible for supply-led initiatives to stimulate certain property market segments. It is important to encourage key sectors by means of a high quality supply of new space.

A number of key principles were identified, underpinning the location of future industrial and commercial floorspace in the Study Area. These are intended to provide indicative property development principles to guide the way in which planning strategies distribute the future pattern of development activity. The eventual delivery of the new locations to meet demand will be achieved firstly, through the zoning of appropriate locations that reflect demand requirements (current and emerging); secondly, through the infrastructure to make these locations capable of accommodating property development; and thirdly, in some cases, through advance build provision in order to secure FDI projects for Cork. The key property development principles can be summarised as follows:

(i) To create a new office district in Cork City centre to meet the large scale office requirements for the growing sectors.

(ii) To promote smaller scale office development, including local health, education and social services in the north City-Mallow axis in order to gain access to the large population catchment, to address social inclusion issues, and to draw benefit from the rail infrastructure serving the area.

(iii) To encourage further development of technology and innovation activities for technology-based companies that want to be located close to Cork Institute of Technology and University College Cork. There is also scope for technology and innovation activities in the City and sites such as the Docklands, Ballincollig town and the Killbarry area.

(iv) To encourage development of specialist distribution parks close to the airport and the main arterial route leading north out of Cork.

(v) To encourage further industrial and commercial development along the N25 corridor to Midleton and Carrigtwohill.

(vi) To encourage the location of major FDI manufacturing plants at large single user sites at key strategically located Ring Towns - Mallow, Fermoy, and Midleton, and smaller facilities at Bandon, Macroom and Kinsale.

(vii) To promote the development of incubator type facilities to support the clustering of business start-ups, the clustering of start-up activities should be focused at particular appropriate areas such as Ballincollig for technology-led activities, Cobh and Blackpool for creative industries activities, and Douglas for professional services; and finally

(viii) To provide for local office centres at the larger Ring Towns (e.g. Mallow and Fermoy) and Satellite towns (e.g. Ballincollig, Blarney and Cobh).

5.6 Tourism

In recent years Ireland has experienced an unprecedented level of growth and at a faster rate than most of its competitor destinations. The Cork/Kerry region is the most popular tourism area in Ireland outside Dublin, attracting more than one in four of overseas visitors to the country. In 1998 an estimated 988,000 foreign tourists visited County Cork - almost half being from Britain, with one in four from mainland Europe and one in five from the US. These visitors spent an estimated 4.86 million bednights in the County resulting in expenditure of close to 267 million. While Cork City and its immediate environs attracts the higher number of visitors, West Cork is the more popular tourist area within County Cork and would account for a greater number of bednights.

Irish residents, including Northern Ireland, accounted for an estimated 900,000 bednights in the area in 1998 (approximately 400,000 in Cork City). This indicates that the domestic market is responsible for approximately one third of all visitor bednights in the Study Area.

There are nearly 9,000 hotel beds in the Study Area, 45 per cent of which are in Cork City. The Study Area includes four main day visitor attractions which each attract over 100,000 visitors per year. Visitor numbers to Study Area attractions are increasing. Blarney Castle is by far the single most popular day visitor attraction, and is well established on touring itineraries, with a high proportion of visitors from overseas, especially from the US. Fota Wildlife Park is the next most important visitor site in terms of visitor numbers. A high proportion of these visitors are local or Irish residents. Cork City has few day visitor attractions – Cork City Gaol, the Gunpowder Mills and Shandon Cathedral – although the latter lacks interpretation. The Queenstown Experience (at Cobh), the Old Midleton Distillery, and Cork City Gaol have opened within the past 12 years and each has been successful in attracting a growing international visitor demand, and creating a reason to stop and visit in Cobh and Midleton. In addition to these attractions, the Study Area hosts a number of successful festival events - for example, Cork Jazz Festival, Ford sailing week, Kinsale gourmet week.

Taking account of the Study Area's current market position as a popular tourist environment, but without single key destination attractions such at Killarney or Kilkenny, and the prospect for continued tourism growth to Ireland, the estimated potential growth in bednights spent in the Study Area is from some 3 million at present to 5.6 million (the central scenario). There is considerable potential for Cork City to play a more important role, acting as an access gateway for the wider Cork/Kerry tourism area. The City has the potential to be far more attractive. Although it already hosts a number of events, the City lacks a brand identity, and offers little excitement or points of interest for tourists.

The wider Study Area is scenic, with a limited number of known attractions but generally lacks a strong identity as a tourism area. There is further scope to improve the tourist product in West Cork and widen the appeal of North and East Cork with the introduction of activity based holidays and an improved range of hotels, guest houses and self catering cottages, (which should be integrated with local activities).

SUPPORTING ANALYSIS

B

6.1 Introduction

This chapter summarises the population and employment projections for the Study Area over the Plan period, and the requirements of these projections in terms of land and property.

6.2 Projection Methodology

A long term, sustainable pattern of growth and development in the Study Area requires a balance of population and jobs in the future. An excess of population over jobs will encourage a return to high unemployment rates combined with longer distance out-commuting for job opportunities; conversely, an excess of jobs will lead to increased in-commuting and escalation of house price inflation as migrants compete for scarce housing resources. The need to achieve a balanced rate of both population and job growth is a fundamental theme of the strategy for Cork.

Clearly there is some longer term uncertainty as to the potential for continued economic growth at rates which have been achieved over the last few years. There is also a debate nationally as to the potential scale of population growth resulting from in-migration to Ireland. Population and economic change are closely linked. Economic growth both stimulates population growth (mainly, but not solely, through migration) and requires additional economically active people in order to sustain continued growth. An integrated approach to population and economic forecasting is essential, based on:

- Common macro economic assumptions.
- A realistic view of the scale of migration which can be sustained locally through growth in jobs.
- Cross checks which convert the projected population to a potential labour force which matches independently calculated employment change.

This integrated approach has been a cornerstone of the study methodology. For ease of explanation, however, population projections are described first and then the economic projections.

The output of this exercise is a series of projections of population, households and labour force on one side, and on the other, employment change distributed by economic sector. These forecasts then translate into requirements for additional housing and buildings for manufacturing, warehousing, offices, etc. In addition, the Strategic Plan will need to take account of retail and tourism development requirements, the operational requirements of the airport, the port, and provision of a full range of community facilities.

Thus, following the projection of population and economic activity, this chapter sets out broad guideline estimates for development requirements. These, in turn, are translated into land requirements. This exercise is described in the last section of the chapter.

6.3 Population Projections

Baseline

The population of the Study Area remained static at about 314,000 between 1986 and 1991. The natural increase of the population as a consequence of births was cancelled out by emigration from Cork. Between 1991 and 1996 the trend in out-migration halted and the population of the Study Area grew to nearly 325,000. Between 1996 and 2000 the consultants estimate that the population grew to 346,000.

The major change that is occurring is an accelerating trend of in-migration to Cork. This is a national trend and is partly driven by the return of Irish migrants. The birth rate is declining, so the growth which is taking place is largely the product of in-migration.

The underlying growth in the resident population of the Study Area is given an additional twist, when translating into numbers of households, due to the reduction in the size of households and the increased rate of household formation. This means that for any given level of population growth there will be even more new households. In the Study Area there were 99,365 households in 1996. By 2000 the consultants estimate that the number of households had grown to some 110,270.

6: Population & Employment Projections

Within the Study Area there are major growth differentials with sizeable migration flows between different parts of the area. This is a familiar picture of a central city, more or less stable in population, surrounded by rapidly growing suburbs and a rural fringe that shows elements of population decline alongside localised growth. Key points to note can be summarised as follows:

- The City of Cork had a steady loss of population from 1986 to 2000.
- Most of the Study Area's growth was concentrated in the suburbs, in Douglas, Carrigaline, Ballincollig, Blarney, Riverstown, Glanmire and Midleton.

The rural fringe lost population between 1986 and 1991 and gained little in the following five years. Between 1996 and 2000 however, it grew very rapidly - in absolute and percentage terms, almost as rapidly as the suburbs. Growth rates were generally high in the Ring Towns of Kinsale, Bandon, Macroom, Mallow, Fermoy and Youghal, but varied widely in their hinterlands.

Analysis of the age distribution of the Study Area population indicates that the population of the area is beginning to grow older. In the City, because there was population loss through migration of households, the population is relatively older than in the Study Area as a whole. The relatively old population structure implies that household formation growth and demand for new dwellings will be slower in Cork than relatively younger areas, for example the Galway and Dublin sub-regions.

Projections

Projection Model

The basic inputs to the population projection model are:

- The starting population, which is the age/sex structure of the Study Area derived from DED-level information from the last Census (1996).
- The fertility and mortality inputs from the 1999 Central Statistics Office (CSO) projections, with adjustments for locally registered births and deaths.

Total fertility is set lower than the national average to replicate local registrations, as is life expectancy. Mortality and fertility rates are already low. They are unlikely to increase and they cannot decline much further.

These components of the forecasts pale into insignificance against the uncertainty about future migration. The Study Area's migration history is closely related to the country as a whole. From 1986 to 1991, when the Republic lost migrants, so did Cork. From 1991 to 1996, when the Republic had a zero migration balance, Cork had modest migration gains. And since 1996, when the Republic has gained by migration, Cork has captured a substantial proportion of these gains. There is a policy debate at the national level about future levels of migration, so an important task is to explore future migration scenarios, and consequently three migration scenarios have been projected.

For each of these scenarios – in addition to population - estimates of the size of the labour force and the total number of households were calculated. The labour force estimates were obtained by applying CSO age/sex specific activity rates to the projected age/sex structures. For the household projections Study Area household headship rates were derived from the 1996 Census and applied without change to the projected age/sex structures.

Medium Migration

This first projection assumes steadily declining net migration from the recent average of 3,600 persons per year to 2,950 per year in the period 2001-2006; 2,200 per year in 2006-2011 and 1,450 per year thereafter. This is in line with the latest CSO national projections and the ESRI Mid-Term Review, which is considered to be the most plausible outcome and, as will be seen, it accords with the central employment forecasts. The results of this projection are illustrated in Figure 6.1. Further details are given in Appendix E. The medium migration scenario population projection is summarised in Table 6.1.

Growth in households will be more dramatic than population growth, rising to 159,600 in 2021, an increase of 45 per cent over the current level of 110,300. The labour force will rise 161,700 in 2000 to 206,500 in 2021.

High Migration Scenario

The high migration scenario projection assumes a continuation of current levels of net migration into the Study Area (3,600 per year) until the end of the Plan period. As such it is in line with the Report of the Inter-departmental/Agency Group on Immigration Policy. It should be noted, however, that these sources had a medium term view extending to 2006 only. It is debatable whether current exceptional levels of economic growth and international migration can be sustained for 20 years. The results of this projection give a population of 380,400 by 2006, 409,000 by 2011 and 458,900 by 2021. Under the high migration scenario the number of households in 2021 is projected to be 172,800 and the labour force to be 227,700.

Figure 6.1
Population Forecasts (Medium Migration)

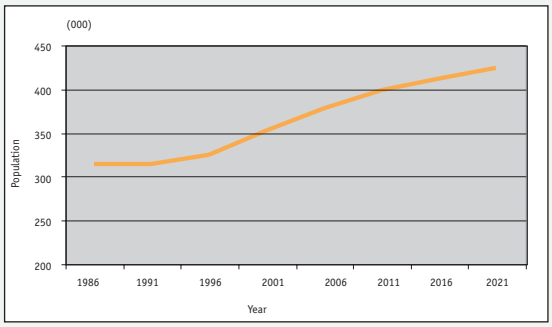


Table 6.1
Summary of Medium Migration Scenario Population Forecasts

Year	Total Study Area Population
2001	351,700
2006	377,000
2011	397,800
2016	412,000
2021	423,000

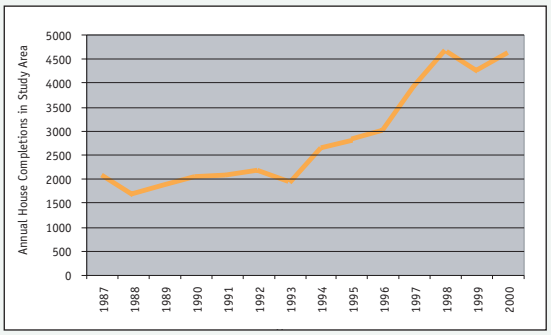
Low Migration Scenario
The low migration scenario projection assumes a rapid decline in net migration to the Study Area down to zero in 2006-2011 and thereafter. It will be recalled that when the Republic had a zero migration balance – between 1991 and 1996 - the Study Area still experienced net migration gains of about 700 per annum. This scenario therefore implies a major reduction in economic growth and migration balance at the national level. From 2006 the picture shows a return to GDP growth below the EU average and return to net migration out of the Republic. The results of this projection give a population of 370,900 by 2006, 379,600 by 2011 and 387,100 by 2021. The number of households in 2021 is projected to be 146,300 and the labour force to be 185,900.

6.4 Land and Property Requirements for Housing

In April 2000 the housing stock of the Study Area amounted to some 120,000 dwellings. More than a quarter of the dwellings have been built since 1986. Probably well over 80 per cent are owner occupied. There are 9,000 local authority dwellings. The private rented sector is probably smaller - in 1996 there were 7,300 people living in flats or bedsitters and since then there has been significant construction of private rented accommodation for holiday homes and similar purposes. The voluntary sector (for example, housing associations and co-operatives) is as yet of negligible size.

Private house completions in the Study Area are currently running at between 4,000 and 5,000 per annum. Figure 6.2 illustrates trends in housing completions between 1987 and 2000. Nationally, house prices have more than doubled over the last decade and Cork is no exception. Housing affordability is now an important issue for first time buyers.

Figure 6.2
Housing Completions 1987 - 2000



Source: DoELG Housing Statistics Bulletins

The central (medium migration) population projection shows a net increase in the number of households of 49,300 in the period 2000 and 2021. It will be necessary to plan for a greater number of dwellings than projected net increase in households, in order to allow for a frictional vacancy rate (5 per cent of new dwellings constructed), and to account for the incidence of second homes and holiday homes (one per cent of new dwellings). Replacement of losses to the existing stock through obsolescence, whether demolition, abandonment or change to non-residential use, is currently running at half a per cent of the total stock per annum. This allowance for obsolescence must also be added to the total number of dwellings planned, at least in the early stages of the Plan period (Tranche 1). Thereafter, obsolescence is expected to be negligible.

Thus, taking the central projection, the medium migration scenario would require the development of 56,000 new dwellings over 20 years at an average annual rate of 2,800. Since the medium migration scenario assumes a gradual tailing off of migration to the area, the rate will need to be somewhat higher at the beginning of the period. An average of about 4,000 dwellings per year will be required for the first Tranche, with the first few years of this six year tranche probably requiring an above average output. This is well within the capacity of the local house building industry, which is currently producing in excess of 4,500 dwellings per year within the whole of the City and the County areas.

The housing development programme that is eventually implemented will be highly influenced by a host of political, social, economic and market

6: Population & Employment Projections

variables which will exert strong demand side pressures. In particular, we highlight the importance of two recent developments which have arisen during the course of the study. First, the Department of the Environment and Local Government (DoELG) is co-ordinating a National Spatial Strategy which could directly influence the distribution of population and jobs as between Dublin and the key regional growth centres. Second, the publication of the third Bacon report on the Housing Market in Ireland in mid 2000 indicates the potential for additional housing provision in order to achieve a "catch up" in unmet housing demand. Account needs to be taken of these two additional factors which could induce a higher range of population and household growth than envisaged in our demographic and economic projections, especially over the next six years which can be considered a period of transition. Consequently, in Chapter 2 we set out the justification for planning for a higher range of housing provision in the short term.

Size Distribution of Future Housing

An important variable in determining the required housing development programme and the accompanying land requirements is the size distribution of future housing. The household numbers in the central projection give an average household size of 2.65 by 2021, far lower than the current Study Area average of 3.1, and in line with trends in other European countries.

Based on the projected future demographic structure a potential housing size distribution for the future development target of 56,000 new dwellings over 20 years can be set, as shown in Table 6.2.

Table 6.2 **Target Housing Programme 2020**

Household size distribution		Urban housing size distribution		Suburban housing size distribution	
1 person	27%	1 bed	15%	1 bed	5%
2 persons	34%	2 bed	35%	2 bed	20%
3 persons	16%	3 bed	35%	3 bed	40%
4 persons	16%	4 bed	10%	4 bed	25%
5+ persons	8%	5+ bed	5%	5+ bed	10%

This broad mix of future house sizes will have implications for the type of housing and density that is planned for, and the ultimate price at which housing is sold. This leads directly to the issue of affordable housing.

Social and Affordable Housing

The Planning and Development Act 2000 specifies that up to 20 per cent of residential land be reserved

for special needs and affordable housing, but the percentage of dwellings will normally be higher because of differences in density. Planning authorities may make the granting of planning consent conditional on the transfer to them of this percentage at existing use value. The land is then to be used for housing provided by the planning authority, approved bodies such as housing associations, or the beneficiaries themselves. Alternatively, the developer may transfer serviced sites or completed dwellings at a calculated price.

A Part V Housing Strategy for the County and the City area was prepared in accordance with new Department of the Environment and Local Government (DoELG) guidelines so that there will be wider choice of housing opportunities and tenure at affordable prices. This strategy has implementable projects to promote wider tenure diversification both to the south and north of Cork City – i.e. more social and affordable housing opportunities south of Cork and more low and middle market private housing north of Cork.

Housing Land Requirement

The implications of increasing the proportion of smaller dwellings in the future housing stock because of changing household structure will be to allow overall housing densities to be increased throughout the Study Area. This is in line with Government policy to minimise the loss of agricultural land and to reduce the per capita cost of providing services and supporting infrastructure. Higher densities are also necessary to support good quality public transport. However, it is important to emphasise that this does not imply a lowering of environmental conditions for new housing. Rather, the strategy will require far more attention be given to the quality of design and layout of new residential areas than has hitherto been generally achieved. This is discussed in more detail in Appendix C.

Land requirements may be estimated by calculating the gross density for each type of development, i.e. the amount of land required for housing plus an

additional area to provide local roads, open space and community facilities. The total housing land requirements could vary depending upon actual densities achieved and the increasing opportunities to create new dwellings through the conversion of large houses, the sub division of large plots, and the creation of dwellings above shops.

Average residential densities are expected to be highest in the City and in public transport corridors. In the centre of Cork, infill developments in the city centre should aim to achieve 200 dwellings per hectare (net) and in the Docklands about 140 dwellings per hectare (net). Elsewhere in the City, 50 dwellings per hectare (net) is considered an achievable target.

In Metropolitan Cork and the Ring Towns and rural areas, an average target of 40 dwellings per hectare (net) is proposed in the long term, although this may not be achievable in the early years of the Plan because of the high percentage of development that is already committed at lower densities. Table 6.3 summarises the housing density assumptions.

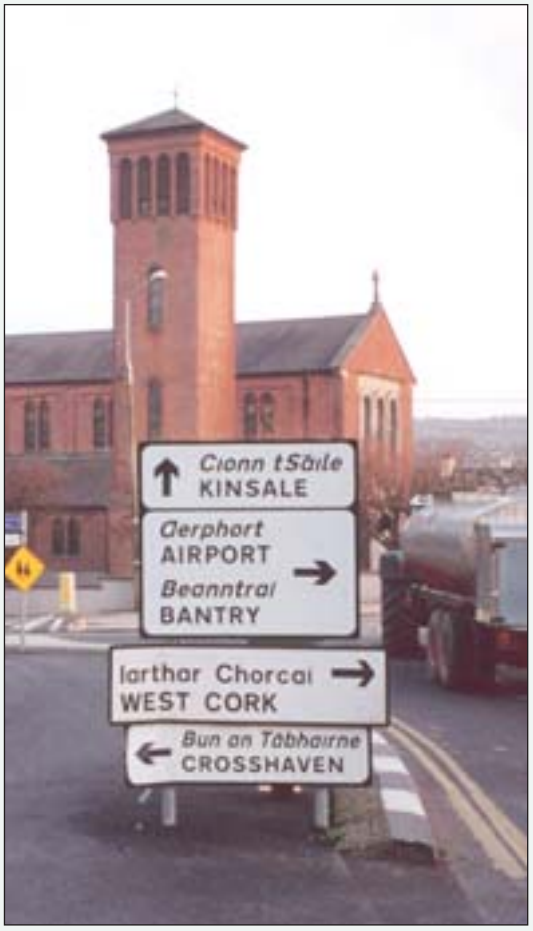


Table 6.3 **Housing Density Assumptions**

Category	Development Type	Cover%	Height (storey)	FAR[1]	Unit size (m^2)	Net Units per ha	% Area given to Plots	Gross Units per ha	Assumed Averages (units/ha)
1.	Apartments								
	Central area	30	6	1.8	80	225	75	170	150
	Subcentres	30	5	1.5	80	190	70	130	
2.	Town Houses								
	Inner	30	3	0.9	100	90	70	60	45
	Outer	30	2		100	60	60	35	
3.	Semi-detached & Detached (medium density)	25	2	0.5	125	40	55	20	20
4.	Detached (low density)	15	2	0.3	150	15	50	10	10
5.	Dispersed	1	2	0.02	200	1	90	0.9	0.9

1 Floor to Area Ratio

6:

Population & Employment Projections

6.5 Employment Projections

Study Area Employment
Employment estimates for the Cork Study Area were largely based on two main sources of information: the 1996 Census, which provides resident-based workplace data for the City and County; and the 1996 Cork City employment survey, which provides workplace data within the City boundaries.

Whilst in normal circumstances these might provide quite reasonable current estimates, the situation is complicated by the rapid economic growth which has taken place. Employment nationally has grown by roughly 25-30 per cent between 1996 and 2000, and growth in Cork is estimated to be at least of the same magnitude. The study therefore drew on additional sources such as labour supply estimates, changes in unemployment data and other survey based employment data to update and reconcile the estimates.

In 1996 resident based employment totalled some 114,790. In addition, there was net commuting in and out of the Study Area which translates into 128,600 workplace based jobs, of which 37.7 per cent were within the City.

To derive a year 2000 baseline employment estimate the consultants project forward from the 1996 data using the sectoral projections in the Economic and Social Research Institute's (ESRI) Medium Term Review 1999-2005. This gives 155,100 jobs in the Study Area in 2000, representing growth of some 20 per cent over these four years.

The structure of employment in the Study Area is similar to the State and consequently Cork's economy is likely to perform in a similar fashion to the national economy. Moreover, the Study Area has a well-balanced economy at present and is not overly reliant on any single sector of activity. It is potentially well insulated from potential unwelcome shocks. Key sectors of economic activity in the recent past have been pharmaceuticals, semi conductor design and information technology.

An important asset for the Cork City-Region is the presence of a growing tertiary education sector. The key institutions are University College of Cork, Cork Institute of Technology, Cork College of Commerce and St. John's College, Cork. The annual output of graduates from these colleges has increased from some 4,000 in 1989 to 9,000 by 2000. Well over a half of these graduates are subsequently employed in Cork or County Cork on leaving college.

This level of inward migration of intellectual talent has spawned the NMRC which has been a key driver of Cork's centre of excellence in semi conductor design. The universities are also leading research in information technology and health. Not surprisingly, health and education are major economic sectors in Cork and employ a significant proportion of the Cork labour force.

Projections
The basis of the employment projections used for Cork are the national employment projections published by the Economic and Social Research Institute (ESRI) in their 1999 Medium Term Review. This is compatible with the 'medium migration' population and labour supply projections. The approach which was adopted was to apply national forecasts of change - given in the ESRI sectoral employment projections - to the structure of employment in Cork.
Key growth sectors identified are:

- High technology processes and manufacturing.
- Services.
- Distribution.
- Transport and communications and
- Health and education.

Using this approach, if Cork is well represented with sectors which nationally are projected to show strong growth, then employment in Cork will grow quickly. Conversely, if Cork is under-represented in successful sectors and over-represented in declining sectors then there will not be strong growth in employment. Although the recent phenomenal rates of growth are not projected to continue in the long term, projected growth is nevertheless very positive across a range of sectors, and in particular in the service sectors.

Having derived baseline (year 2000) estimates, these are then projected forward for each of the subsequent periods on the basis of the ESRI sectoral forecasts. In order to be compatible with the demographic projections which are undertaken for Census periods the employment projections were adjusted to census years - i.e. 2006, 2011 etc.
In applying the projections, assumptions have been made based on the 1996 Census data about the proportion of activity in the chemicals and engineering sectors - that is high technology as opposed to traditional manufacturing. It is assumed that over the forecast period a higher proportion of employment in these sectors will be in the high technology component.

Central Employment Projection
For the period 2000-2021 employment is projected to rise by 46,220 to 201,280, an average of 1.3 per cent p.a. over the period. This compares, for example, with the period 1975-96, when employment in Ireland as a whole grew at an average of 1.0 per

cent per annum. A more detailed employment projection, by sector, is given in Appendix F.

Continued losses in the agricultural sector and in the traditional manufacturing sectors are more than offset by increases in the service sectors. The service sector will be the main source of employment growth. Currently, four out of every five new jobs created in Ireland are service based. This trend is expected to continue with employment in health and education, retailing, personal and professional services growing particularly strongly.

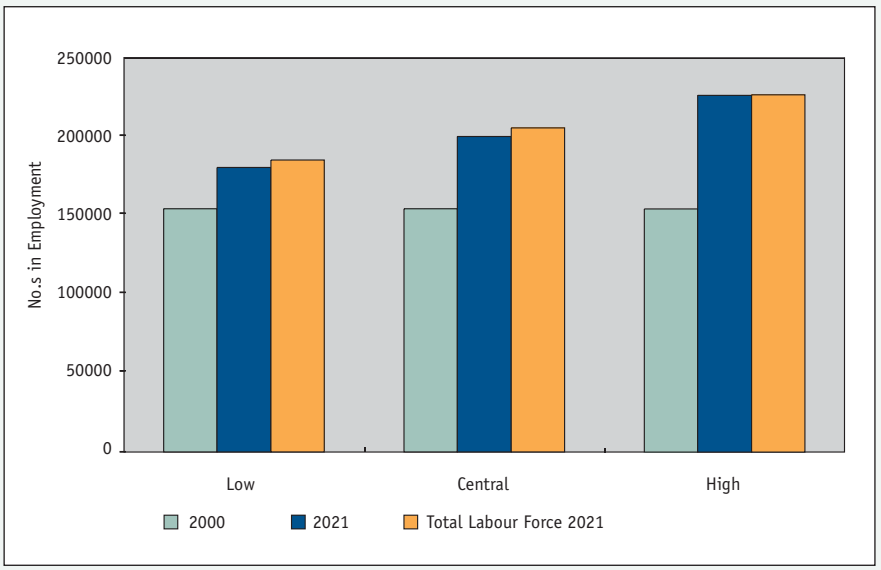
The strength of the pharmaceuticals and information technology sectors mean that there will be continued growth in some of the high tech parts of the manufacturing sector. But, despite the recent strong performance of manufacturing in Cork, as the economy matures an increasing share of employment will be taken by the service sector. In part, this is due to the potential for productivity gains in the manufacturing sector with higher levels of output being attainable with stable or falling employment. In part, it is a reflection of the global competitiveness of parts of this sector. Whilst Ireland has until recently benefited from this factor, issues such as EU tax harmonisation and expansion of the EU to eastern Europe might shift competitive advantages away from Ireland.

Alternative Scenarios

Two alternative employment scenarios were produced: a high and a low projection consistent with the high and low migration scenarios used in the demographic analysis. In each case they are based on the assumption of achieving full employment, or frictional rates of unemployment of around 2.5 per cent. In reality, varying rates of employment growth are likely to produce differential levels of unemployment, but given the current tightness of the labour market and the need to match migration with job availability it is reasonable (for planning purposes) to assume frictional rates of unemployment. In the high growth scenario employment would grow by 72,000 jobs to 227,032 between 2000 and 2021, an average rate of 1.8 per cent per annum. In the low growth scenario employment would increase by 26,400 to 181,400, an average of 0.8 per cent per annum.

A comparison of the three employment forecasts is presented in Figure 6.3. As can be seen even for the 'low' scenario there is still a substantial growth in employment. This chart also illustrates the labour force projections from the demographic analysis indicating an unemployment rate of around 2.5 per cent. The high growth scenario assumes that about 5,000 workers would regularly commute into the Study Area. Given the forecast profile of jobs growth and the very low unemployment rates, the availability of a supply of labour is essential if Cork's potential is to be realised. This raises questions as to the rate of migration, provision of affordable housing and the skill level of the future labour force to match the requirements of emerging economic growth sectors.

Figure 6.3 **Comparative Employment Scenarios**



6.6 Commercial Land And Property Development Requirements

The Scale and Type of Development
The commercial property industry generally takes a relatively short term view of the future when planning to meet anticipated property requirements. This is for reasons which are largely due to difficulties in projecting far in advance for a rapidly changing sector of the property market.

In short, recent or current performance is not an entirely reliable guide to the future, especially a longer-term 'visionary' future. To provide a longer term perspective on the full economic development potential of the Study Area, there are three key sources of guidance to supplement the appreciation of current market trends: a review of past trends, an appraisal of projected employment changes and, an assessment of evidence elsewhere.

In the whole of Cork City and County, a total of some 274,000 square metres of offices and 129,000 square metres of industrial space have been permitted since 1996. This has been located at Model Farm Road, Fermoy, Ballincollig, Bishopstown, Little Island, Carrigtwohill and Blarney. In addition, some 45,000 square metres of industrial, warehousing and business park and office development has been constructed at Cork Airport.

In the period 1994-2000 the average volume of office and business space floorspace promoted through FDI in the City and Cork County area has averaged about 16,000 square metres per annum, of which 9,000 square metres has been in the City. In addition indigenous expansions and start-ups will have occupied new space. Since 1996 some 36,500 square metres of new offices and accommodation for internationally traded services has been constructed in Cork City. In the same period 68,800 square metres of factory space has been constructed in the City.

The second piece of guidance is the employment projections. These indicate that under the central projection there will be a net increase of some 46,000 jobs between 2000 and 2021, of which about 20,000 will require new industrial or commercial premises. The remaining jobs will be accommodated in educational establishments, the health sector, leisure activities, etc.

For the jobs that will be created in education and health sector premises and localised services, the net housing land requirement is factored up to a gross land take target. In other words these welfare and local service activities are dealt with as part of the programming of development for new housing areas.

Demand for directly generated business space is derived from the performance of the local economy. The level of development that will be necessary to 'house' the projected increase in workers is derived through the application of standard worker/floorspace ratios for the different economic sectors. Given the continuing high rate of economic growth predicted for the Irish economy, and for Cork - especially over the next ten years - and the clear shift to service based employment; there is a requirement for a major increase in office type floorspace within the Study Area. It is estimated that a total of 143,260 square metres of City centre/local office space and 112,809 square metres of business park space will be required.

The implication of the employment projections is that, in broad terms the Study Area is likely to require the level of additional floorspace provision set out in Table 6.4. This table also provides a broad indication of land requirements, based on standard assumptions regarding height of development and plot cover.

Table 6.4 **Commercial Property: Built Area and Land Requirement 2000-2021**

	Built Area (m^2)	Plot Cover	Average Height (Storey)	Land Requirements (ha)
Offices	143,260	50%	4	7.2
Business Park Space	112,810	25%	2.5	18.0
Incubators	6,090	40%	2	0.8
Technology Park Space	48,270	25%	2	9.6
Distribution Park Space	150,720	35%	1	43.1
Production Units	45,000	35%	1	12.9
Standard Indl./Warehouse Units	232,660	35%	1	66.5
TOTAL	**738,810**			**158.1**

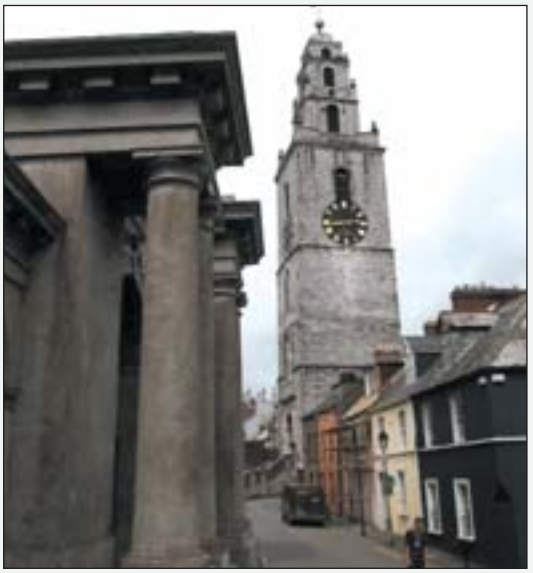
The third piece of evidence as to the potential for property development in the Study Area, is based on experience elsewhere in other City regions, which are undergoing a rapid transition in the pace and style of property development as a consequence of changing economic conditions and growth of new economic sectors. The most notable example is Dublin, where take-up of office space in 2000 alone amounted to some 200,000 square metres. It is predicted that a further 320,000 square metres of office accommodation will come on stream in the Greater Dublin Area in 2001; 65 per cent of this space has already been let. Around 300,000 square metres of industrial space were taken up in Dublin in 2000 and over 140,000 square metres are due to come on stream in 2001.

Clearly, Dublin is not an exactly analogous City region, but if the Cork City Region is to consolidate its regional city function and perhaps achieve a higher share of "footloose" economic and population growth (perhaps in response to outcome of the National Spatial Strategy) then it will need to enhance its rate of office development. Historically the more constrained supply of land in the City and its higher cost/value compared with greenfield sites in the County have been reasons why Cork City has not achieved a more noticeable quantum of good quality office development. These constraints will need to be overcome in the future if the City centre is to function successfully as the prime office location.

The development requirement set out at Table 6.4 amounts to a little under 739,000 square metres of total commercial development and represents an average annual building requirement of almost 37,000 square metres. In the early years of the programme a higher rate of development of about 40,000 square metres per annum is expected reflecting the current levels of buoyant demand. The total land requirement is of the order of 158 hectares, averaging nearly 8 hectares of new development annually. Once again, it is expected that more land would be taken up in the early years of the Strategic Plan period and a clear focus will need to be given to office development in the City, fringe central locations and in the Docklands.

Retail Development

A detailed retail study was undertaken by Roger Tym & Partners for Cork County Council and Cork Corporation in 1997. This highlighted the rapid growth in consumer spending both in the State and within Cork, which was fuelling both the growth in demand for retailer representation and the development pressures which have emerged in the late 1990's. Since the retail study was completed, the Irish economy has grown even more rapidly and the consequent demand for retail development is



greater than before. Some 47,750 square metres of retail floorspace (net sales area) has been committed since 1997; the majority of this additional space is located on the periphery of Cork, where market demand is more focused.

The recently published Retail Planning Guidelines provide a new framework for dealing with retail development proposals. Amongst a range of new policy guidance there is a requirement for the County and the City to compete a joint strategic retail study by June 2002. This will be an important study given the buoyancy of the retail sector in Cork and the important role which it plays in the Study Area in providing services and employment opportunities for a wide range of the community.

The approach adopted in forecasting retail floorspace requirements is consistent with the general employment projections in that it is derived from the ESRI's medium term economic projections. This data source was the foundation for the 1997 Retail Study of County Cork which incorporated a six year projection to 2003 and rolled it forward to 2006 initially. This produced projections of both spending and floorspace requirements. For the longer term period after 2006, potential spending growth scenarios are simply outlined and the likely development requirements are discussed in qualitative terms.

6:

Population & Employment Projections

Short Term Retail Requirement (2000-2006)
Due to increased population migration and spending changes, the growth in spending in the Study Area is more than predicted in the original Cork Retail Study. This rate of growth in spending is likely to continue at least to 2006. Consequently, it is necessary to plan on the basis of more retail development rather than less. On top of the retail commitments there is a requirement for an additional 61,000 square metres or so of comparison goods sales floorspace up to 2006 and some 12,000 square metres (net sales space) of convenience goods shopping.

In projecting this aggregate quantum of development much depends on the split between different types of retail activity and the specific distribution of retailing within more locally defined catchment areas. It would also be necessary to determine precisely the in-town capacity of the key urban centres to accommodate retail development before planning for edge or out-of-centre development. An indicative guideline for the distribution of potential retail development, which takes account of established planning policies and the likely short term capacity of Cork City centre, is set out below in Table 6.5. In addition, some 22,000 square metres net retail warehouse floorspace will be required for comparison shopping.

Long Term Retail Requirement (2006-2021)
To provide a broad picture of what might happen up to 2021, the model was run with changed assumptions on spending growth. The results for the three main areas of retail activity are summarised below.

Table 6.5 **Guidelines for Potential Retail Development**

Area	Short-term (year 2000 – 2006) Retail Requirements (m^2 net floorspace)	
	Convenience Goods	Comparison Goods
City Centre	-	12,000
Suburbs, Satellite Towns & Miscellaneous	8,000	22,000
Ring Towns	4,000	5,000

Convenience Goods Provision
Some 12-20 supermarkets / superstores might need to be developed after 2006. This provision should match the distribution of new housing development in the Study Area and fill any obvious gaps in current provision. Development will largely follow market demand and, in general terms, is likely to be in the main area of population expansion in the metropolitan area of Cork and the larger market towns. In addition to the main grocery stores there will be a requirement for smaller town and village developments within the existing built up area, together with some specialist shop units to be provided ancillary to larger developments.

Fashion Oriented Shopping Provision
The future distribution of fashion oriented comparison shopping is critical. Potential locations include Cork City centre, the Market Towns (both the Ring Towns and the Satellite Towns) and purpose built, off-centre locations.

It is fundamentally important that a major retail development occurs in central Cork if it is to function effectively as a successful and popular retail destination. There is likely to be substantial expenditure growth up to 2021 and it would not be unrealistic to aim to promote up to 50,000 square metres of retail and associated floorspace. At this scale there would be a quantum improvement in the retail offer and Cork would have shopping facilities comparable to the best in Europe. Given the problems of assembling City centre sites and the costs involved, it is difficult to envisage major development coming forward within the current prime retail area of Cork. It thus becomes necessary to consider major edge-of-centre (not out-of-centre) locations which could be linked into the existing City centre, albeit possibly with river crossings. The choice of generalised location will be largely dependent on ease of accessing new development both by car and public transport, the relative connectivity with the existing City centre and the view which is taken of the feasibility of land assembly.

In addition to development in central Cork there could be potential for an equivalent quantum of space to match the growth in population and located within the main areas of new housing development. Good public transport accessibility will be a key requirement. It is likely that the bulk of new development will be in the largest Ring Towns and the emerging metropolitan sub-centres (Satellite Towns and Suburban Centres) closer to Cork. This additional provision might be distributed amongst six or seven locations.

Bulky Durable Goods Provision

The bulky goods sector of the retail market is somewhat under-provided both in Ireland and Cork. Current provision amounts to about 3 per cent of total comparison goods floorspace and currently only the new development at Ballincollig is committed. There is significant scope for additional provision. For example, mature retail systems in the UK typically have about 15 per cent of total comparison goods retail provision in the form of retail warehousing. Retail warehouses generally do not adversely affect town centres. There could be scope for some 40,000 square metres of additional retail warehousing. As far as possible retail warehouses should be located on the edge of or near town centres, district centres or suburban centres so as to ensure the benefits of additional trade linking into a nearby shopping centre. Retail warehouse development, as with convenience goods provision, draw from relatively localised catchment areas and should match the future distribution of population in the Study Area.

SUPPORTING ANALYSIS

B

7.1 Introduction

This chapter examines the capacity of the Study Area to accommodate the projected level of growth over the next 20 years. The starting point is a brief summary of the characteristics of the area, including spatial socio-economic data, environmental and infrastructural resources. This is followed by a more detailed review of the City and other settlements that comprise the Study Area.

7.2 Overview Of Environmental Resources

The main environmental elements and characteristics are summarised on Figure 7.1.

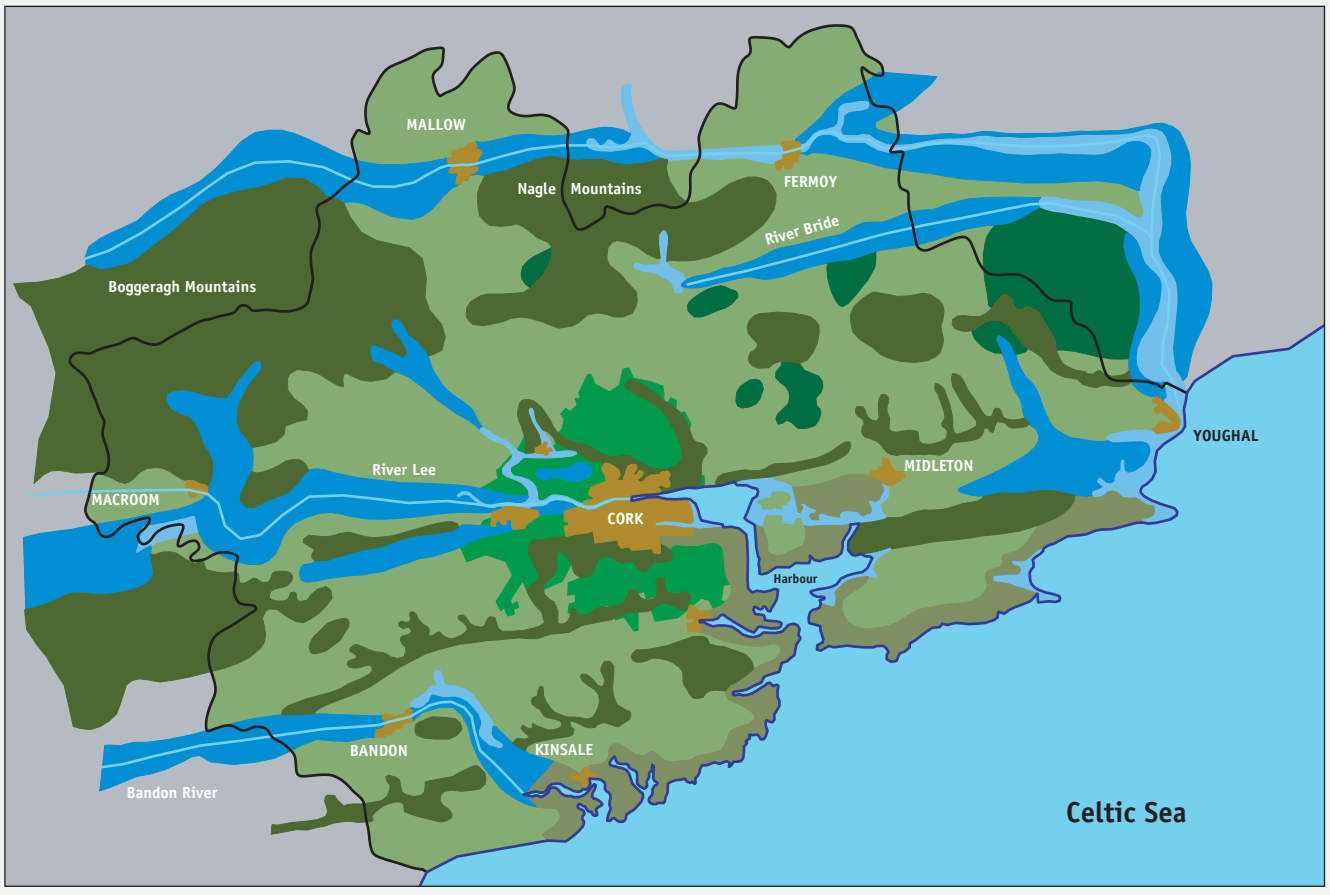
The Study Area is generally low lying, with land rising to a maximum of just over 400 metres in the Nagles and Boggeragh Mountains. The topography is characterised by the distinctive east-west orientation of the parallel ridges and valleys, typified by the Blackwater, Lee and Bandon Valleys. Glaciation has resulted in a highly irregular topography and land is often steep, with large areas of flat land being generally confined to the low lying and flood prone river valleys and coastal plains.

Legend

- Urbanised Areas
- Green Belt
- Steep or Hilly Topography
- Major Forest Areas not included in other Zones
- Areas of Designated Landscape or Scenic Importance
- Coastal Protection Zones
- Natural Heritage Areas Special Protection Areas and Nature Reserves
- Undulating Agricultural Landscape of Small Fields and Hedges

This plan is NOT intended to be site specific and indicates possible broad locations for future development.

Figure 7.1 **Environmental Context**



7: Development Capacity and Potential

Soil types in the City-Region give a wide land use capability and, coupled with a favourable climate, support both arable and livestock farming over most of the Study Area. As a result, local farm incomes in the area are amongst the highest in Ireland. Upland areas with poorer soils have been extensively planted with commercial forests in recent years.

Forest cover in County Cork is at about the national average, and is concentrated in west and north Cork. Cork County Council has prepared a strategy identifying areas sensitive to forestry, and this includes much of the Study Area.

The landscape of the Study Area is very varied and generally of a high quality. Although there is no statutory basis for the protection of areas of scenic beauty in the Republic of Ireland, a number of areas are designated in the Development Plan as being of scenic importance.

Guidance to local planning authorities has recently been issued by the Department of the Environment and Local Government (Landscape and Landscape Assessment, June 2000) in which emphasis is placed upon viewing and dealing with the landscape in a more comprehensive way. The County Council will be gradually undertaking a comprehensive landscape character assessment of the Study Area over the coming years.

Natural heritage policies in Ireland include three key 'official' designations: Natural Heritage Areas (NHA), Special Protection Areas (SPA), and Special Areas of Conservation (SAC). NHAs are the basic designation of the system and all other designations overlap with NHAs. SPA are aimed at the protection of natural habitats, fauna and flora, and the following designations have been made in the Study Area:

- Ballymacoda.
- Old Head of Kinsale.
- Blackwater Estuary.
- Cork Harbour.
- The Gearagh (Macroom).
- Ballycotton Bay.

The Special Area of Conservation (SAC) designation aims to protect natural habitats of EU importance and in the Study Area. The Gearagh (Macroom) and Ballycotton, Ballynamona and Shanagarry have been designated. Despite this, it should be noted that Ireland has the smallest area devoted to nature protection of any European country. Further work is required in the Study Area to properly further identify areas worthy of protection and designation and to increase resources devoted to implementation and enforcement.

The Study Area is rich in historic and archaeological landscapes, townscapes and man made features of great interest and cultural value. The rich heritage of historically resonant place names, townlands and monuments - both historical and pre-historical -are a testimony to longevity and diversity of the peoples and civilisations in the area. Also of note is the legacy of attractive towns and villages some of which rose to prominence and wealth during the 18th century, and which possess streetscapes and historic landscape settings of considerable value. Examples of attractive townscapes include all of the Ring Towns, larger villages such as Innishannon and Cloyne, and many very small settlements such as Castlelyons.

Elements of the built cultural heritage including archaelogical remains are formally protected, but the wealth of attractive and historically important buildings and structures in the Study Area is not consistently or adequately reflected in the protected building list. Elements of the non-built cultural heritage such as placenames and townland names are not formally protected. An inventory of national monuments and archaeological sites has been established on a county by county basis. A national programme to create a more comprehensive architectural inventory is currently underway and this should help identify additional buildings and structures worthy of preservation. The designation of formal town and village conservation areas and historic landscape settings in the development plan is now proposed under the Planning and Development Act, 2000. Widespread implementation of these provisions will be an appropriate way forward to provide further protection to the many attractive and important townscapes in the Study Area.

The Cork Green Belt extends from the city centre for an average distance of about 10 kilometres. Although a Green Belt is primarily a planning tool, it does much to protect environmental resources. In Cork it has been generally successful in retaining a landscape setting to Cork City and the harbour and has helped retain the distinct identity of the suburbs of the city by stopping urban sprawl and preventing settlements merging into one another.

Green Belts are often held to encourage the recycling of land in urban areas by stopping the easy option of spreading urban development into the countryside. Historically Green Belts have also played an important role in providing opportunities for recreation and sports within easy reach of densely populated areas, although this role has tended to become less important as car ownership has increased. Nevertheless although there has been some erosion of the Cork Green Belt in certain locations, and a degree of sporadic development allowed by the current system of exceptions, it is considered that Green Belt policy still fulfils its prime planning functions successfully.

7.3 Socio-Economic Overview

The Cork City region is the second largest urban area in the State after Dublin, and one of the more densely populated parts of the country. The distribution of population in the area is shown on Figure 7.2. (overleaf).

An analysis of the Study Area reveals that it is one of the most affluent parts of the country, with few disadvantaged areas, as can be seen from Figure 7.3.(overleaf). This shows that the only areas where there are any significant pockets of disadvantage are in parts of Cork City, in the north and, to a lesser degree, in the south of the City. The Northside of Cork City has one of the most significant concentrations of social and economic deprivation outside Dublin, and improving this will be a key objective of the Strategic Plan.

In the rural areas there are some less prosperous areas in the higher, less fertile lands but these areas are sparsely populated, so that the absolute numbers of people affected are fairly low. Confirmation of this general pattern of affluence or disadvantage is provided by data on the percentage population of households with two or more cars. In virtually the whole of the Study Area, apart from parts of Cork City and Youghal, over 20 per cent of the households have two cars, which means that the Study Area has one of the highest levels of car ownership in the country.

7.4 Transport Overview

Public Transport

Rail

An hourly suburban rail service operates between Cork and Cobh, with one extra commuter service in the morning. Mallow is also linked to Cork by rail, as part of the mainline rail network, with some 10 services per day, one of which is timed to suit commuters.

Iarnrod Eireann is advancing plans to redevelop Kent Station and the surrounding area, in partnership with a private developer. This would improve access to the station by all modes, including by foot, by bus and by private car. The redevelopment also offers the opportunity to improve rail operations and introduce regular through-services.

In addition to the proposed station development, there is significant potential to upgrade the Cork Suburban Rail Network. A possible option that has been previously mooted is:

- Redevelopment of Kent Station to include safety and capacity improvements, and to allow through-running (trains from Mallow could continue to Cobh or Midleton). This should be undertaken as part of the station redevelopment.
- Two additional stations on the Mallow line, at Blarney and Kilbarry/Blackpool.
- New stations at Tivoli/Dunkettle and Ballynoe.
- The reopening of the disused section of line from Glounthaune to Midleton, with station(s) at Carrigtwohill.

Legend

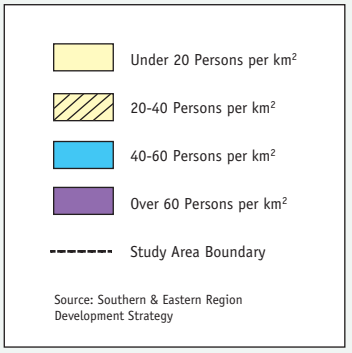
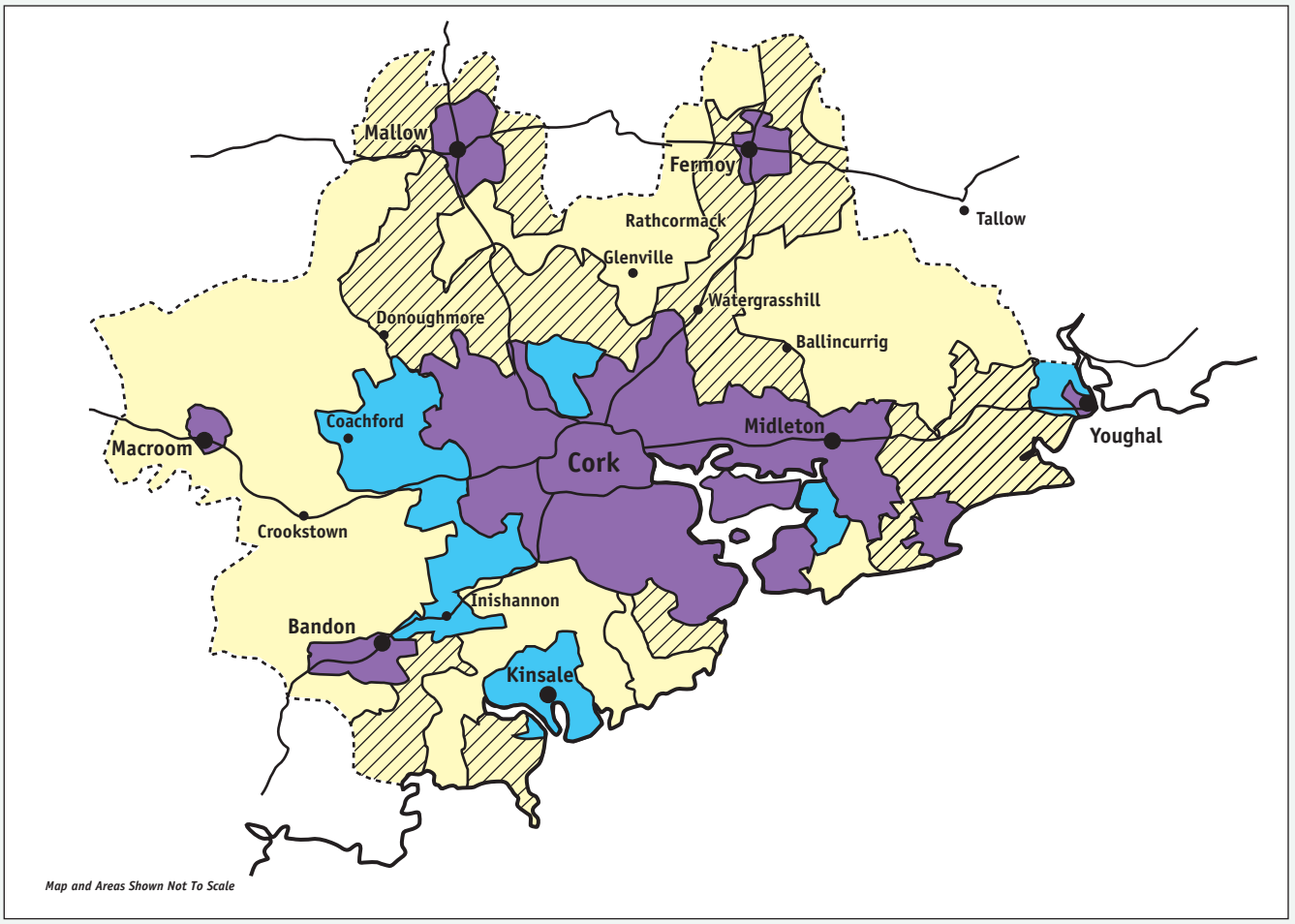


Figure 7.2 **Population Density**



Following a review by the Cork Area Strategic Plan team and discussions with Iarnrod Eireann, it was concluded that the above scheme would be a sensible starting point for a public transport system for the north and east of the Study Area, subject to economic and technical feasibility.

Iarnrod Eireann has a policy of improving car parking at all stations, which is being actively progressed at several locations, including Mallow, Little Island and Glounthaune.

Bus

An extensive bus network operates in the Study Area. Although the coverage is good, many of the services, even in the City, offer an infrequent or irregular service, or limited hours of operation. Historic data provided by Bus Eireann showed that passenger numbers on services in the City declined slightly in the period from 1991 to 1999, at an average rate of one per cent per annum. Numbers of passengers on suburban services remained stable during the same period.

Since 1999, increased investment has enabled significant improvements to be implemented. New buses delivered in Summer 2000 have enabled the entire fleet to be updated, a new orbital service to be introduced, frequencies increased on some routes, and some routes extended. Where frequency has increased, a 20 per cent increase in patronage was rapidly recorded. Bus Eireann is expecting further delivery of new buses in the early years of the Strategic Plan and are seeking support from the local authorities in the form of bus priority measures, although no detailed proposals have yet been considered.

Legend

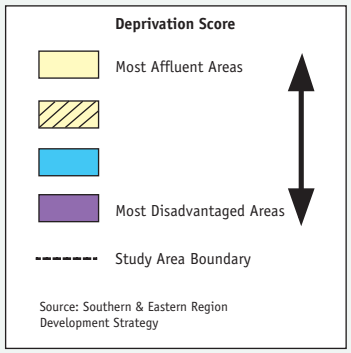
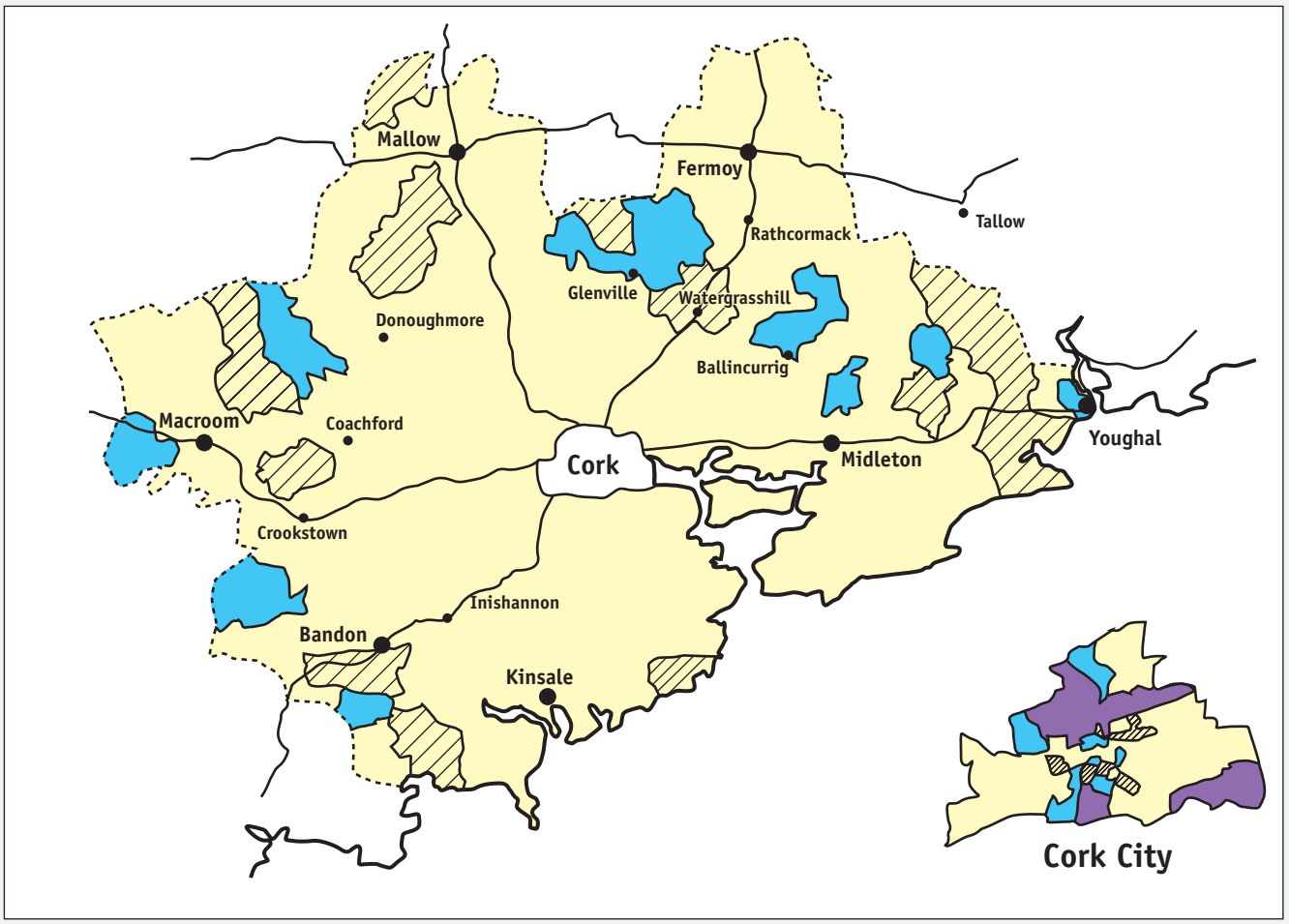


Figure 7.3 **Social Deprivation in the National Context**



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Buses serving University College Cork and the Cork Institute of Technology, via the City, meet the main rail commuter services arriving at Kent Station in the morning.

Road Network

Cork benefits from a good road system which was developed as a result of the Cork Land Use and Transportation Study (1978). Notable road links built in recent years include the South Ring Road, the South City Link Road and the Jack Lynch Tunnel under the River Lee.

Historic data shows that total traffic flows on the key radial roads in the Study Area doubled in the period 1990 to 1999, as shown in Figure 7.4. From 1996 to 1999, traffic growth rose sharply, resulting in an average annual growth rate of 15 per cent.

Within Cork City, the historic trend has been for traffic to grow at a faster rate than forecast by LUTS, even in years with little economic growth (see Figure 7.5). The data indicates a 4 per cent reduction in traffic flows from 1998 to 1999, after the tunnel opened.

Figure 7.4 **Historic Growth in Traffic on Strategic Radial Routes**

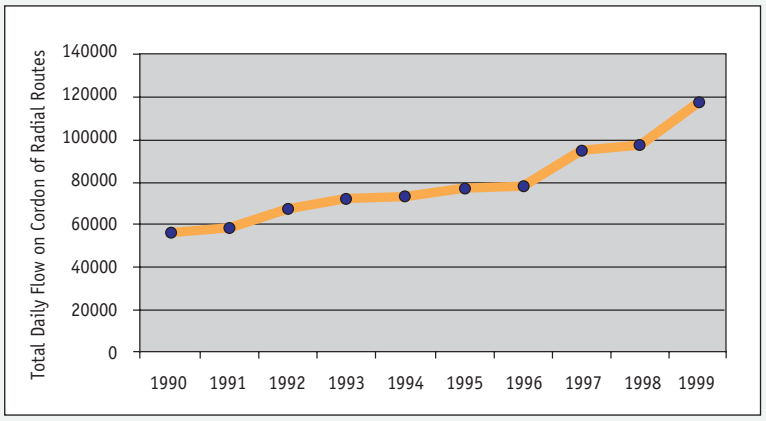
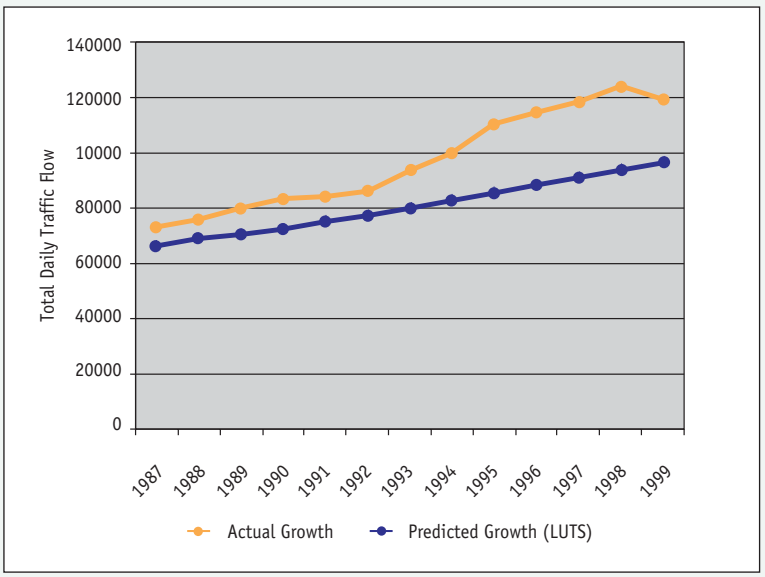


Figure 7.5 **Growth in Traffic within City**



Notwithstanding the reduction in traffic flows on local roads within the City area, the recent growth rate on the strategic routes is extremely high, and is not sustainable in the long, or even medium term.

Improvement schemes to address most problems on the main road network are currently proposed or under consideration by the local authorities and/or the National Roads Authority (NRA). These are summarised in Appendix H. Additionally, the NRA proposes upgrading of all the radial routes between the Ring Towns and the City.

Travel Demand in the Study Area

Travel demand is derived from demographic and economic demands, as well as other factors including car ownership and the availability of public transport. This section outlines recent trends in travel demand based on data from the Central Statistics Office (CSO), traffic counts, journey time surveys and public transport passenger data. Future transport conditions, based on the growth scenario set out above, are outlined.

Census data revealed that growth in travel throughout the Study Area was negligible in the period 1986 to 1991, consistent with low economic growth and high out-migration. Since then, demand for travel to work, school and college has grown substantially, with growth in the period 1991 to 1996 running at an average of 12.7 per cent per annum.

The Department of Environment and Local Government report a 5 per cent annual average growth in car registrations since 1991, with recent years to 1999 experiencing growth closer to 6 per cent, and possibly up to 9 per cent in 2000.

The rapidly expanding demand arises from the upward trend in population and economic growth. Although the growth is rapid across all parts of the Study Area, demand for travel is growing faster in the rural areas and suburban/outer areas than in the City and Ring Towns, reflecting the trend for development out of town. Census data also shows that, on average, everyone in the Study Area is travelling more, possibly twice as much. This is due to the increase in economic activity, as well as the trend for development outside the main centres.

Mode of Travel

The latest census data (1996) shows that, for the Study Area as a whole, some 57 per cent of all travel to work, school and college in the Study Area is by car. A further 28 per cent of travel is on foot or by bicycle, and 17 per cent on public transport (bus and rail). Travel by car is growing faster than any other mode, but there are also more people travelling by bus and by train. Use of bicycles and motorcycles has declined despite population and economic growth, possibly because of greater prosperity and car ownership.

Implications of Travel and Socio Economic Trends

The car dependent trend in Cork is fuelled by economic growth; rising car ownership; dispersed, low density development; a relatively high standard of road infrastructure and a historic lack of investment in public transport. The large forecast growth in population, employment and the increase in incomes, which enables higher rates of car ownership, will make matters disproportionately worse. Without a sustainable transport plan, traffic will double over the next 20 years. Peak hour travel speeds will fall to 5mph on most roads in the urban area. Journeys to work will take four or five times longer in many cases, so that two hour journeys to work from the suburbs to the City will not be unusual. The benefits of recent and planned road improvements will be rapidly eroded. Commuter traffic will dominate the road network, at the expense of its efficiency for strategic movement.

None of these predictions is unrealistic. One only has to look to Dublin as an example of how quickly the above scenario can emerge in circumstances of rapid development.

Provision of new roads is not generally a sustainable solution – it would only exacerbate the problem in the long term and adversely affect the City and the attractive network of the older towns in the Study Area. Instead, an approach is required that:

- Optimises the efficient use of existing infrastructure.
- Minimises the need for travel by integrating and balancing land uses.
- Encourages greater use of public transport by improving standards of service and provision and by restraining cars in certain situations.
- Promotes higher development densities so that public transport can be viably provided.

On the positive side, there has never been a better time to seek Government support and funding for transport proposals following the above approach.

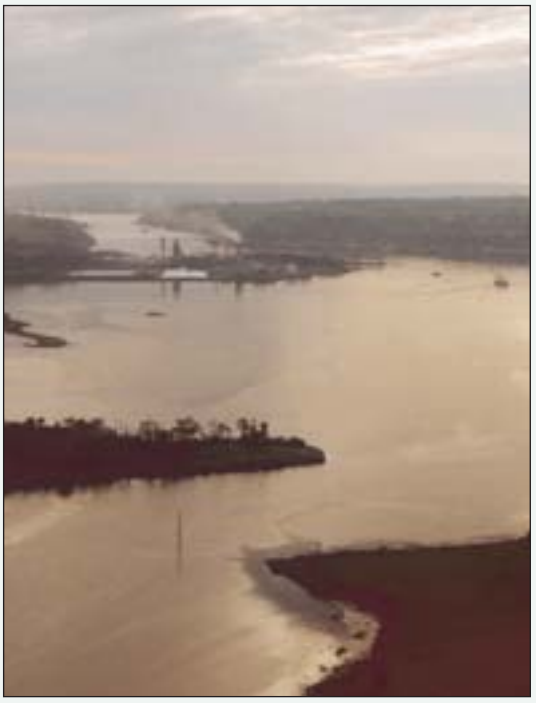
Cork Port

Cork's outstanding harbour and the port are among the City-Region's strongest attributes. It is a unique selling point both nationally and internationally, in terms of influencing the development of Cork as a 'Gateway' under the emerging National Spatial Strategy. The importance of partnership with the Port of Cork in implementing the Strategic Plan is emphasised.

The Port of Cork has commissioned a study of port operations and the Port of Cork Strategic Development Study. The Stage Two Report was prepared by Posford Duvivier and issued in September 1999.

The Port of Cork and private facilities in the harbour handled 9.3 million tonnes in 1998, representing a growth of 8.9 per cent on the previous year.
The main commodity throughputs for the port are bulk liquid, dry bulk and break bulk cargoes and Lo-Lo trade. There is also a car trade throughput and a declining volume of passengers and tourist cars.
The Port of Cork handles commercial trade at three main locations - City Quays, Tivoli and Ringaskiddy, with the remainder of the trade passing over private quays, of which the major share flows through Whitegate. Cobh operates solely as a cruise ship terminal and as a fishing port. It has no commercial port operations.

Port operations at City Quays are in decline and are likely to reduce significantly over the coming years. This represents a major City-wide regeneration opportunity. Thus the future focus of activities for the Port of Cork will be at Tivoli and Ringaskiddy.



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Operations at Tivoli are constrained by the increasing trend towards deeper draught vessels and the constrained area for landside operations; however, the berth does benefit from good railhead access.

Ringaskiddy benefits from deep water berthing, but suffers from a mixture of roles which constrains current operations. The deepwater terminal at Ringaskiddy has recently been extended. However, the capacity of the existing berths is restricted by the seasonality of the cargo and landside operational practices, with working hours particularly affecting bulk cargo handling. The nature of the trade at this terminal has diversified into multi-purpose, with several categories of the traffic now being in shallow draught vessels. Furthermore, customers have progressively developed the landside back-up area behind the berth. This means that the terminal is not suitable currently for use as a container terminal. This will need to be addressed with a view to a long term rationalisation of the multi-purpose operations.

The Port of Cork Strategic Study projects a marked increase in total port throughput from 9.7 million tonnes in 2000 to 17.3 million tonnes in 2020.

In the medium term, the port will need new facilities to accommodate trade growth and to reflect both environmental requirements and restrictions on existing facilities. Even with the recommended improvements to operations at Tivoli container terminal, additional container handling facilities will be required from around 2006. The opportunity for developing deepwater facilities at Ringaskiddy in the lower harbour capable of accepting deep-sea services should be combined with these new facilities. Such a deepwater facility would be able to accommodate the forecast growth in trade and give the potential of attracting deep-sea container ships to Ireland. Much of the land requirements for the protected port development at Ringaskiddy will be from land reclamation. This is likely to be of the order of 30 hectares at both Curlane Bank and Oyster Bank and 10 hectares for a Common User Berth. Despite the proposed reclamation, development in the Ringaskiddy area should be limited to port-related industry, other industry, port back-up or other activities that complement the port.

In the long term the bulk berth at Tivoli will become available for redevelopment following the closure of the Lisheen Mine. The encroachment of Cork City onto Tivoli will make the redevelopment of the berth difficult. Following development of a new container terminal at Ringaskiddy, the container terminal at Tivoli could become redundant. It is likely that redevelopment for port related industry might then be restricted. There may be potential, however, to make use of the adjacent Cork to Dublin railway and bring containers into Tivoli for onward transport by train to the rest of Ireland. Equally, there may be potential in the Marino Point area for the same reason.

Cork Airport

Cork Airport - owned and operated by Aer Rianta - was opened in 1961. In 1999 the airport catered to a total of 1.5 million passengers and over 14,000 metric tonnes of freight. Total aircraft movements in 1998 were over 37,000 of which about 40% are scheduled flights. As the State's third major airport, it currently caters for approximately 8 per cent of passenger movements, 15 per cent of aircraft movements and 7 per cent of freight at Aer Rianta airports.

The airport went to 24-hour operation in 1998 and is currently handling passenger volumes beyond its design capacity. The airport has experienced a sharp increase in passenger volumes in recent years, broadly reflecting the increased demand for air services by the Irish due to economic buoyancy and increase in tourism to the country. Further investment is planned, while an industrial and services park has been developed within the immediate environs of the airport.

An airport development plan has been prepared which will see the airport facilities expanded at a total cost of 77.5 million. The plan includes expansion and upgrading of the airfield area, passenger terminal expansion, new cargo facilities and a multi-storey car park. This development programme of the airport itself can be accommodated within existing airport boundaries. As it will not be necessary to acquire or zone additional land in order to achieve this expansion programme, the key interest for the Cork Area Strategic Plan, therefore, is the role of the airport in supporting the economic potential of the City-Region and enhancing the image of Cork.

Of particular importance for the Study Area is the need to provide an improved air service to international destinations. Here, the future will be determined by the ownership and operation of the airport. There are two alternatives, both of which imply greater competition. First, to increase access to the airport by airlines other than Aer Lingus, which will open up direct routes to key European destinations at times which are attractive to the business community. Second, and alternatively, current services to Dublin, which acts as the international hub for Ireland, could be upgraded to a much more frequent shuttle service so that business passengers can more easily access overseas destinations at convenient times. The key issue is one of improved flexibility in travelling times for business purposes.

7.5 Utilities

Water and Drainage

Practically all of the water requirements for Metropolitan Cork, including the City itself, are dependent on the works at Inniscarra, which has only limited spare capacity in the short term and will need to be upgraded. Similarly, future sewage treatment is dependent on the scheme at Carrigrennan, Little Island being expanded beyond what is currently planned for, and the Lower Harbour Scheme which is currently at the initial planning stage. These three schemes will be critical to the success of any development strategy, and will require to be progressed urgently.

Cork County Council and Cork City Council are currently preparing to undertake a "Strategic Plan for Water Supply". This plan will enable integration of the water supply to Cork City and surrounding county areas, and make provision for servicing the requirements and phasing of the Strategic Plan.
A Strategic Plan for Foul Sewage and Surface Water Drainage could also be desirable to assess the integration of sewage and drainage for development areas adjacent and close to the City boundaries.
It is important to emphasise that studies and action plans should be undertaken as a matter of urgency so as to ensure that the required services infrastructure is provided on programme with the Strategic Development Plan, regardless of whether this is funded all or in part by the public or private sector.

Waste Management

The residents and industrial and commercial uses in the study area generate a large volume of solid waste, and it is of great importance to the quality of the environment that it is managed in a sustainable manner. Both the City and County Council have adopted waste management plans based upon European Union and Irish legislation and policy, and these set out strategies and performance targets. Among the key policies of the plans are an increased emphasis upon recycling of municipal, construction and demolition waste, a reduction in the amount of waste going to landfill, rationalisation of the number

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of landfill sites, and reduced emissions of methane gases from landfill. The development of composting and other biological treatment facilities are also proposed. Further details of these waste management strategies are given in the appropriate waste management strategies for each authority.

Electricity
The Plan recognizes that the delivery of power and the provision of the necessary infrastructure is an essential requirement for the economic development of the Study Area.

In Cork growth rates in electrical demand have been above the national average of 5% per annum for the last eight years. There has not been a corresponding investment in transmission infrastructure to support this demand. The critical problem locally is security of supply – owing to a infrastructure deficit there may be problems maintaining service. This acts as a deterrent to certain industries as a consistent supply cannot be guaranteed in Metropolitan Cork. This problem would be overcome by a 220kV link between Raffeen 220kV station and Aghada 220kV station, which would also allow other improvements to take place.

Where feasible, consideration should be given to putting infrastructure underground.

Gas
The Natural Gas distribution network now extends out from Cork City to Ballincollig, Tower, Carrigaline, Passage West, Glanmire, the western side of the Lower Harbour, Carrigtwohill, Midleton, Cobh, Little Island, Fermoy, Mitchelstown and Mallow. Bord Gais is actively examining the feasibility of extending the grid to Bandon, Kinsale, and the eastern side of the Lower Harbour, and does not envisage exceptional difficulty in catering for future development in any area that already has a gas supply. On the other hand, the capital costs of providing a supply to villages and remote areas are likely to be uneconomic. On-going liaison with Bord Gais is required as local plans are progressed.

Telecommunications
The availability of competitively priced broadband international connectivity is a fundamental requirement for Cork's future, one which it currently lacks. The following infrastructure is needed:

- A fibre ring backbone network around the City.
- A comprehensive local access network.
- A telehouse/co-location facility, connected to the Global Crossing Network and to CityWest Primary Telehouse, Dublin (or any other transatlantic cables being developed), providing a centralised Internet connection for local businesses and communities.

Cork should also secure equal peering with Dublin for voice and broadband services. Firstly, to prevent service providers charging extra for traffic to/from Cork when communicating with Dublin, and secondly to remove the price differential – the price of voice and broadband services is lower in Dublin than in Cork. Initiatives to progress the above requirements are already in place by Enterprise Ireland (ITS 2007 Strategy) and the EC Business Innovation Centre (BIC) in Cork. (This was established in 1998 by local private and public sector interests with the support of the European Commission). The Cork Area Strategic Plan process will need to actively support, and be coordinated with this initiative. In terms of phasing, the above items are required in the short term and new developments should be linked in as they are constructed.

7.6 Development Potential - The City

Existing Situation
Cork is the historic heart of the Study Area, with a population of 124,000. It has an attractive character, a fine setting and a pleasant environment. It boasts a number of well established industries, notably brewing and distilling, and in recent years the economy has expanded to include a cluster of academic, research, medical and related business activities in the south-west. There are well distributed and diverse industrial zones and a few small business parks, mostly accessible from the main road network but well related to housing areas. There are a number of successful district centres, but there is a lack of major modern office districts, and although some progress has occurred in the suburbs, the sites are isolated and car-reliant. There is also a lack of small dwellings in the housing stock, relative to changing household size. As in many historic cities the narrow streets often appear congested.

The consultation process showed that it is widely accepted that there is a need to improve the appearance of Cork City, and invest in the public realm to make it more attractive. Within this context, Cork City Council is planning significant

improvements for Patrick Street, Grand Parade, the South Mall and Parnell Place. These projects, and future schemes, will require on-going investment.

It is not just the public realm that requires improvement: the fabric of Cork City also needs investment. There are many derelict or under-used buildings which need rehabilitation and reuse to conserve the City's architectural heritage, to revitalise the City and to attract more people to live and work there.

The City has benefited from the construction of the South Ring Road and the Jack Lynch Tunnel, as traffic volumes through the City have fallen. The City Council is planning to take advantage of the spare capacity released to improve conditions for pedestrians, notably on Patrick Street, by introducing more pedestrian crossings and by gradually dismantling the City's one-way systems and reverting to two-way working.

On-street parking in the City Centre impedes movements for buses, pedestrians, cyclists, as well as other traffic. However, many buildings, particularly private houses, do not have off-street parking.

Potential for Development

There are immediate opportunities for the reuse and redevelopment of buildings and vacant sites within the Island, and the surrounding areas.

In the longer term, reduction in use of the City Docks would open up the opportunity for the development of a major new business district and high density housing area in the City. This could be linked via a new river bridge to the City centre and Kent station. The station is currently isolated and somewhat removed from the retail core and also from the bus station. There are plans to redevelop the station in partnership with a private developer and the opportunity exists to create a rail-bus interchange at the station.

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For this approach to succeed it will require re-development of the eastern edge of the City centre, as a link between the Island and the Kent Station/docks area. The environment of this area is quite poor, but there are numerous fine historic buildings, historic urban structure, and good townscape, including river frontages and interesting topography and vistas. These offer unrealised opportunities to conserve and animate historic areas by conservation, re-use and infill.

There is an opportunity to re-balance the City by stressing development to the north. This would be complemented by provision of a North West Link Road. The intersection of this potential North West Link Road and the railway could enhance the potential of Kilbarry and create a major new development node. Preliminary options for such a road are currently being considered by the City Council.

There are a number of opportunities to resolve social and physical difficulties in Cork City and create a thriving vibrant city. However unless development opportunities are grasped, there will be a decline of the centre, driven by investment in suburban locations, encouraged by their accessibility and failure to assemble and deliver land and buildings for investment in the centre.
Increasing traffic congestion in the centre and also inner/middle suburban areas, could lead to poor environmental conditions, declining accessibility and reduced mobility. These conditions will encourage more people to live in the outer suburbs and Ring Towns. Furthermore, increased pressure for suburban development will lead to erosion of the green edges of the City and to urban sprawl.

7.7 Development Potential - Metropolitan Cork

An analysis of the development potential of the area to be known as Metropolitan Cork was carried out. The results of this are summarised below.

Ballincollig
Existing Situation
Ballincollig is a modern, rapidly growing, low density town immediately west of the City. Together with surrounding villages, it has a population of over 20,000. It is bounded on the north by the River Lee, a protected area, and a steep hillside beyond, and separated from the City by a Green Belt at Bishopstown.

Potential for Development
The redundant barracks in the town centre will come on-stream for mixed-use development within the Plan period, and represents a major opportunity for the town.

The proposed Ballincollig bypass could release development land to the south of the settlement and also allow the creation of a strengthened local town centre, which is currently undeveloped. The bypass will also connect it to the southern suburbs with their associated facilities. Education, research and science type uses could expand in Ballincollig, incorporating an academic village or science park. The potential North West Link Road is proposed to connect from the Ballincollig by pass at Poulavone northwards, along the eastern edge of the settlement.

The existing main street in Ballincollig forms part of the N22, which connects Cork to Macroom and Kerry. The town centre therefore suffers from traffic delays even in non-peak periods. When the bypass is complete, there will be an opportunity to reallocate road space in the town centre to pedestrians and public transport. With the redevelopment of the Barracks site, this would make a substantial improvement to the town. The bypass will also release capacity on the former road links to the City centre (via Carrigrohane Road or Model Farm Road), giving reasonable scope for the introduction of high quality on-street public transport systems, which is a priority for Ballincollig.

Water supply and sewer capacity are adequate, but an improved surface water disposal control system and a storm water control system are required in the short term.

Conclusions
There is ample opportunity to consolidate Ballincollig's growth within the existing town boundary. This should be utilised in the short term, with development of Ballincollig gradually reducing over time.

Carrigaline & Ringaskiddy
Existing Situation
Carrigaline has grown rapidly in recent years, to a population of about 10,000, reflecting its good access to employment centres at Cork City, Douglas, Ringaskiddy, and the Shanbally industrial zone. It retains a strong separate identity. It has good retail and other services, but these are dispersed around the single main street which suffers from traffic congestion. Ringaskiddy is the centre of port operation and related industries in Cork, as described previously.

Potential for Development
Major expansion of Carrigaline southwards is constrained by steep topography and remoteness, but the proposal for completion of the eastern relief road would round off the town's development in the south and release significant additional development land within the line of the road. The estuary of the Owenboy River and the coastal zone tends to constrain expansion eastwards and the steep sided river valley limits expansion westwards. Development is currently occurring to the north of the town (south of Shannonpark), and there is some scope for more expansion in this area; although this would not help consolidate the town in the same way as development to the south and east. It could also intrude into the Green Belt.

Land supply in Ringaskiddy is becoming scarce. As described previously, the Port's plans for expansion include land reclamation; however, land in the area should generally be reserved for port-related or complementary uses.

Traffic congestion extends beyond Carrigaline town centre into the wider area, and is a particular problem at Ringaskiddy. This will be partially addressed by the NRA/County Council's proposed upgrading of the N28, in addition to the relief route. A detailed local transport plan for Carrigaline/Ringaskiddy is urgently required however.

Existing routes from Carrigaline to the city centre are either via the South Ring Road and South City Link, a high speed but relatively long route, or via Douglas Village, a slow but relatively direct route. Neither route is ideal for high capacity public transport systems, and this is compounded by relatively hilly topography as well as a low density catchment. Nevertheless, public transport links to the City need to be significantly upgraded.

Land north of Carrigaline is within the Green Belt and development here would have an adverse impact and ultimately even merge Carrigaline with the southern suburbs. The sanitary and electrical service supply in the short term presents no major problems. Ringaskiddy has a large spare capacity of electrical supply at lower voltages.

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Conclusions
Major growth of Carrigaline is not desirable and overall it is concluded that the emphasis should be on rounding off the town's development. Growth in the Ringaskiddy area should be limited to port-related activities or industries, or complementary uses. A Local Area Plan is required for the area, which could also embrace Carrigaline.

Cobh, Monkstown and Passage West
Existing Situation
These attractive settlements grew as small nineteenth century port towns in Cork Harbour. Cobh, which has a population of 11,000, is by far the largest and has an architectural ambience and environmental setting of the highest quality. There is much heavy industry in the area, including a steelworks on Haulbowline Island (now closed), a shipyard and a fertiliser plant at Marino Point facing Passage West. Road links are fairly circuitous, but a frequent vehicle ferry links Cobh with Monkstown/Passage West and there is a branch railway line from Cobh to Kent Station.

Potential for Development - Monkstown and Passage West
Sections of the former railway alignment to Passage West and beyond have been converted to a segregated walking and cycling route. This amenity is well used, and is one of the few facilities of its type in Cork. The potential to reinstate a railway along this route is limited for two main reasons. Firstly, the catchment of the railway would be small, so it would not attract enough passengers to justify major investment. Secondly, the level of investment needed would be high because key sections of the alignment are no longer available. At the City end it stops at Atlantic Pond, well short of any currently useful destination in the City. The section from Mahon Point to Rochestown / Passage is also incomplete. On this basis, it is not suitable as a strategic transport link. At a local level, its role as a "Green Route" is important. As part of the Docks redevelopment, and the proposed Mahon Point development, it would be worth considering if the mini buses, or even ultra light trams, could be viably and feasibly introduced on the Green Route, sharing with pedestrians and cyclists.

Potential for Development - Cobh
Land is available north of Cobh in a valley, which could be linked to the railway. The water supply would be adequate (on the basis of schemes in progress) and sewerage would be provided by the Lower Harbour main drainage scheme currently in design.

Minor investment in additional 38kV electrical infrastructure would be needed to accommodate industrial and commercial development.

In the event that the present industry installations at Haulbowline Island, Rushbrooke and Marino Point were to close – which is a possibility over the Plan's time horizon, then major medium to high density mixed-use redevelopment, (perhaps including high quality workplaces, apartments and cultural projects) could be pursued.

Conclusions
It is concluded that moderate growth in and around Cobh could be environmentally acceptable, economic on infrastructure, & well served by public transport. However, the centres of Monkstown and Passage West lie on narrow, heavily trafficked roads which cannot be bypassed, and the generally steep hillsides and townscape and landscape quality constrain future expansion.

Midleton - Carrigtwohill
Existing Situation
Midleton is a substantial and self-contained historic town of 9,000 inhabitants with an identity wholly distinct from that of Cork. The distillery is a significant tourist attraction, as are the local Ballymaloe Cookery School and hotel and the nearby coast. Carrigtwohill, with a population of over 6,000, is smaller and less self-contained than Midleton, but is closer to Cork and has proved itself able to attract employment on well located industrial estates.
The towns are both surrounded by pleasant landscape and areas of nature conservation importance.

Potential for Development
The two settlements lie along a potential multi-modal corridor leading from Cork to Waterford and Rosslare via the N25 and the former railway line to Youghal. Major expansion at Midleton is dependent upon the provision of a new local road system to relieve the centre, new sanitary infrastructure, and diversion of commuter traffic on to the railway. Carrigtwohill has considerable amounts of good building land to the north and west and access to the former railway. The potential to develop a multi-modal transport corridor, with good land supply and proximity to Cork should be attractive to local and inward investing businesses.

Additional infrastructure costs for short term development would be low because schemes are already committed, although the sewage treatment plant would have to be upgraded. In the long term, infrastructure would be needed to extend the trunk water main and new reservoirs, extend the existing Midleton sewage treatment plant, and provide a new surface water disposal system and groundwater protection measures. This could be economic if major development were proposed.

The electrical requirements for Midleton town could be catered for by a new 110/MV development on the existing station at Midleton. This station will require a second 110kV line to provide a secure supply for Midleton. Midleton hinterland will also take supply from the new Midleton 110kV/MV station. The hinterland will benefit significantly from the security provided by the second 110kV line to Midleton.

The IDA Industrial Estate in Carrigtwohill is serviced from an existing 38kV Station. As a 110kV line crosses the site, a looped 110kV/MV station could be built that would provide for major expansion at this location. This station would also cater for major development at Glounthaune.

Conclusions
Large-scale development could be accommodated in the area which, in the early phases, should concentrate at Carrigtwohill.

Glanmire Area
Existing Situation
Glanmire, Riverstown and Sallybrook lie in the valley of River Glashaboy, forming a single linear settlement. Although they have been expanded recently, their character is enriched by the original, historic hamlets and the complex topography of the area.

The area generally has good road access to the main road network. The existing Cobh/Cork railway lies at the southern edge of the area, with stations at Glounthaune and Little Island. Little Island itself is a major, and growing employment area.

Potential for Development
There is little future growth potential in the centre of the area without threatening the landscape. The land north of Glounthaune together with Little Island might have some potential as rail-commuter settlements via a bus feeder service and a Park and Ride facility.

Conclusions
Whilst short term services are available on Little Island, development at Glounthaune would require a new reservoir at Glashaboy and water supply extension and a sewer connecting to the treatment plant at Carrigrennan.

Ballyvolane
Existing Situation
To the east and south-east of Ballyvolane lies the Glashaboy River valley, with steep slopes and mature landscape. To the north, the land is relatively flat but is in the Green Belt, although most of the landscape is not of the highest quality. Access to the railway is poor, and this would need to be overcome by good feeder bus services.

Potential for Development
Although the alignment of the proposed North West Link Road is yet to be finalised, it is likely to enclose an area of undeveloped land suitable for housing. The provision of infrastructure for this land could be economic. Water supply and sewer capacity is already adequate, but surface water disposal works would be needed. Development at Ballyvolane can be serviced from the additional 110/MV capacity at Kilbarry.

Conclusions
It is concluded that development beyond the proposed North West Link Road would not support public transport objectives. A moderate scale of development within the line of the proposed North West Link Road could be planned in conjunction with the road design and planning process, with suitable densities.

7:

Development Capacity and Potential

Blarney Area

Existing Situation

Blarney is a small historic town with a notable tourist industry based on the well-known castle, and Blarney Woollen Mills. The town is surrounded by a number of sizeable settlements such as Tower, which are popular residential locations giving a total population for the whole area of over 16,000.

Potential for Development

The combined advantages of the area's proximity to the City, in particular its proximity to the northern part of the City which needs regeneration and housing, and its excellent transport infrastructure, make the area between Blarney and the City highly attractive for development.

The topography of the area is complex and generally well wooded and the small and circuitous rivers are environmentally sensitive. Main road access is from the nearby N20 Mallow – Limerick road, and the former Blarney station lies 1km north-east of the town, on the Mallow-Cork main line. There is also a disused siding at Rathpeacon, with sufficient land for parking, and a crossover so that commuter trains could terminate and reverse.

The Rathpeacon area lies within the Green Belt, but appears to be developing rapidly, partly as the result of permissions being granted for single dwellings on large plots. If the boundaries of the Green Belt were to be altered, then the area, particularly to the north around Monard, Rathpeacon and Kilcully, offers development opportunities based upon the railway and proposed North West Link Road.

Only a small part of this area would be available in the short term; this would require a water supply extension from the City or Blarney town, and foul and storm sewer connections. Long term development would require a water supply trunk main extension from Inniscarra plus new reservoir and a new effluent treatment plant. In addition, storm water drainage will need to be provided and this may be limited by the capacity of the existing watercouses discharging from the area.

There is a 110kV line approximately 3km north of Blarney at Waterloo. Development in Blarney would bring forward the need for 220kV infrastructure west of Blarney.

Conclusions

For strategic reasons, the area between the City and Blarney, along the railway line is amongst the most attractive areas in the Study Area for development. The cost of development and supply of infrastructure would be relatively high and consequently high densities would be required.

7.8 Development Potential - The Ring Towns

Mallow

Existing Situation

Mallow has a prosperous economy and good national and regional access by both road and rail, and it lies on the potential Galway – Limerick - Cork growth axis. The current population is estimated to be 10,000, and the town possesses a comprehensive range of retail, educational, health and sporting facilities, serving a wide catchment area.

Potential for Development

The town is divided into four quadrants by the Blackwater River, the N20 to Limerick and railway, so that it has a rather dispersed character. There is a plentiful supply of building land to the north and south, but development to the east and west is constrained by the Blackwater Valley.

Substantial areas of land are considered serviceable in the short term east of the railway. In the long term, additional land can be served by the construction of a new reservoir, a new trunk main and sewerage treatment plant and surface water trunk sewer.

There is an existing 110kV station in Mallow town, and 110kV/MV capacity could be installed to cater for industrial and residential development in the north relatively easily.

Mallow's potential could be further improved by diverting the N72 from Oliver's Crossroads, north of the town, to meet the N20, thus relieving the town centre and accessing new development. A new railway station could lie at the centre of such a development, and a similar situation could be created to the south, thus balancing expansion north and south.

Conclusions
Mallow has excellent development potential and, even in the short term, could accommodate major growth.

Fermoy
Existing Situation
Fermoy is an attractive, historic town of over 6,000 inhabitants with good services and a proven ability to attract modern industry. It is strategically located on the Cork-Dublin road (N8) and when the proposed bypass is built, the relief to the centre should allow many town improvements and also improve primary access to development land, particularly to the north. Reliance on a single bridge, however, limits internal north-south circulation, and there is a danger that the bypass could encourage retail and service location at or near the junctions with the old road, and undermine the historic centre.

Potential for Development
The Blackwater Valley, an area of scenic importance, constrains the development of the town east and west, and to both south–west and south-east development growth is constrained by steep hillsides. To the north, the valley of the River Funshion may be regarded as a constraining factor.

The new water supply scheme, currently undergoing construction, and the upgrading of the sewage plant already committed, will be adequate to cater for growth in the short term. In the long term, the opening of new development areas will require a new reservoir to the north, a new (or expanded) water source and sewerage treatment plant, and a surface water disposal system.

Additional electrical infrastructure will be required to support development, including a second 110kV line.

Conclusions
It is concluded that Fermoy could receive moderate growth without excessive environmental impact once the bypass is opened. Some commuting to Cork City is inevitable, and an upgraded bus service should be introduced to offer an alternative to the car. A Park and Ride site on the N8 on the City fringe would also be advisable.

Youghal
Existing Situation
Youghal, which has a population of over 7,000 inhabitants, is a local service and tourist centre that has attracted a number of high-tech firms. It is a very fine historical town situated within a beautiful landscape setting, much of which is also of ecological importance.

Potential for Development
The N25 between Rosslare and Cork currently passes through the town causing congestion and a poor environment. A proposed new bypass will remove much of the traffic congestion and allow urban renewal. The bypass will also open up extensive new areas for development, which can be readily serviced through a water supply project and a new sewerage treatment plant which are already at planning stage. However, there are quite steep hillsides separating the historic centre from the new areas and housing will need to be well linked to the centre, otherwise the growth of new retail developments will be encouraged along the new bypass, thus undermining the role of the centre.

Future development in Youghal will require the provision of additional electrical infrastructure. This will be a looped 110kV/MV station which will require two 110kV lines. Re-opening the rail line to Cork would considerably strengthen the attraction of the town.

Macroom
Existing Situation
Macroom is a market town with an estimated population of 3,000 people. The main employer in the town until recently was the General Instrument factory at Hartnetts Cross, which had a workforce of nearly 600. The town is particularly attractive, with a fine townscape, very good facilities for its size, and a beautiful landscape setting. The town has reasonably good access from south west, north west and west Cork, providing it with a large rural hinterland stretching well beyond the boundaries of the Cork Area Strategic Plan. The hinterland includes the Gaeltacht area, giving Macroom a unique and special cultural heritage among the study's Ring Towns.

Potential for Development
Topographic and environmental constraints mean that the creation of a compact, spatially balanced town structure will require exceptionally careful planning and urban design. To the east is a sensitive and beautiful valley, including the wide waters of the River Lee, which is dammed for water supply at Inniscarra. To the south, the steep hillside provides an unspoilt landscape setting for the town and beyond is the extremely sensitive environmental area of The Gearagh. The main route to Kerry (N22) passes through the centre of Macroom. The NRA and Cork County Council propose to promote a bypass that would benefit the town and are now considering possible options. An interim local traffic management plan and development of off-street car parking would be beneficial.

Population growth in Macroom will require investment in water and sanitation infrastructure in the short term. The expansion of Macroom will necessitate wise use of building land and higher densities than in other comparable settlements, due to the topographical restrictions and in order to maintain the attractive architectural character of the town.

7:

Development Capacity and Potential

Northwards expansion is dependent upon the line of the proposed bypass and could be costly to service. Electricity supply will be good after completion of the upgrading of the existing 38kV sub station to 110kV/mV.

Macroom is suggested as a focus for industrial development in the North and West Cork Strategic Plan. This Study has a rural development brief. Because of Macroom's strategic location in relation to some of the County's most vulnerable rural areas, the town is considered to merit special attention, investment and promotion.

Conclusions
Growth and development of Macroom is particularly important in the context of its pivotal point between the rural areas of North and West Cork. Nevertheless any growth will need to be carefully planned given local environmental constraints, cultural heritage and the cost of supplying services, and will need to be well integrated with plans for the proposed bypass.

Kinsale
Existing Situation
Kinsale is an historic town of 5,000 people overlooking a fine natural harbour and set within a landscape of outstanding beauty. The town's success is due to an expanding tourist industry and a large pharmaceutical plant at nearby Dunderrow. The town is well connected to Cork and Bandon by regional roads, but the narrow medieval streets are easily blocked by traffic and on-street parking can cause congestion.

In keeping with its role as a tourist centre, Kinsale needs an improved pedestrian environment, which may require stringent traffic management measures during the tourist season.

Potential for Development
Expansion of the town – except for infill, would be heavily constrained by environmental and topographical consideration and water supply. Furthermore, major expansion would further congest the centre and might undermine the attractiveness of the existing urban quality.

Further development in Kinsale would require the provision of a looped 110kV/MV station and two 110kV lines.

Conclusions
The growth of Kinsale will be constrained by environmental and topographical constraints and limited water supplies. Local traffic management is required. The coast zone should be protected and managed.

Bandon
Existing Situation
Bandon's current population is estimated to be nearly 5,000, having grown rapidly in recent years after many decades of decline. The food industry is an important source of employment in the town, but there has also been a growth in pharmaceuticals and electronic industries. Bandon is a town of architectural importance and character and has an attractive landscape setting.

Bandon's situation on the N71 to Skibbereen and Bantry causes problems with the conflict between through traffic and local traffic. The Southern Relief road scheme, which was completed in January 2002, will relieve the town of Skibbereen traffic. However, this road does not serve traffic to and from the Bantry direction which travels through the town over the only bridge, with significant impact. A possible option may be to link the Southern Relief Road to the Bantry Road some distance to the west of the town, providing a western relief route.

Potential for Development
Land immediately north and south of the town rises quite gently, providing some development opportunities. The relief road provides access to development land to the south. Significant development of land to the north is dependent upon provision of a second river crossing. The Bandon River represents a major environmental restraint to expansion in the valley to the west and the north-east.

Minor short term development on the south could be accomplished by upgrading the existing sewer network and building new storm-water sewers. Expansion northwards would require a new reservoir north of the town plus extension of the sewerage treatment plant. ESB is installing 110kV/MV capacity at the existing station, located to the north of the town, which will create spare capacity for development.

Conclusions
Careful planning, particularly at Kilbrogan on the north, coupled with a sensitively located and designed river crossing could overcome environmental constraints and permit significant expansion in addition to the town's natural growth and regeneration.

7.9 Development Potential - The Rural Areas

The Study Area contains over 75 villages as defined in the County Development Plan, ranging in size from large, historic settlements such as Innishannon, to concentrations of a few houses. The majority of settlements possess basic community facilities, such

as a shop, a pub, playing fields and a community hall, and over 80 per cent have a primary school. However, few villages are connected to mains sewerage systems. Water supplies to villages are generally available, although often at a high cost.

Many villages possess buildings and streetscapes of architectural, historic or visual interest and a large number are located in areas of scenic beauty or near areas of nature conservation interest.

Two strong trends are having a profound effect upon the viability and character of the rural hinterland of the Study Area. The first is the steady and inexorable decline of employment in the agricultural and forestry sector. Forecasts by ESRI suggest that employment in this sector will continue to fall by over 2 per cent p.a. for the next 15 years, having fallen by nearly 3 per cent in the period 1995-2000. This decline is despite efforts by the Government to encourage investment in alternative forms of rural employment, as evidenced by the extensive commercial forestry planting carried out in the upland parts of the Study Area in recent years.

The second trend is development of commuter housing in the rural areas, particularly in the form of the construction of individual dwellings in open countryside. This is believed to be, in part, a response to a shortage of suitable or affordable dwellings in urban areas. It has also led to a population increase in many of the rural areas and high levels of affluence as shown previously in Figure 7.3. However, the quantity of such developments in the overall context gives serious cause for concern. The County Council received applications for some 2,300 one-off dwellings in the countryside in the year 2000 alone. This level of one-off development is not sustainable and will lead to significant increased costs to the community for the provision of the necessary infrastructure and local health services in the future. In addition, most such developments rely on a locally based water supply and septic tank based wastewater systems. The issue of an acceptable standard of water supply and containment of ground water and aquifers will present a major and expensive challenge for communities in the future unless the current level of one-off development is seriously curtailed and limited to local inhabitants.

These trends need to be considered in the context of national objectives. It is Government policy to create more sustainable development patterns, including the need to minimise the loss of agricultural land to urban development, reduce the per capita cost of providing new infrastructure services, and reduce the use of cars through the provision of better public transport. The achievement of this policy will require an overall rise in housing densities and for development to be concentrated rather than widely dispersed. Closely linked to and supportive of this approach is the emphasis upon restricting development in the countryside in order to protect attractive rural landscapes, areas of nature conservation interest and cultural heritage and the coastal zone.

Clearly, there is a need for some rural development in connection with agriculture, forestry and other rural businesses; there are also essential rural accommodation needs in the locality.

The concentration of such development in existing villages and towns would promote the viability of communities and villages and be more amenable to the provision of economic infrastructure support.

In a large number of villages, land has been allocated in the County Development Plan for either new housing or agriculture with options for low density housing. In other instances, the development boundary of the village has been defined, but zoning is subject to the provision of adequate sanitary services. While it is not possible to calculate precisely the total number of new dwellings that could be developed within these broad allocations, it is estimated that they are well in excess of the demand likely to be generated by local employment opportunities.

SUPPORTING ANALYSIS

B

8: Alternative Spatial Development Strategies

8.1 Approach

This chapter describes the three alternative strategies that were evaluated as part of the process of generating a preferred strategy. Each strategy was developed as a realistic response to the planning issues and takes into account existing commitments in terms of planning consents and the availability of serviced land. They were formed by creating a coherent set of policy options that were not only compatible with each other but were also mutually reinforcing so as to release synergies. In concept, each of the strategies was capable of implementation and none was extreme. When the strategies were quantified significant differences were created to assist in mathematical modelling of transport. It is normal to do this in such testing, since exploratory hypotheses which are too similar do not reveal clear lessons or insights. Then a preferred strategy was created by synthesis and tested.

Each alternative is described below in Section 8.2, and illustrated separately for each alternative on Figures 8.1. - 8.3. The spatial and transport implications of each strategy are discussed in Section 8.3, and an overall evaluation of the alternatives is given in Section 8.4.

8:

Alternative Spatial Development Strategies

8.2 The Alternative Strategies

Strategy A

The main themes of this strategy is an emphasis upon the importance of market-led growth and maximising the potential of Cork City. Growth would be biased towards the southern part of the Study Area.

The major existing economic generators would be fully exploited, and established market preferences would be largely respected. The strategy recognises the value of agglomeration, clustering and large labour markets in the generation of inward investment.

The larger part of development would be focused in the southern arc from Ballincollig in the west to Carrigaline and Cobh in the south and east. Existing education and research facilities would be exploited to create a 'Science City' at Ballincollig, and linked to growth at the airport and port. Housing at Ballincollig and Carrigaline would be greatly expanded. Growth to the north of the City would also be quite substantial. There would be substantial growth in Carrigtwohill following emerging trends but growth at Midleton would be limited.

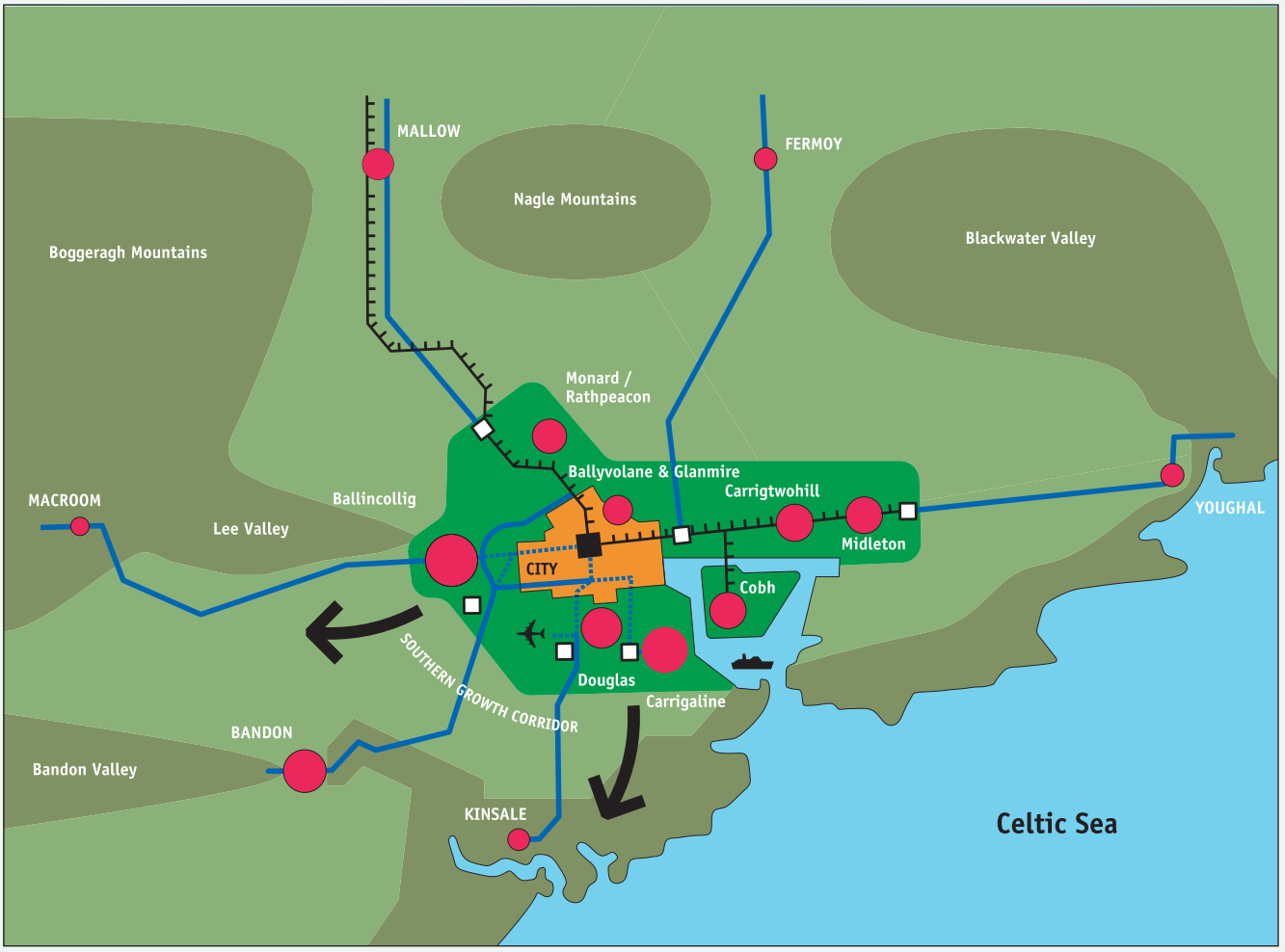
The growth of Ring Towns would be jobs-led. The balance between towns would reflect inherent potential and constraints, but the south-west towns, particularly Bandon, would benefit from the synergy of the southern growth strategy. Rural areas would have low growth targets except for a minor bias to the south-west.

The scope for conservation and urban renewal of the City would be relatively good, with new offices, retail, and higher density housing created in the inner parts of the City and in suburban centres.

The main public transport emphasis would be on-street running systems to integrate the southern growth corridor, and to link it to the City centre. Rail improvements of a relatively modest type would bring significant benefits to northern expansion areas. 'Green Routes', or quality bus corridors and bus feeders to prime routes would be stressed, as would strategic Park and Ride interchanges.

Public transport systems would improve access to opportunities, but opportunities will not specifically be delivered within the more deprived areas in the northside of the City.

Figure 8.1 **Strategy A**



Legend

- Railway
- Growth Areas
- Quality Bus
- Major Roads
- Park + Ride
- Renewal of City Centre and Kent Station Interchange
- Expansion of Port
- Expansion of Airport
- City Improvement
- Greater Cork Greenbelt: no commuter houses or major employers
- Rural Conservation Zone: Agricultural/Landscape Priority
- Protected or Remote Areas
- Overspill Tendency

This plan is NOT intended to be site specific and indicates possible broad locations for future development.

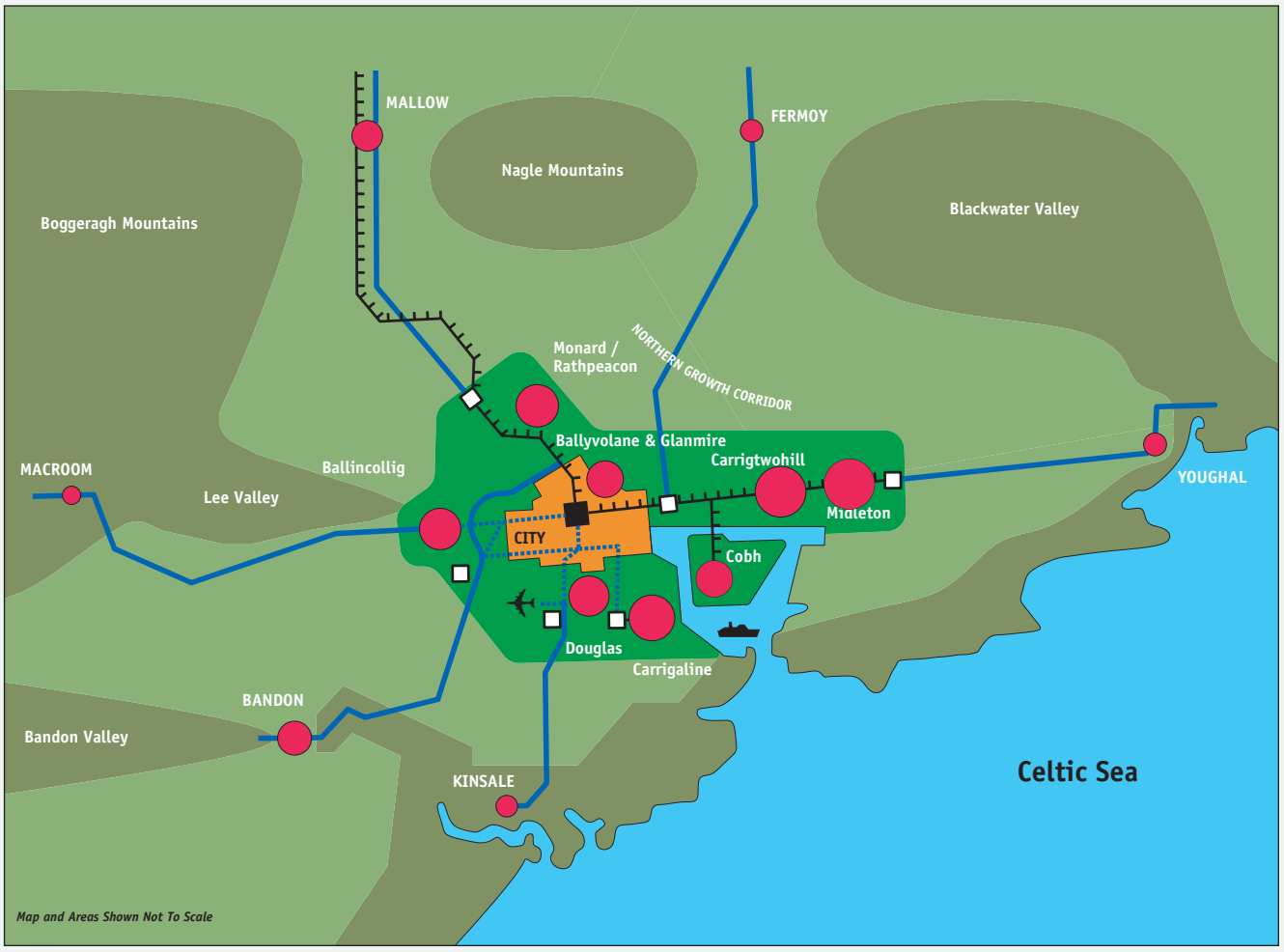
The Green Belt south of the City would be affected and ecological corridors and community identity would be reduced, although the best landscape could be conserved, and settlements kept separate. Housing would be built at higher densities but within generous landscape envelopes. Impact on the coastal zone might be significant.

Strategy B

Strategy B seeks to guide development to those areas most able to accommodate further economic development and best suited to the provision of good public transport. Like Strategy A, it is focused on Metropolitan Cork as the main economic driver for the City-Region and relies on the establishment of a strong public-private partnership and major investment in the local rail network.

Public sector initiatives would be needed to encourage investment in designated areas – mainly to the north, north-west and east of the City, as well as the inner areas of the City. Since most jobs would be located on the north axis and the best public transport would integrate it (via the City centre), with the rest of the City-Region, this would benefit the more disadvantaged parts of the Study Area.

Figure 8.2 **Strategy B**



8: Alternative Spatial Development Strategies

The larger part of development would be focused in the northern arc along the line of the existing and former railway between Blarney and Midleton. At the centre would be strongly regenerated inner areas in the City, with major growth in both jobs and population, and other growth centres at Carrigtwohill and Cobh. Growth would also occur on the west and south sides at Ballincollig, the airport and Carrigaline, but on a smaller scale, aiming to capitalise on the economic potential of the existing education and research institutions, the airport and port.

Growth of the Ring Towns would be jobs-led. Growth would reflect the inherent potential and constraints, so minimal growth in the south-west towns, and a relatively stronger focus on growth at Mallow, Fermoy and Youghal reflecting their accessible locations would be expected.

Rural development policy would, in general, resemble that for Strategy A, with low growth restricted to defined envelopes around key settlements.

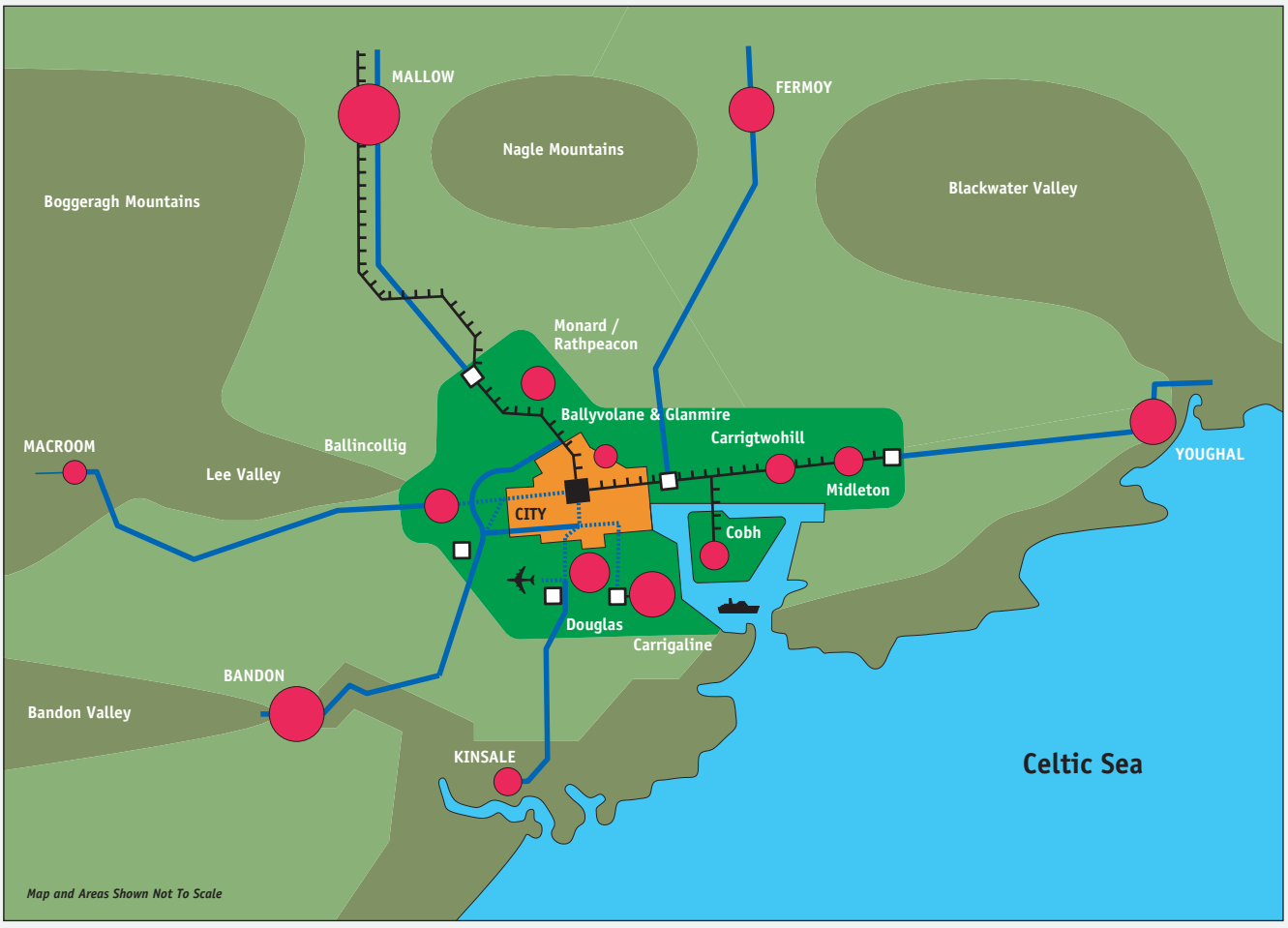
The stress on City regeneration would resemble that for Strategy A, but it would be stronger since the public transport and spatial system would deliver better access for greater numbers of people. Population and jobs would rise faster, and the challenge of land assembly, advance servicing and access, site preparation, marketing and conservation would be correspondingly greater.

The main transport stress would be on an improved rail system connecting existing and new stations, around which development would coalesce. Stations would become vital local centres, and some would have Park and Ride facilities to intercept car travellers and all would have feeder buses. A high quality bus system would connect from the south and west of the City with Park and Ride stations to intercept car users. Green Routes or Quality Bus Corridors would connect suburban nodes to the centre, and strong car restraint measures would be applied in the City.

For the Ring Towns and Rural Areas, the transport strategy would resemble very closely that for Strategy A, although with a greater focus on growth in the corridor of the Mallow-Youghal railway.

A small area of the Green Belt on the northern side of the City would be affected, whereas that on the

Figure 8.3 **Strategy C**



south side would not be. The threat to the coastal zone would be relatively lower.

Strategy C

This strategy focuses on a stronger role for the Ring Towns and the rural areas and a lower rate of growth for Cork City. It anticipates a substantial effort to facilitate and promote major growth in the economies of the Ring Towns, including a significant element of housing-led growth.

The economy of Metropolitan Cork would grow more slowly than that which the other strategies imply. Whilst some clustering would be foreseen on the basis of natural advantage, the creation of large over-specialised clusters in Ring Towns would be difficult and expensive to achieve and might require in-commuting. The lower levels of public transport access to the City might reduce its potential for employment creation, and there would therefore be pressure for much more suburban investment.
A major effort would be made to locate affordable housing to the Ring Towns so as to avoid their concentration in the City, although this would be constrained by the lack of public transport, a more restricted range of job opportunities, and more limited support systems.

Legend

Development would be on a smaller scale than that implied by the other alternatives and it would be more evenly distributed around the urban fringe. The greater growth of suburban centres would be expected due to better car accessibility and availability of parking space.

All Ring Towns would grow more than with the other strategies, with Bandon the main focus in the south-west sector and Mallow the main northern focus, with Fermoy and Youghal also growing strongly.

Rural hinterland populations would grow more than under Strategies A and B, but would still be concentrated, in principle, into the envelopes of key settlements. The majority would live in expanded villages or small towns on or near major movement arteries between the City and the towns, including around re-opened rail stations.

Urban renewal would concentrate more on housing – particularly of high quality – and also on speciality services, leisure and culture, and less on office employment. Increased car use and relatively poorer public transport might entail less commercial potential than under the other strategies.

Dispersal of development would reduce the feasibility of major public transport improvements and increase car use. As the dispersed population would be more inclined to use cars, so car access to the City centre area would be more important than that implied by the other strategies, although commuting to the City would reduce, relieving some of the stress on the road network.

Inter-town and rural public transport or quasi-public transport (such as employers' buses, taxis, communal taxis and minibuses, and car sharing) would increasingly be required, as they would for Strategies A and B, to a lesser extent. As the towns would still be relatively small they would not sustain other public transport.

The wide dispersal of development would tend to reduce the localised intensity of environmental impact, although the cost of infrastructural and ameliorative measures would be expected to rise. However, the reduction of isolation and increase in vehicular traffic could spoil the character of the countryside.

8:

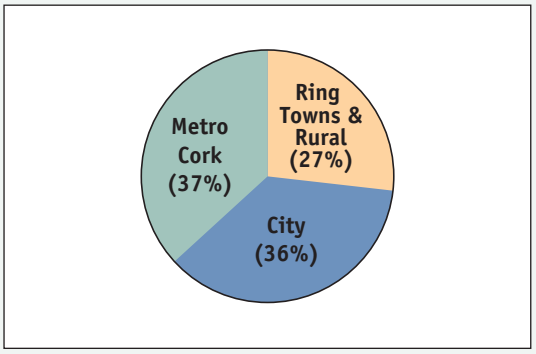
Alternative Spatial Development Strategies

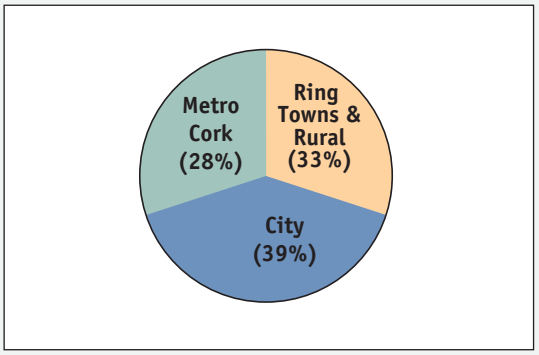
Figure 8.4 **Distribution of New Households and Jobs in Alternative Strategies**

Households

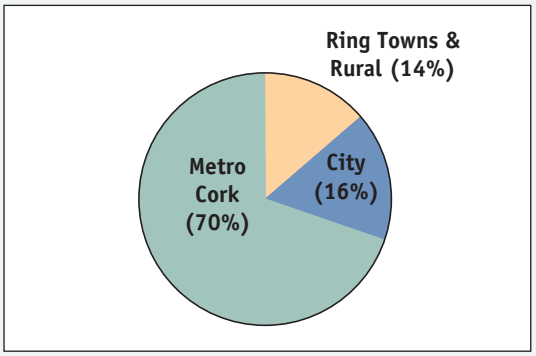
Jobs

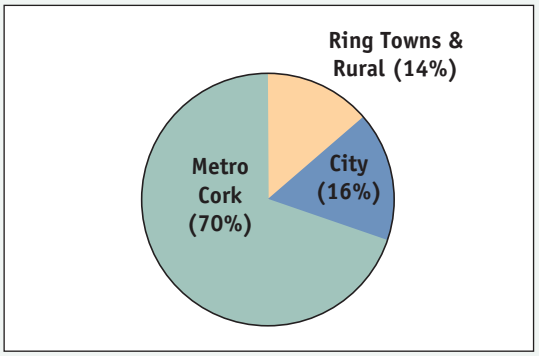
Existing



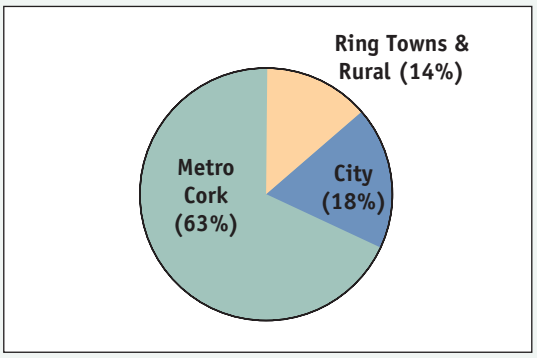


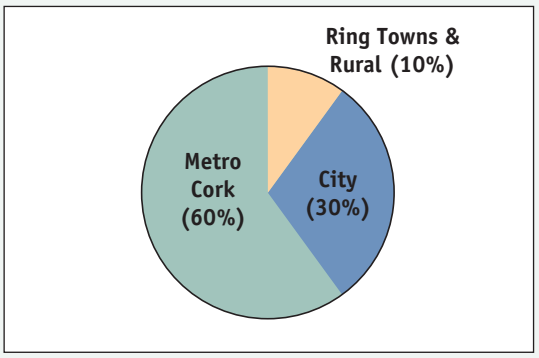
Strategy A - 2020



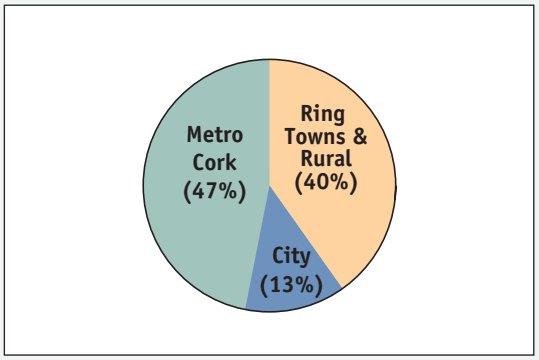


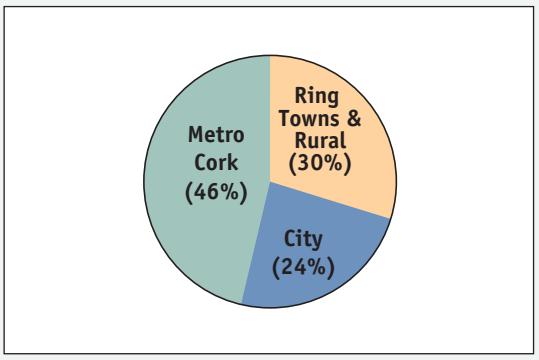
Strategy B - 2020





Strategy C - 2020





8.3 The Spatial Distribution of the Alternative Strategies

All three alternative strategies show that the bulk of population growth will take place outside the City, with the greatest increase in all alternatives occurring in Metropolitan Cork. However, in Alternative Strategy C, growth in the Ring Towns and rural areas would be almost as significant. This is shown clearly on Figure 8.4. For comparison purposes, the existing distribution of population within the Study Area is also shown.

8.4 Transport Assessment

The transport implications of the alternative strategies were evaluated by using a strategic transport assessment model. The model calculated travel demand arising from the continued growth of Cork and its surrounding area, and how demand varies depending on how that growth is spatially arranged. The model took account of rising car ownership and changing travel patterns, and was based on the development of a gravity generation and distribution model to predict travel demand.

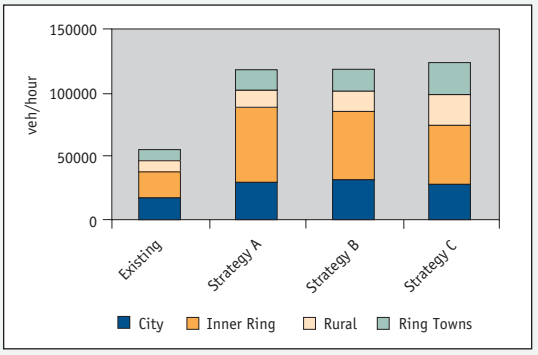
The assessment is briefly summarised below in terms of overall traffic growth, future traffic speeds and journey times, and road links that will operate over capacity in future. The viability of potential public transport schemes is then addressed.

Future Traffic Conditions

The over-riding conclusion of the transport assessment was that the demand for travel will increase dramatically over the 20 year period of the Cork Area Strategic Plan. Without policy measures and infrastructure improvements to reduce car dependency, more travellers will drive cars rather than walking, cycling, using public transport or car sharing. This, in conjunction with population growth, will result in a doubling in demand for car use in the morning peak hour.

When assessed against the overall growth in travel demand, the differences between the three alternative spatial strategies are small. Strategies A and B have similar demands for travel into and out of the City, while Strategy C generates less travel to or from the City. Strategy C generates substantially more travel in the rural areas and Ring Towns than Strategies A and B. This is illustrated in Figure 8.5 above right.

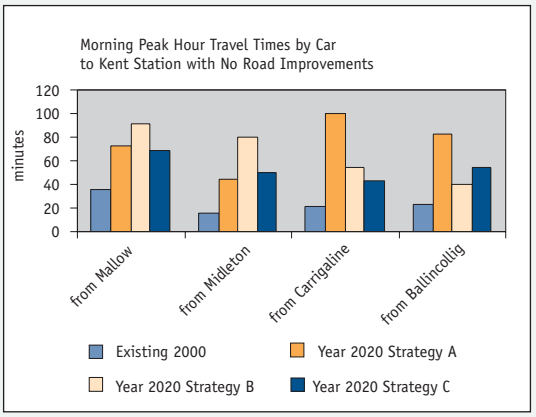
Figure 8.5 **Comparison of Number of Car Trips in the Morning Peak Hour in the Years 2000 and 2020 under Alternative Strategies**



Without any policy or public transport changes, the overall network speed would fall to below half the current speeds, the largest fall being predicted for roads in the suburban and urban areas where speeds fall to around about 5 miles/hour by the year 2020. Conditions would be worst with Strategy A, particularly to the south and west of the City.

It follows that journey times into the City would become much longer by the year 2020. Figure 8.6 below compares average journey times from Mallow, Midleton, Carrigaline and Ballincollig into Kent Station at present (year 2000) with estimated average future journey times in the year 2020 under each of the alternative strategies. In all cases the increase is significant. By far the greatest increases occur in car trips from Carrigaline and Ballincollig under Strategy A, where travel times would become four and five times longer respectively.

Figure 8.6 **Comparison of Car Travel Times at Present (Year 2000) and in the Year 2020**



Public Transport

In accordance with the Cork Area Strategic Plan goals and objectives, all three strategies assumed a high level of public transport provision. Although the need for a fully integrated system is clear, for the purpose of evaluation it has been separated into two schemes. First, a system serving the north and

8:

Alternative Spatial Development Strategies

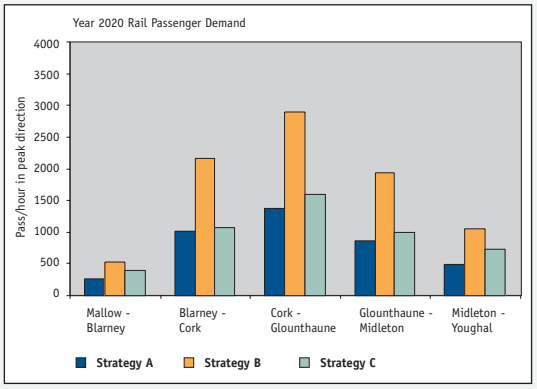
east of the Study Area, based on the existing (albeit partly disused) rail system. Second, a system serving the south and west, running on-street (as large-scale demolition of existing building in the City and suburbs is not proposed).

The analysis of the road network described above showed just how difficult and time-consuming movement by car will become in future. Provision of a public transport alternative is critically important; however, certain levels of patronage are required before public transport becomes viable. Achievement of these levels can be difficult in low-density, dispersed cities and towns. The analysis summarised below provided an overview of future public transport viability for the purpose of evaluating the alternatives and setting the scene for a preferred transport strategy.

Demand for Rail Services in the North and East

Figure 8.7 summarises the forecast morning peak hour flow, in the peak direction, on the rail alignment between Mallow and Youghal. It can be seen that Strategy B generates by far the greatest demand, more than twice that of Strategy A on most route sections. Strategy C generates more demand than Strategy A. All strategies produce over 1,000 passengers/hour in the peak direction between Blarney and Midleton, and Strategy B produces over 2,000 passengers/hour.

Figure 8.7 **Forecast Morning Peak Hour Rail Corridor Passenger Demand**



At the Mallow and Youghal extremities of the proposed rail line, demand falls off substantially and, consequently, these sections may not be viable in the Plan period.

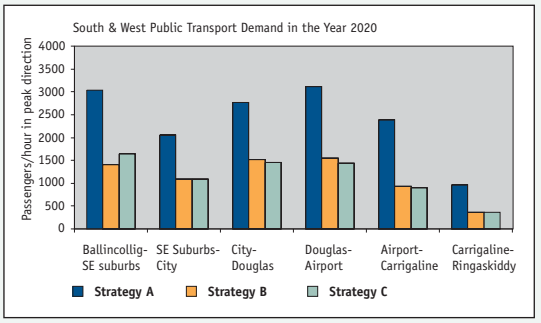
The rail proposals are robust in all three alternative strategies with the high growth scenario in year 2020; however Strategy B would support a far more frequent service, and would best support early investment in the railway.

Demand for Public Transport in the South and West

Demand for public transport in the Ballincollig - City centre - Southern suburbs - Airport - Carrigaline - Harbour corridor was calculated in the same way as demand for the rail corridor described above. This corridor does not have the benefit of an existing railway alignment, and so is starting from a more challenging position in terms of public transport viability. The disused railway line to Passage West and Monkstown has been very successfully developed as a Greenway for pedestrians and cyclists, and this will need to be considered in any proposals for its re-use as a rail link.

Demand for travel in the west-south corridor would be highest with Strategy A. A combination of high overall demand and slow traffic speeds in Strategy A would result in high forecasts for the west and south public transport system, provided that the on-street system can be protected from congestion. As shown in Figure 8.8, Strategy A would generate ample demand to justify investment in for example a very high quality system - possibly a guided busway system (see Appendix I for a discussion on the advantages of light rail, tram and bus-based systems) between Ballincollig and Carrigaline. This would give a very high level of priority, guaranteeing faster travel times than the car, provided that a very high level of car restraint was in place. However, the preliminary analysis indicates that demand would fall a long way short of the threshold required for tram/light rail. On that basis, light rail schemes would not be recommended, even if growth is focused in this area.

Figure 8.8 **Forecast Morning Peak Hour Passenger Demand in the South West**



Strategies B and C would generate less overall demand than Strategy A. There would be little congestion on the road network in the south and west corridor, so car travel would remain attractive. Bus speeds would also remain attractive without radical priority measures. Although there would be insufficient demand to justify a fully guided system with Strategies B and C, a guideway would not be necessary to deliver the same high-frequency, high-quality service. Instead, increased bus frequencies and priority measures would be proposed, with sections of guideway introduced on key links in the long term. The aspiration is for buses in this corridor

to run at least every 10 minutes, regardless of land-use strategy.

Summary of Public Transport Assessment
As described above, Strategy B is the strategy that best supports investment in the railway. By comparison, the situation is not clear in the south and west of the City.

On one hand, Strategy A would generate sufficient demand for substantial investment, but most of this demand arises because travel by car would become very slow. The development of a successful on-street public transport system would involve reallocating space from cars to buses, further increasing car travel times. Selective road widening and road closure to general traffic would also be needed. Some property acquisition may be unavoidable. Detailed studies and consultation would be required to confirm the technical and financial feasibility and public acceptability of this system. The effort in implementing a high priority on-street system should not be under-estimated, but the scope for the incremental introduction of a bus-based system as opposed to an 'all or nothing' tram system is a great advantage.

On the other hand, there will be less overall demand and competition for roadspace with Strategies B or C and it will be possible to provide reliable public transport services with less investment in infrastructure and less draconian car restraint. Overall, Strategies B and C offer better balance and choice in the south and west of the City.

8.5 Evaluation of Alternative Strategies

Each alternative strategy has been evaluated in relation to the project goals (as stated in Chapter 1) and this is summarised in the Goals Achievement Matrix. Appendix J presents the fully completed matrix for each strategy, and this is summarised in Table 8.1 overleaf.

8.6 Conclusions

In choosing between the two dominant Metropolitan Cork options, Strategies A and B, Strategy B was preferred for a number of reasons:

- It promotes social inclusion, particularly as regards access to jobs, city centre services and public transport.
- It has the lesser impact on the Green Belt and better fit within the landscape and nature conservation constraints.
- It best promotes urban regeneration of the inner City.
- The spatial distribution of households and jobs and the rail-based public transport system will lead to somewhat less congestion and less car use.
- It was considered that the economic potential of Strategy B could be easily improved by firm public sector involvement to make the northern axis attractive to investors, and by capitalising upon the unique attractions of the south side in a more selective way.

In comparing Alternative Strategies B and C, there was concern that Strategy B represented too decisive a change to trends since 1996, and that it may be difficult to reverse rural commuter trends to such an extent so quickly. Furthermore, the existing communities in some of the growth areas in Metropolitan Cork may not have the capacity to accept such high levels of growth, particularly in the earlier years of the Plan implementation, whereas the Ring Towns may have the capacity and inclination to accept a higher level of growth.

Strategy C raised a number of challenges. If village development policy did not succeed, then the growth targets could imply continuing suburbanisation of the countryside. Provision of services may be poor, excessively expensive, or uncertain, and this may trap many of the less advantaged, or, alternatively, exacerbate social imbalance in the City.

Furthermore, while it is doubted whether it would be possible to attract sufficient jobs to the Ring Towns, if it were successful, then the extremely high Ring Town job targets would undermine the role of Metropolitan Cork as the economic engine of the region, to the disadvantage of the area as a whole.

The most likely outcome of adopting Strategy C would be that jobs would concentrate in Metropolitan Cork but with substantial housing in the Ring Towns, implying large volumes of car commuting in the absence of good public transport. This situation would make it more difficult to ensure continuing regeneration of the inner areas of the City; encourage investment in the suburbs; and cause the emergence of a 'doughnut city' with a declining, distressed core and large amounts of orbital movement. It was concluded that a balance between Strategies B and C offered the best way forward, with the population target for the Ring Towns and nearby villages set at mid-way between the target of Strategies B and C. This formed the basis for the development of the preferred strategy.

Table 8.1 **Goals Achievement Matrix of Alternative Strategies - Summary**

Goals	Policy Objectives	Alternative Strategies A	B	C
(1) Economic growth Create a highly competitive quality location so as to facilitate the growth of an innovative and advanced (but balanced and robust) economy.	01. To promote an innovative, advanced, high value-added and high wage economy	✓✓	✓	✗
	02. To retain a robust, well balanced economic structure	✗	✓✓	✓
	03. To create an internationally oriented and highly competitive location	✓✓	✓	❍
(2) Social inclusion Promote social inclusion (especially within Metropolitan Cork) by improving access to public transport, education and jobs.	04. To create access to employment opportunities for the most disadvantaged members of the community	✗	✓✓	✗
	05. improve access to facilities and services, including education, health, community services and utilities	✓	✓✓	❍
(3) Environment Enhance the environmental quality and landscape setting of the Cork City-Region, and minimise impacts on ecologically sensitive areas and on built heritage and cultural landscapes.	06. To minimise impact on ecologically sensitive areas	✗	✓	✓✓
	07. To minimise impact to cultural heritage, character and setting of the City, towns and villages	✗	✓	✗
	08. To promote the sustainable use of resources, including waste recycling and effective waste management.	✓	✓✓	✗
	09. To minimise the effects on rural landscape character	❍	❍	✗
	010. To ensure ready access to open space and natural landscape	❍	❍	✓
(4) Balanced spatial development Include the City, its satellites, Ring Towns and rural settlements as part of a balanced settlement system with all levels of development in accordance with varying economic potential.	011. To deliver equivalent benefits to the entire area	✗	✓	✓✓
	012. To locate appropriate economic activity in smaller settlements or centres	✓	✓	❍
	013. To avoid excessive routine car commuting	✓	✓✓	❍
	014. To create a dispersed location pattern within Metropolitan Cork	✓	✓	✓✓
(5) Urban renewal Recognise the City as the heart of the City-Region. Promote a high level of economic activity in the city centre and ensure that the housing stock and urban services retain their attractiveness in general balance with the suburbs. Synthesise urban renewal with conservation of historic form and character.	015. To promote the city centre as the major centre for comparison shopping, services and cultural activities in the region	✓	✓✓	❍
	016. To promote regeneration of run-down urban areas	✓	✓✓	❍
	017. To provide high quality public transport to reinforce the role of the city centre	✓	✓✓	✗

Table 8.1 **Goals Achievement Matrix of Alternative Strategies - Summary** (contd.)

Goals	Policy Objectives	Alternative Strategies A	B	C
(6) Transportation Maximise the use of fully accessible public transport by co-ordinating building form, use and density with high quality bus and train services as well as regulating cars and other traffic. Promote walking by improving the pedestrian environment.	018. To ensure the provision of a well functioning, integrated public transport system.	✓	✓✓	❍
	019. To ensure the provision of a defined standard of public transport, at reasonable cost	✓	✓✓	✓
	020. To ensure the timely and cost effective delivery of the accelerated investment in infrastructure.	❍	✓✓	❍
	021. To reduce car dependency	✓	✓✓	✗
(7) Infrastructure Minimise the cost of providing water, sewerage, electricity, gas and telecommunications services to the population.	022. To maximise the use of existing infrastructure	✓	✓	✗
	023. Minimise the cost of new service provision and operation	✓	✓	✗

Key:

✗ = Negative effect

❍ = No measurable achievement

✓ = Slight achievement

✓✓ = Considerable achievement