PENRITH LGA EMPLOYMENT LANDS STUDY ~ STAGE 1

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This Report has been prepared by Leyshon Consulting Pty Ltd for Penrith City Council (Council). The Report presents the findings of research undertaken by Leyshon Consulting into the potential future demand for employment land in Penrith Local Government Area (LGA) between 2001-11.

Labour Force/Employment Trends
Section 2

Population Growth
Between 1986-2001 the population of Penrith LGA increased from 138,700 to 178,405 persons—a rise of +39,705. The average annual growth rate (AAG) during the period was in excess of +2.0%.

Labour Force Growth
Between 1986-2001 the labour force (that is, those aged 15+ either employed or unemployed and seeking work) resident in Penrith LGA increased by +24,688 persons. The labour force AAG for the entire period 1986-2001 was +2.04% and +1.50% between 1996-2001.

Resident Workforce
Workforce growth (that is, those aged 15+ years employed either full- or part-time) in Penrith LGA between 1986-2001 was +24,881 persons which represented an AAG of +2.48% per annum. The workforce AAG between 1996-2001 was +1.82%.

Penrith's workforce grew at a slightly faster rate than did the labour force due to the falling unemployment rate—from 11.1% in 1986 to 5.9% in 2001.

Occupation
Between 1986-2001 very strong growth occurred in the number of Penrith residents employed in four key occupational categories namely:

- intermediate clerical sales and service ... +9,143
- associate professionals ... +4,438
- professionals ... +4,155
- managers and administrators ... +2,106.

The main occupational trends evident between 1996-2001 were a slowing in the growth of Penrith residents employed in managerial, administrative, professional and associate professional occupations. The rate of growth of those employed in low-skilled occupations including intermediate production and transport workers, elementary clerical sales and service workers and labourers and related workers meanwhile increased.

Industry

Retailing was the industry sector registering the strongest jobs growth for Penrith residents between 1986-2001 (+5,141 jobs) followed by the property and business services sector (+4,607).

Employment growth between 1986-2001 in those sectors traditionally associated with industry was as follows:

- manufacturing ... +1,354
- transport and storage ... +1,078
- wholesaling ... +1,655

Sydney Region Comparisons

The employment trends evident for the Penrith labour force between 1986-2001 broadly mirrored those occurring in the Sydney Region. One major difference, however, was the higher rate of growth of retail employment among Penrith residents. This was consistent with Penrith's status as an outer developing area which in and of itself generates constant growth in retail employment opportunities.

Jobs in Penrith

Section 3

Analysis of Journey-to-Work (JTW) data from the 1991 and 1996 Censuses provides information on the actual number of jobs in Penrith LGA at each date and the change in employment between the two. JTW data indicates that between 1991-96, growth occurred as follows:

- labour force ... +7,537
- workforce ... +8,915
- jobs ... +7,100

The data indicates that in the first half of the 1990s, jobs growth in Penrith (+7,100) lagged growth in both the resident labour force (+7,537) and the resident workforce (+8,915).

Change 1996-2001

JTW data from the 2001 Census indicates that between 1996-2001 jobs growth in Penrith Statistical Local Area (SLA) continued at a relatively high rate of +2.42% per annum. By number, total jobs in Penrith SLA grew by +5,583 but again lagged growth in both the resident labour force (+6,203) and resident workforce (+6,991).

Growth Projections
Section 4

Projections of the potential growth between 2001-21 in both Penrith's resident workforce and jobs in the LGA have been prepared based on two scenarios, namely:

- a continuation of current trends
- alternative growth assumptions.

Continuation of Current Trends
Under this scenario, Penrith's resident labour force could grow by +19,896 persons between 2001-21. Workforce growth (that is, those aged 15+ years and employed full- or part-time) is estimated at +18,613 persons during this period. The greatest numerical growth in the resident workforce by industry sector between 2001-21 would be as follows:

- retailing ... +5,041
- property and business services ... +4,082
- health and community services ... +2,195
- construction ... +2,078
- accommodation, cafés and restaurants ... +1,795
- manufacturing ... +1,501

If the annual rate of jobs growth continued at +4.5% it would produce total jobs in Penrith of around 132,000 by 2021. This would mean Penrith became 'jobs positive': that is, at some point between 2016-21 the number of jobs in Penrith LGA would exceed the resident workforce.

Continuation of such a high growth rate is nonetheless considered unlikely. A lower and more realistic growth rate assumption would result in total jobs in Penrith LGA rising by +18,167 between 2001-21 with the strongest jobs growth by sector expected to be as follows:

- community services ... +4,892
- wholesale/retail ... +4,474
- recreation and services ... +2,606
- finance/property ... +2,655.

This projection indicates that the majority of growth (around +13,733 jobs) in Penrith over the next two decades would be in those sectors which usually occupy commercial, retail or community facility-type floorspace. The balance (around 5,218 jobs) could be expected to require floorspace which is essentially industrial/quasi-industrial in nature.

Alternative Forecast
Section 5

Alternative projections of workforce and jobs growth have been prepared. These assume certain demographic changes between 2001-21 as well as the likelihood of new employment opportunities opening up following the development of new industrial land at Erskine Park.

Under this scenario, workforce growth is put at +18,141 between 2001-21. By industry sector this growth could range as follows:

- property and business services ... +4,435
- retailing ... +3,836
- manufacturing ... +1,944
- wholesaling ... +1,447
- health and community services ... +1,340
- cultural, recreational & services ... +1,261
- personal services ... +1,219
- construction ... +1,015.

The five major influences on future jobs growth in Penrith LGA are considered to be as follows:

- the opening up of the Erskine Park industrial area
- the development of employment land adjacent to the University of Western Sydney
- the development of the ADI land
- opportunities for additional employment uses at Penrith Lakes; and
- the further development of Penrith as a regional administrative/ retail/ entertainment centre. Of the above, the opening up of the Erskine Park industrial area will have the most immediate impact on jobs growth.

Taking the above initiatives into account, total jobs growth in Penrith LGA between 2001-21 is projected at +31,638. This exceeds the predicted workforce growth by +13,497.

Those industry sectors considered likely to experience the greatest employment growth between 2001-21 are:

- wholesale/retail ... +6,895
- manufacturing ... +5,281
- community services ... +7,990
- recreational and services ... +4,222
- finance/property ... +4,110.

Demand Assessment
Section 6

The workforce and jobs growth projections analysed in this Report will have ramifications for the demand for traditional employment land in Penrith LGA. Between 2001-21, industrial-type jobs are projected to increase as follows:

- 2001 ... 16,109 jobs
- 2011 ... 20,445
- 2021 ... 25,644.

Based on observed employment rates in various industrial areas in the Sydney Region, the demand for industrial land in Penrith in 2001, 2011 and 2021 is estimated as follows:

- 2001 ... 805 hectares
- 2011 ... 1,022 hectares
- 2021 ... 1,283 hectares.

Taking into account the zoned supply of industrial land in 1997 (1,274 hectares), it would appear that by 2011 Penrith could be facing a looming shortage of traditional zoned employment land.

Industry Requirements

The following industry requirements have been identified with respect to employment land:

- Manufacturing ... relatively flat land, access to high capacity electricity and water supplies, accessibility for B-doubles, reasonable proximity to arterial road network.
- Bulky Goods ... require frontage to arterial or sub-arterial roads.
- Wholesaling ... requires close proximity to arterial roads, B-double access and prefers lower cost industrial sites.

In relation to each of the above uses there is a near universal requirement on the part of contemporary employment-generating activities for access to broadband cabling.

A critical determinant in attracting future employment generating-uses to Penrith will be the availability of a broad spectrum of residential land and high quality housing product which can satisfy the residential preferences of senior management and of professional and technical experts.

1. INTRODUCTION

1.1 Background

This Report has been prepared by Leyshon Consulting Pty Ltd for Penrith City Council (PCC). The Report presents the findings of research undertaken by Leyshon Consulting into the demand for employment land in Penrith Local Government Area (LGA) between 2001-11.

This research constitutes Stage 1 of a two stage analysis of employment land demand and supply in Penrith LGA. Stage 2 will involve an analysis of the supply of employment land in Penrith LGA and an examination of the opportunities to increase the supply of such land in the LGA in the future.

The Stage 1 study is being undertaken in the context of a relatively rapid take-up rate of employment land in Penrith LGA over the past decade. This has generated concern within the Penrith business community that a shortage of em ployment land already exists and will only worsen during the forthcoming decade. Some members of the local business community also hold the view that an inadequate supply of employment land in Penrith is disadvantaging the LGA with respect to economic and employment growth relative to other LGAs in outer Sydney.

The Stage 1 study is being undertaken in the context of continuing population and employment growth in Penrith. This averaged around +1.0% per annum during the 1990s. It is almost certain that this growth rate will accelerate in the future given major residential development projects in Penrith including the Australian Defence Industries (ADI) site at St Marys and at Penrith Lakes.
In a broader sense, the study is also being undertaken in the context of a significant long-term shift in the nature of employment—which is occurring not only in Penrith but in the wider Australian economy—both in terms of the occupational structure of the workforce and the industries employing workers.
In relation to Stage 1, the objective of the study as identified in the Brief issued by Council is as follows:

> "Identify the medium-term (approximately 10 years) demand for employment land within the LGA and the type, nature and locational requirements of employment uses which are likely to emerge".

1.2 Study Tasks

To meet the objective established for this study the following study tasks have been undertaken:

- ► Journey-to-Work and Census data relevant to Penrith LGA has been analysed to ascertain changes in both the quantum of the resident labour force (by occupation and industry) and actual employment (by occupation and industry) in Penrith LGA between 1981and 2001;
- ► Changes in the composition of both the labour force and employment in Penrith LGA between 1981-2001 have been compared to changes in both variables in the wider Sydney Region during the same time-frame to determine whether Penrith has a typical or atypical labour force and employment structure;
- ► Projections of population and the labour force (that is, employed plus unemployed) growth in Penrith LGA between 2001-2011 have been prepared including estimates of likely changes in the composition of the labour force by occupation and industry type between 2001-2011;
- ► Projections have been made of the likely growth in employment by industry sector in Penrith LGA during the period 2001-2011 based on two scenarios namely:
  - continuation of past trends in employment growth in Penrith LGA; and
  - achievement of greater economic diversification;
- ► Employment trends in the region surrounding Penrith have been reviewed and the potential examined for generating new forms of employment associated with the University of Western Sydney, the development of the Erskine Park employment area and the potential spin-offs from investment from projects such as the ADI/St Marys project and the Penrith Lakes development;
- ► Employment growth in Penrith LGA between 2001-2011 which appears likely to have particular implications for employment land has been identified and estimates prepared of the likely demand for employment land flowing from such growth;
- ► The infrastructure, transport and other related requirements of industries which have the potential to generate demand for employment land in Penrith LGA between 2001-2011 have been reviewed; and
- ► A report prepared which summarises the findings of this study and provides recommendations to Council concerning its medium-term planning for employment lands in the LGA.

1.3 Definitions

The following definitions apply to terms used in this Report:

Employment Land—in general refers to land zoned for industrial purposes under existing Local Environmental Plans (LEPs)

Labour Force—refers to the population aged 15+ years which is either employed or unemployed and seeking work

Workforce—refers to the population aged 15+ years which is employed either part- or full-time

Participation Rate—refers to the proportion of the population aged 15+ years which is employed or seeking employment.

2. LABOUR FORCE/ EMPLOYMENT TRENDS

2.1 Introduction

The purpose of this section of the Report is to review labour force and employment growth trends evident in Penrith LGA between 1986 and 2001. This analysis provides insight into the rate at which demand is growing for employment in Penrith in various occupational classifications and industries relative to past population growth.

2.2 Resident Labour Force

Between 1986-2001 the population of Penrith LGA increased from 138,700 persons to 178,405 persons—a rise of +39,705. The average annual growth rate (AAG) was in excess of +2.0% per annum during the period. The AAG between 1996 and 2001 was +1.2% per annum.

As a consequence of the young age structure of Penrith, the resident labour force has grown faster than has the overall population. Between 1986-2001 the labour force resident in Penrith LGA increased by +24,688 persons from 61,514 in 1986 to 86,202 in 2001. In summary the labour force AAG during the period was +2.04% per annum. Labour force growth between 1996-2001 was +6,203 persons and the AAG was +1.50% per annum for this period.

2.3 Resident Workforce

During the period 1986-2001, the resident workforce (that is, residents of Penrith who were employed) also increased rapidly. As indicated in TABLE 2.1 below, total workforce growth during the period 1986-2001 was +24,881 persons or +2.48% per annum. Between 1996-2001 the resident workforce grew by +6,991 to 81,087 persons. The AAG for the workforce during the period 1996-2001 was +1.82%.

The reason why the workforce grew at a slightly higher rate than the labour force was due to the fall in the unemployment rate particularly between 1992-96. By 2001, the unemployment rate in Penrith (5.9%) had almost halved from its 1991 level (11.1%).

TABLE 2.1
SUMMARY of CHANGE in RESIDENT WORKFORCE – PENRITH STATISTICAL LOCAL AREA (SLA), 1986-2001

Category	1986	1991	1996	2001	Change 1986-2001
Workforce *(No.)*	56,206	65,181	74,096	81,087	24,881
Intercensal Increase *(No.)*	–	8,975	8,915	6,991	–
% Average Annual Growth Rate	–	3.00%	2.60%	1.82%	2.48%

Source: ABS Census 1986-2001.

Changes in the composition of the resident workforce by occupation and industry type between 1986-2001 are discussed below.

2.3.1 Occupation

As shown in TABLE 2.2, between 1986-2001 there was very strong growth in the number of Penrith residents employed in four key occupational categories namely:

- intermediate clerical sales and service ... +9,143
- associate professionals ... +4,438
- professionals ... +4,155
- managers and administrators ... +2,106.

There was also growth in the number of people employed in what could be regarded as traditional industrial-based occupations namely:

- intermediate production and transport ... +2,513
- labourers and related ... +823

In summary, employment growth in Penrith between 1986-2001 in those occupations traditionally associated with office or retail uses was substantially more rapid than for employment traditionally associated with industry per se. Data on intercensal employment growth (1996-2001) is also shown in TABLE 2.2. The strongest numerical growth recorded during this period was in the following sectors:

- intermediate clerical sales and service ... +1,947
- intermediate production and transport ... +1,135
- associate professionals ... +1,081
- professionals ... +871

The main trends evident between 1996-2001 were a slowing in growth in Penrith residents employed in managerial, administrative, professional and associate professional occupations. There was an increase in the growth rate of those employed in low-skilled occupations including intermediate production and transport workers, elementary clerical sales and service workers and labourers and related workers.

TABLE 2.2
CHANGE in EMPLOYMENT by OCCUPATION – PENRITH SLA RESIDENT WORKFORCE, 1986-2001

					1986-2001		1996-2001	
Industry ...	**1986**	**1991**	**1996**	**2001**	***Change (No.)***	**%Change *(Average Annual)***	**Change *(No.)***	**% Change *(Average Annual)***
Managers & Administrators	2,642	4,276	4,301	4,748	2,106	3.58	447	2.00
Professionals	5,282	6,445	8,566	9,437	4,155	3.54	871	1.96
Associate Professionals	4,210	5,021	7,567	8,648	4,438	4.87	1,081	2.71
Tradespersons & Related Workers	10,370	10,359	11,159	11,680	1,310	0.79	521	0.92
Advanced Clerical, Sales & Service Workers	4,174	4,827	3,614	3,465	(709)	(1.22)	(149)	(0.84)
Intermediate Clerical, Sales & Service Workers	7,307	8,909	14,503	16,450	9,143	5.59	1,947	2.55
Intermediate Production and Transport Workers	7,252	7,179	8,630	9,765	2,513	2.01	1,135	2.50
Elementary Clerical, Sales & Service Workers	7,502	8,141	7,441	8,463	961	0.81	1,022	2.61
Labourers & Related Workers	6,010	5,776	6,291	6,833	823	0.86	542	1.67
Inadequately Described	854	1,041	840	687	(167)	(1.45)	(153)	(3.94)
Not Stated	603	3,207	1,184	910	307	2.79	(274)	(5.13)
Total	**56,206**	**65,181**	**74,096**	**81,086**	**24,880**	**2.48**	**6,990**	**1.82**

Source: ABS Census 1986, 1991, 1996 & 2001, Journey to Work.

2.3.2 Industry

The strongest growth in employment by industry sector for Penrith LGA residents between 1986-2001 was recorded in the retail sector (+5,141 jobs) and in the property and business services sector (+4,607; TABLE 2.3 refers). Relatively strong growth was also recorded in a number of other sectors between 1986-2001 namely:

•	construction	...	+2,986
•	health and community services	...	+2,725
•	accommodation, cafés and restaurants	...	+1,762
•	education	...	+1,748
•	wholesaling	...	+1,655
•	personal and other services	...	+1,430.

In relation to those sectors traditionally associated with industry, total employment in manufacturing grew by +1,354 positions between 1986-2001, transport and storage by +1,078 and wholesaling by +1,655 positions.

While total employment in the 'tourism' sector cannot be determined accurately—given that tourism incorporates employment in several sub-sectors—employment growth in the sector is estimated by some to be equivalent to that achieved in the retail sector over the past 10-15 years.

TABLE 2.3
CHANGE in EMPLOYMENT by INDUSTRY – PENRITH SLA RESIDENT WORKFORCE, 1986-2001

Industry	1986	1991	1996	2001	Change 1986-2001	Change 1996-2001
Agriculture, Forestry, Fishing	704	637	773	751	47	(22)
Mining	260	243	235	161	(99)	(74)
Manufacturing	11,070	11,048	11,581	12,424	1,354	843
Electricity, Gas & Water	1,410	976	635	667	(743)	32
Construction	4,415	5,001	6,218	7,401	2, 986	1,183
Wholesale Trade	3,946	4,983	5,671	5,601	1,655	(70)
Retail Trade	7,813	8,768	11,155	12,954	5,141	1,799
Accommodation, Cafés & Restaurants	1,159	2,055	2,721	2,921	1,762	200
Transport & Storage	3,323	3,294	3,851	4,401	1,078	550
Communication Services	1,564	1,551	1,956	1,812	248	(144)
Finance & Insurance	3,488	3,953	3,864	4,034	546	170
Property & Business Services	2,838	4,231	6,087	7,445	4,607	1,358
Government Administration & Defence	3,551	3,683	3,303	3,250	(301)	(53)
Education	2,473	3,199	3,878	4,221	1,748	343
Health & Community Services	3,673	4,164	5,620	6,398	2,725	778
Cultural & Recreational Services	698	832	1,351	1,543	845	192
Personal & Other Services	1,832	2,407	2,837	3,262	1,430	425
Non-classifiable	684	204	1,091	496	(188)	(595)
Not Stated	1,305	3,952	1,269	1,345	40	76
Total	**56,206**	**65,181**	**74,096**	**81,087**	**24,881**	**6,991**

Source: ABS Census 1986, 1991, 1996 and 2001.

During the most recent intercensal period (1996-2001) those industry sectors experiencing the greatest (numerical) employment growth were as follows:

- retail ... +1,799
- property & business services ... +1,358
- construction ... +1,183
- manufacturing ... +843
- health & community services ... +778

(TABLE 2.3 refers).

2.4 Sydney Region Comparisons

The trends in employment evident for the Penrith labour force during the period 1986-2001 broadly mirrored those occurring in the Sydney Region. As noted in TABLE 2.4, for Sydney as a whole between 1986-2001 significant growth occurred in a number of occupational categories which chiefly generate demand for office and retail floorspace namely:

- managers and administrators
- intermediate clerical, sales and service
- professionals
- associate professionals.

A fall in the number of people employed in some occupational categories was also evident namely:

- advanced clerical, sales and service workers
- labourer and related workers
- tradespersons
- elementary clerical and sales and service workers.

In summary, on an occupational basis the employment trends in the Sydney Region between 1986-2001 were broadly similar to those occurring in Penrith.

TABLE 2.4
CHANGE in EMPLOYMENT by OCCUPATION – SYDNEY STATISTICAL DIVISION, 1986-2001

Industry ...	1986	1996	2001	– Change 1986-2001 – No.	% AAG
Managers & Administrators	96,329	140,406	163,318	66,989	3.60
Professionals	231,810	329,248	384,574	152,764	3.45
Associate Professionals	105,955	187,947	214,824	108,869	4.85
Tradespersons & Related Workers	216,900	201,336	201,443	(15,457)	(0.49)
Advanced Clerical, Sales & Service Workers	127,064	90,733	82,610	(44,454)	(2.84)
Intermediate Clerical, Sales & Service Workers	184,437	287,384	312,936	128,499	3.61
Intermediate Production and Transport Workers	135,671	131,710	133,754	(1,917)	(0.10)
Elementary Clerical, Sales & Service Workers	178,054	146,451	164,650	(13,404)	(0.52)
Labourers & Related Workers	138,653	118,119	120,722	(17,931)	(0.92)
Inadequately Described	22,960	15,698	15,880	(7,080)	(2.44)
Not Stated	14,966	26,429	21,514	6,548	2.46
Total	**1,452,799**	**1,675,461**	**1,816,225**	**363,426**	**1.51**

Source: ABS Census 1986 & 1996, Journey to Work

In relation to the change in employment by industry sector in the Sydney Region between 1986-2001 (TABLE 2.5 refers) the strongest growth (in terms of numbers employed) was recorded in the following sectors:

- property and business services
- health and community services
- accommodation, cafés and restaurants
- retailing
- education.

The industry sectors which achieved the highest numerical growth in the Sydney Region between 1986-2001 were as follows:

- property and business services
- retail trade
- education
- accommodation, cafés and restaurants
- cultural and recreational services
- personal and other services

- health and community services.

The growth patterns evident in the Sydney Region between 1986-2001 were very similar to those found during the same period in Penrith LGA. The major difference was the higher growth rate of retail employment among Penrith residents. This is consistent with Penrith's status as an outer developing area which in and of itself generates constant growth in retail employment opportunities. There was also a higher growth rate in employment in managerial and professional occupations in Penrith than was the case for Sydney as a whole.

TABLE 2.5
CHANGE in EMPLOYMENT by INDUSTRY – SYDNEY STATISTICAL DIVISION, 1986-2001

Industry ...	**1986**	**1996**	**2001**	**Change 1986-2001** *(No.)*
Agriculture, Forestry, Fishing	11,615	11,282	11,151	(464)
Mining	5,336	3,442	2,156	(3,180)
Manufacturing	238,185	214,753	220,923	(17,262)
Electricity, Gas & Water	27,806	10,984	11,025	(16,781)
Construction	88,525	107,022	125,383	36,858
Wholesale Trade	102,887	118,471	110,264	7,377
Retail Trade	185,823	213,291	242,616	56,793
Accommodation, Cafés & Restaurants	43,754	74,442	86,426	42,672
Transport & Storage	87,649	86,553	90,266	2,617
Communication Services	33,884	40,608	43,233	9,349
Finance & Insurance	95,180	100,286	111,359	16,179
Property & Business Services	122,427	211,441	262,442	140,015
Government Administration & Defence	79,943	65,955	61,772	(18,171)
Education	84,053	107,244	115,802	31,749
Health & Community Services	116,836	151,844	161,922	45,086
Cultural & Recreational Services	29,442	44,931	50,597	21,155
Personal & Other Services	45,232	60,607	65,036	19,804
Non-classifiable	16,844	24,151	10,712	(6,132)
Not Stated	37,382	28,153	33,140	(4,242)
Total	**1,452,803**	**1,675,460**	**1,816,225**	**363,422**

Source: ABS Census 1986, 1991, 1996 & 2001.

3. JOBS in PENRITH

3.1 Introduction

Journey-to-Work (JTW) data published by the New South Wales State Transport Study Group from the 1991 and 1996 Censuses and by the ABS from the 2001 Census has been analysed. This data provides insight into the journey to work patterns of residents by LGA. Unfortunately, no JTW data is available from the 1986 Census.

3.2 Change 1991-96

With respect to Penrith LGA, the JTW data for 1991 and 1996 provides insight into actual job growth in Penrith during this period. TABLE 3.1 below compares data on labour force growth, workforce growth and jobs in Penrith LGA between 1991 and 1996 based on this data. In summary, the following growth occurred between 1991-96:

- labour force ... +7,537
- workforce ... +8,915
- jobs ... +7,100

TABLE 3.1
COMPARISON of CHANGE in RESIDENT LABOUR FORCE, WORKFORCE and JOBS – PENRITH SLA, 1991-96 ***(No.)***

Category…	1991	1996	Change 1991-96
Labour Force	72,462	79,999	7,537
Workforce	65,181	74,096	8,915
Jobs	36,831	43,931	7,100

Source: ABS Census 1991 & 1996; State Transport Study Group, 1991 & 1996 Journey-to-Work data.

Between 1991-96 jobs in Penrith grew at the high rate of +4.5% per annum. The extent of jobs growth in Penrith (+7,100) between 1991-96—while not matching the numerical growth of the labour force—nevertheless represents an excellent outcome given that in many outer Sydney LGAs growth in the labour force easily outstrips local jobs growth.

TABLE 3.2 provides data on the change in job numbers in Penrith LGA between 1991-96 by occupation. As indicated in TABLE 3.2 the four major areas of job growth were:

- clerical, sales and service ... +3,038
- professionals ... +2,880
- associate professionals ... +2,041
- production and transport workers ... +1,136

The growth in production and transport workers is relevant in the context of this study as many positions in these sectors are essentially industrial-related employment. Employment in the other three occupational categories noted above, while not exclusively so, is primarily office, institutional or retail-based.

TABLE 3.2
CHANGE in WORKFORCE by OCCUPATION – PENRITH SLA, 1991-96

	– 1991 –		– 1996 –		– Change 1991-96 –	
Occupation ...	**No.**	**%**	**No.**	**%**	**No.**	**%**
Managers & Administrators	3,531	9.6	2,693	6.1	(838)	(2.3)
Professionals	4,415	12.0	7,295	16.6	2,880	7.8
Associate Professionals	2,488	6.8	4,529	15.8	2,041	5.5
Clerical/Sales & Service	11,457	31.1	14,495	33.0	3,038	8.2
Tradespersons	5,990	16.3	5,907	13.4	(83)	(0.2)
Production/Transport	3,158	8.6	4,294	9.8	1,136	3.1
Labourers	5,200	14.1	4,117	9.4	(1,083)	(2.9)
Not Stated	592	1.6	601	1.4	9	0.0
Total	**36,831**	**100.0**	**43,931**	**100.0**	**7,100**	**19.3**

Source: ABS Census 1991&1996, Journey to Work

We have also compared the change in the number of employment residents by occupation with the change in jobs in Penrith by occupation between 1991-96. This comparison highlights the areas in which local job growth is not matching workforce growth.

By comparing data contained in TABLES 2.2 and 3.2, we note that the occupations with the greatest net deficiency in local job growth compared to workforce growth between 1991-96 were:

- managers and administrators ... -863
- associate professionals ... -505
- clerical, sales & service ... -633
- tradespersons ... -883
- production/transport workers ... -315
- labourers ... -1,598

The only occupational group in which local job growth exceeded workforce growth was for professionals (+759).

TABLE 3.3 provides data on the increase in jobs in Penrith between 1991-96 by industry. The key industry sectors for growth during this period were as follows:

- recreation ... +1,923
- wholesale/retail ... +1,851
- community services ... +1,791
- finance & property ... +598

The recreation sector includes jobs within the tourism and accommodation sector, cafés and restaurants and other recreation facilities such as Penrith Panthers, health clubs, cinemas and the like. Jobs growth in the wholesale/retail sector is most likely to have been concentrated in retailing given the major expansion of Penrith Plaza and the significant development of bulky goods retailing on Mulgoa Road between 1991-96. In relation to the wholesaling sector, it should be noted that the 1991 and 1996 JTW data combined wholesaling and retailing. We estimate that about 25% of the increase in jobs (+463) in these two sectors combined between 1991-96 was in wholesaling industries and the balance (1,388) in the retail sector.

Growth in community services employment primarily relates to the expansion of jobs in the education sector (University of Western Sydney and new schools) and in the medical sector (expansion of Nepean Hospital).

Some slight growth was recorded in industrial-based sectors including manufacturing (+200), transport (+69) and construction (+222) between 1991-96.

TABLE 3.3
CHANGE in WORKFORCE by INDUSTRY – PENRITH SLA, 1991-96

	– 1991 –		– 1996 –		– Change 1991-96 –	
Industry ...	**No.**	**%**	**No.**	**%**	**No.**	**%**
Agriculture	537	1.5	678	1.5	141	0.4
Mining	164	0.4	206	0.5	42	0.1
Manufacturing	6,744	18.3	6,944	15.8	200	0.5
Electricity	558	1.5	271	0.6	(287)	(0.8)
Construction	2,958	8.0	3,180	7.2	222	0.6
Wholesale/Retail Trade	8,502	23.1	10,353	23.6	1,851	5.0
Transport	1,027	2.8	1,096	2.5	69	0.2
Communications	741	2.0	724	1.6	(17)	0.0
Finance/Property	3,040	8.3	3,638	8.3	598	1.6
Government Administration	1,993	5.4	2,293	5.2	300	0.8
Community Services	7,504	20.4	9,295	21.2	1,791	4.9
Recreation	2,779	7.5	4,702	10.7	1,923	5.2
Not Stated	284	0.8	551	1.3	267	0.7
Total	**36,831**	**100.0**	**43,931**	**100.0**	**7,100**	**19.3**

Source: ABS Census 1991 & 1996, Journey to Work.

In relation to the comparison between job growth in Penrith between 1991-96 (by industry) and resident workforce growth, two industry sectors had positive net growth namely:

- recreation ... +308 jobs
- government administration ... +683 jobs

The industry sectors in which workforce growth outstripped local job growth during the period 1991-96 were:

- wholesale/retail ...+1,224 jobs
- finance & property ...+1,169
- construction ... +995

3.3 Change 1996-2001

Journey-to-Work date from the 2001 Census has recently been released by the ABS. The data indicates that job growth in Penrith SLA has continued at a relatively high growth rate of +2.42%. As noted in TABLE 3.4 below, total jobs in Penrith grew by +5,583 between 1996-2001. The AAG rate in jobs during this period was +2.42%. The ratio of jobs growth to labour force growth was a healthy 90% between 1996-2001.

TABLE 3.4
CHANGE in LABOUR FORCE and JOBS – PENRITH SLA, 1996-2001 ***(No.)***

Category ...	1996	2001	Change 1996-2001
Labour Force	79,999	86,202	6,203
Workforce	74,096	81,087	6,991
Jobs	43,931	49,514	5,583

Source: ABS Census 1996 & 2001.

Due to different JTW classifications used by the ABS in 1996 and 2001, it is not possible to compare directly the change in all occupational and industry classifications between 1996 and 2001. For the purposes of this analysis, we have used the 1996 JTW classifications. The strongest job growth by occupation in Penrith SLA between 1996-2001 was in the following:

- clerical and service workers ...+2,722 jobs
- professionals ...+1,084
- associate professionals ... +827

(TABLE 3.5 refers).

TABLE 3.5
CHANGE in JOBS by OCCUPATION – PENRITH SLA, 1996-2001 *(No.)*

Category ...	1996	2001	Change 1996-2001
Managers & Administrators	2,693	3,149	456
Professionals	7,295	8,379	1,084
Associate Professionals	4,529	5,356	827
Tradespersons & Related Workers	5,907	6,121	214
Clerical & Service Workers	14,495	17,217	2,722
Intermediate Production & Transport Workers	4,294	4,674	380
Labourers & Related Workers	4,117	4,202	85
Inadequately Described/Not Stated	601	416	(185)
Total – All Occupations	**43,931**	**49,514**	**5,583**

Source: ABS Journey-to-Work data, 1996 & 2001.

In relation to the change in jobs in Penrith SLA by industry (TABLE 3.6 refers) the strongest job growth between 1996-2001 was in the following sectors:

- wholesale/retail trade ... +1,417 jobs
- community services ... +1,379
- finance & property ... +1,018
- recreation ... +814

TABLE 3.6
CHANGE in JOBS by INDUSTRY – PENRITH SLA, 1996-2001 *(No.)*

Category ...	1996	2001	Change 1996-2001
Agriculture, Forestry & Fishing	678	664	(14)
Mining	206	157	(49)
Manufacturing	6,944	7,301	357
Electricity, Gas & Water Supply	271	354	83
Construction	3,180	3,268	88
Wholesale & Retail Trade	10,353	11,770	1,417
Transport & Storage	1,096	1,525	429
Communication Services	724	529	(195)
Finance & Property	3,638	4,656	1,018
Government Administration & Defence	2,293	2,662	369
Community Services	9,295	10,674	1,379
Recreation	4,702	5,516	814
Non-Classifiable/Not Stated	551	438	(113)
Total – All Industries	**43,931**	**49,514**	**5,583**

Source: ABS Journey-to-Work data, 1996 & 2001.

4. GROWTH PROJECTIONS

4.1 Introduction

The purpose of this section of the Report is to present projections of the potential future growth in the resident workforce and jobs which could occur in Penrith during the two decades 2001 to 2021. These projections are designed to provide some indication of the potential future demand for various forms of employment land in Penrith LGA.

The projections detailed in this section of the Report have been prepared on two bases, namely:

- a continuation of existing trends; and
- alternative growth scenarios.

Considerable uncertainties must surround projections made as far out as 2021 and hence the potential for error is significant. Moreover, reliance upon a continuation of past trends is not necessarily a reliable guide to the future. For example, over the past two decades (that is, since 1980) very substantial changes in the nature and composition of both the workforce and the nature of jobs have occurred. These have included the increased participation of women in the workforce, the significant growth in part-time employment, the substantial expansion in so-called leisure and entertainment industries as well as in financial services industries. To the best of our knowledge, few (if any) commentators predicted these changes accurately.

The workforce projections are also based on estimated population and jobs growth in Penrith during the forecast period. In relation to population growth we have taken into account projections prepared by Council (APPENDIX 1) that in the order of +19,210 additional dwellings could be provided in both Urban Development Program (UDP) areas and in the established suburbs of Penrith over the next 20 years. These new dwellings could accommodate a population of between 38,420 and 57,630 persons.

4.2 Continuation of Current Trends

4.2.1 Workforce Growth

TABLE 4.1 provides an estimate of growth in the resident labour force and workforce by industry sector in Penrith between 2001-2021.

The key assumption adopted in preparing this assessment is that by 2021 Penrith achieves a population of 217,738 persons—a rise of +40,325 over the level of 2001. This is dependent on new residential release areas proceeding as identified in APPENDIX 1. The other assumptions relied upon are as follows:

- a slight ageing of the population with the result that the proportion aged 15+ years increases from 75.5% in 2001 to 76.9% by 2021;
- the labour force participation rate declines from 66.4% in 2001 to 65.0% in 2021; and
- the unemployment rate increases marginally from 5.9% to 6.0%.

As indicated in TABLE 4.1, under the above assumptions we estimate the resident labour force growth at some +19,896 persons during the period 2001-21. Workforce growth (that is, those aged 15+ years and employed full- or part-time) is estimated at +18,613 persons during this period.

TABLE 4.1 also provides estimates of potential resident workforce growth by industry sector. These estimates take into account the trends evident between 1991-2001 with respect to the distribution of employment of Penrith residents by industry sector (as discussed previously).

As indicated TABLE 4.1, the greatest numerical growth in the resident workforce by industry sector between 2001-21 is projected to be as follows:

- retailing ... +5,041
- property and business services ... +4,082
- health and community services ... +2,195
- construction ... +2,078
- accommodation, cafés and restaurants ... +1,795
- manufacturing ... +1,501

The increase are for those industry sectors (apart from manufacturing) which have a direct implication for the demand for industrial land are transport (+12.5%) and wholesaling (+2.5%). Between 2001-21, the number of Penrith residents employed in the manufacturing sector is estimated to rise by +1,501. A fall in the number of Penrith residents employed in government administration is also forecast on the basis that direct employment in the public sector continues to shrink. A decline (of -9.4%) in jobs in the finance and insurance sector is also forecast based on the continuing downward pressure on jobs in the banking and insurance sectors.

TABLE 4.1
FORECAST GROWTH in RESIDENT LABOUR FORCE and WORKFORCE – PENRITH SLA, 2001-2021 (Continuation of Current Trends)

Factor ...	2001	2006	2011	2016	2021	Change 2001-2021
Population *(No.)*	177,413	189,622	202,871	212,376	217,738	40,325
% Population aged 15+ years	75.5	75.8	76.0	76.5	76.9	n.a.
Population aged 15+ years *(No.)*	133,947	143,733	154,182	162,467	167,441	33,494
Labour Force Participation Rate *(%.)*	66.4	66.0	65.8	65.5	65.0	n.a.
Labour Force *(No.)*	88,941	94,864	101,452	106,416	108,837	19,896
Unemployment Rate *(%.)*	5.9	6.0	6087.0	6.0	6.0	n.a.
Unemployed *(No.)*	5,248	5,692	95,365	6,385	6,530	1,282
Total Workforce *(No.)*	**83,693**	**89,172**	**95,365**	**100,031**	**102,306**	**18,613**
By Industry						
Agriculture/Mining	946	999	1,049	980	972	26
Manufacturing	12,822	13,376	13,828	14,304	14,323	1,501
Utilities	686	642	620	600	563	(123)
Construction	7,641	7,936	8,583	9,303	9,719	2,078
Wholesale	5,783	5,823	5,989	6,002	5,934	151
Retail	13,374	14,713	16,212	17,505	18,415	5,041
Accommodation/Cafés etc	3,013	3,478	3,910	4,501	4,808	1,795
Transport	4,545	4,878	5,274	5,452	5,115	570
Communications	1,866	1,873	1,812	1,831	1,821	(45)
Finance & Insurance	4,176	4,048	3,948	3,851	3,816	(360)
Property & Business Services	7,683	8,917	10,013	10,803	11,765	4,082
Government Administration	3,356	3,389	3,385	3,376	3,274	(82)
Education	4,360	4,637	4,673	5,002	5,115	755
Health & Community Services	6,603	7,134	8,011	8,503	8,798	2,195
Cultural & Recreational	1,590	1,783	2,003	2,201	2,148	558
Personal Services	3,364	3,585	3,862	4,041	4,092	728
Other	1,885	1,961	2,193	1,776	1,628	(257)
Total	**83,693**	**89,172**	**95,365**	**100,031**	**102,306**	**18,613**

Source: Leyshon Consulting Estimates, 2003.

4.2.2 Jobs Growth

As noted previously, between 1991-96 the number of jobs provided in Penrith grew very strongly averaging around +4.5% per annum. Growth between 1996-2001 slowed somewhat to +2.43% per annum. If continued to 2021, a rate of growth of +4.5% would produce total jobs in Penrith of around 132,000 and mean that Penrith became 'job positive'—that is, somewhere between 2016-21 the number of jobs in Penrith LGA would exceed the resident workforce (TABLE 4.1 refers).

Continuation of such a high rate of job growth is very unlikely, however. The main reasons for this is that a significant component of job generation in Penrith is tied to an increasing population. For example, jobs in the retailing, education and community services sectors as well as those in the construction sector are directly related to the rate of population growth in any given area. As population growth slows, so too does jobs growth in these sectors.

As indicated in TABLE 4.2 the annual rate of population growth in Penrith since 1986 has been in decline falling from an AAG of +4.59% between 1981-86 to +1.0% between 1996-2001 (based on the latest ABS data). The intercensal numerical increment in population has similarly fallen from +16,200 persons between 1986-91 to half that—8,213 persons between 1996-2001 (TABLE 4.2 refers).

TABLE 4.2
PAST POPULATION GROWTH – PENRITH LGA, 1986-2001

Factor ...	1986	1991	1996	2001
Population	138,700	154,900	167,868	176,081
Increase	n.a.	16,200	12,968	8,213
AAG %	4.59%	2.14%	2.03%	1.00%

Source: ABS.

In view of the above, it would be most unwise to assume a continuation of a growth rate of +4.5% per annum. For the purposes of this Report, we have assumed that the rate of future jobs growth in Penrith will be as follows:

- 1996-2001 ... +2.4% per annum
- 2001-06 ... +2.0% per annum
- 2006-11 ... +1.8% per annum
- 2011-16 ... +1.5% per annum
- 2016-21 ... +1.0% per annum

As indicated in TABLE 4.3, on the basis of the above growth rate assumptions, the total number of jobs in Penrith LGA could rise by +18,167 between 2001-21. The strongest growth (by number) is expected to occur in the following sectors:

- community services ... +4,892
- wholesale/retail ... +4,474
- recreation and services ... +2,606
- finance/property ... +2,655

Relatively strong growth is also projected for manufacturing (+2,719) and construction (1,605). In relation to the wholesale/retail sector, the retail component is estimated to account for approximately +3,580 of the projected jobs growth and wholesaling approximately +894 jobs.

Hence, the majority of growth (around +13,733 jobs) in Penrith over the next two decades will be in those sectors which generally require the provision of commercial, retail or community facility-type space while the balance (around 5,218 jobs) could require floorspace which is essentially industrial/quasi-industrial in nature. The latter would as a consequence give rise to a demand for traditional industrial land.

TABLE 4.3
FORECAST CHANGE in JOBS by INDUSTRY in PENRITH SLA, 2001-2021 (Continuation of Current Trends)

Factor ...	**2001**	**2006**	**2011**	**2016**	**2021**	**Change 2001-2021**
Jobs in Penrith *(No.)*	49,541	54,697	59,800	64,422	67,708	18,167
% Average Annual Jobs Growth	–	2.0	1.8	1.5	1.0	1.5
By Industry						
Agriculture/Mining	822	875	718	709	745	(77)
Manufacturing	7,302	8,095	8,970	9,534	10,021	2,719
Utilities	352	339	329	322	339	(13)
Construction	3,270	3,719	4,186	4,638	4,875	1,605
Wholesale/Retail	11,776	13,073	14,651	15,461	16,250	4,474
Transport	1,526	1,652	1,495	1,288	1,354	(172)
Communications	530	465	449	419	440	(90)
Finance/Property	4,657	5,470	6,279	6,958	7,312	2,655
Government Administration	2,665	2,571	2,272	2,062	2,167	(498)
Community Services	10,681	11,760	13,156	14,817	15,573	4,892
Recreation & Services	5,519	6,153	6,907	7,731	8,125	2,606
Sub-Total	*49,100*	*54,172*	*59,412*	*63,939*	*67,201*	*18,101*
Other	441	525	389	483	508	67
Total	**49,541**	**54,697**	**59,801**	**64,422**	**67,709**	**18,168**

Source: Leyshon Consulting Estimates, 2003.

5. ALTERNATIVE FORECAST

5.1 Introduction

The possible nature of an alternative pattern of workforce and jobs growth in Penrith during the period 2001-2021 has also been considered. This assumes possible changes in the demography of Penrith's resident population as well as the possibility of new employment opportunities being created following from the development of new industrial/employment land. The findings of this analysis are discussed below.

5.2 Workforce Growth

There is obvious potential for some significant changes to occur in the demography of Penrith's resident population over the period 2001-2021.

While some changes will occur naturally—such as an ageing of the population—the greatest potential for change will come from a significant number of major new housing developments. Previous research undertaken by Leyshon Consulting on the demography of new residential areas in western and north-western Sydney between 1986-96 indicates that in almost all cases, new residential developments and areas attract a population which is atypical of the existing population of a particular area. This is particularly true of those developments which target second or third home buyers or those which involve a significant component of multi-unit housing.

Discussions with Council officers indicate there is likely to be a significant number of new residential developments in Penrith over the next two decades. The numerical details of these developments was discussed in Section 4.1 of this Report and the projects are detailed in APPENDIX 1.

The likely individual characteristics of these projects are as follows:

- Erskine Park — traditional detached infill development.
- Claremont Meadows — traditional residential as an extension of the existing Claremont Meadows residential area.
- Glenmore Park — infill development of areas within (undeveloped) Glenmore Park predominantly with detached housing.
- Penrith Lakes Environs — 620 dwellings based on a community title plan providing a range of housing forms including

apartments, townhouses with densities of up to 35 dwellings per hectare.

- Caddens Release Area — could provide a mix of housing types including student housing and be integrated with the campus of the University of Western Sydney
- ADI — up to 3,500 dwellings including a range of dwelling types spanning the entire price spectrum
- North Penrith — provision of mixed residential and commercial development including live/work housing appealing to younger professionals and retirees.
- Werrington Signals — medium density development at some 30-40 dwellings per hectare adjacent to a new railway station.
- Penrith Lakes Scheme — major prestige residential development offering waterfront apartments and housing targeting the premium end of the market

5.2.1 Development Implications

The developments outlined above will, over the next 20 years, undoubtedly broaden the range of housing product available in Penrith. In particular they will provide significant opportunities for second and third home buyers to trade-up to more expensive forms of housing. These second and third home buyers are likely not only to be existing residents of Penrith but also buyers attracted to the area from neighbouring LGAs. A number of the proposed new developments will offer features not found in surrounding areas including waterfront land, land integrated with open space systems (ADI and Glenmore Park) as well as opportunities to live in more dense forms of housing closer to the city centre and public transport (North Penrith).

It is also likely that the housing mix in the developments noted above will attract a significant component of younger professional households particularly given the proximity of the University of Western Sydney and that institution's ability to provide both undergraduate and post-graduate training.

On balance, the workforce participation rate will probably trend down over the next two decades particularly if Penrith attracts a significant proportion of second and third homebuyers. Nevertheless, significant increases in employment in skilled sectors of the local economy particularly property and finance, community services and in the recreation and personal services fields can be expected.

5.2.2 Workforce Estimates

TABLE 5.1 provides our estimates of the potential change in the occupational structure of the Penrith workforce between 2001-2021 (by industry) assuming more significant demographic change than was envisaged in the analysis presented in Section 4 of this Report.

In summary, we estimate total workforce growth at +18,141 persons during this period. The major increases in employment of Penrith residents by industry sector are projected to be as follows:

- property and business services ... +4,435
- retailing ... +3,836
- manufacturing ... +1,944
- wholesaling ... +1,447
- health and community services ... +1,340
- cultural, recreational & services ... +1,261
- personal services ... +1,219
- construction ... +1,015

TABLE 5.1
FORECAST GROWTH in RESIDENT LABOUR FORCE and WORKFORCE by INDUSTRY SECTOR – PENRITH SLA, 2001-2021 (Alternative Growth Scenario)

Factor	2001	2006	2011	2016	2021	Change 2001-2021
Population *(No.)*	177,413	189,622	202,871	212,376	217,738	40,325
% Population aged 15+ years	75.5	75.8	76.0	76.5	76.9	n.a.
Population aged 15+ years *(No.)*	133,947	143,733	154,182	162,457	167,441	33,494
Workforce Participation Rate *(%.)*	66.4	66.0	65.5	65.0	64.7	n.a.
Labour Force *(No.)*	88,941	94,864	100,989	105,604	108,334	19,393
Unemployment Rate *(%.)*	5.9	6.0	6.0	6.0	6.0	n.a.
Unemployed *(No.)*	5,248	5,692	6,059	6,336	6,500	1,252
Total Workforce *(No.)*	83,693	89,172	94,930	99,268	101,834	18,141
By Industry						
Agriculture/Mining	946	999	1,044	973	967	21
Manufacturing	12,822	13,643	14,239	14,890	14,766	1,944
Utilities	686	446	475	496	509	(177)
Construction	7,641	7,580	8,069	8,438	8,656	1,015
Wholesale	5,783	6,153	6,645	7,048	7,230	1,447
Retail	13,374	14,268	15,663	16,677	17,210	3,836
Accommodation/Cafés etc	3,013	4,548	4,841	5,063	5,194	2,181
Transport	4,545	4,459	4,272	3,971	3,870	(675)
Communications	1,866	1,962	2,183	2,283	2,037	171
Finance & Insurance	4,176	3,924	3,797	3,673	3,564	(612)
Property & Business Services	7,683	9,096	9,968	11,416	12,118	4,435
Government Administration	3,356	3,210	3,228	3,177	3,065	(291)
Education	4,360	4,682	5,012	5,261	5,601	1,241
Health & Community Services	6,603	6,688	7,215	7,644	7,943	1,340
Cultural & Recreational	1,590	1,962	2,373	2,581	2,851	1,261
Personal Services	3,364	3,834	4,272	4,467	4,583	1,219
Other	1,885	1,718	1,634	1,210	1,670	(215)
Total	**83,693**	**89,172**	**94,930**	**99,268**	**101,834**	**18,141**

Source: Leyshon Consulting Estimates, 2003.

5.3 Jobs Growth

Under the alternative growth scenario, there is also likely to be significant potential for a change in the trajectory of jobs growth in Penrith as well as in the nature of that growth in the two decades 2001-2021.

The five major influences on future jobs growth are considered to be as follows:

- the opening up of the Erskine Park industrial area which will provide new locational opportunities for a range of industrial uses;
- the development of employment land adjacent to the University of Western Sydney at Kingswood;
- the development of the ADI land ;
- opportunities for additional employment uses at Penrith Lakes; and
- the further development of Penrith as a regional administrative/ retail/ entertainment centre.

Of the above, the opening of the Erskine Park industrial area will have the most immediate impact on workforce growth. After a considerable period of delay in the development of this area, Council is now in receipt of development applications for the initial subdivision of land within the Erskine Park industrial estate. The development of this area will provide Penrith with a new supply of well-located industrial land and enable it to compete more strongly for manufacturing and wholesaling-related employment. The availability of such land combined with initiatives such as the advanced computing centre at the University of Western Sydney should mean significant new opportunities for Penrith to attract firms incorporating highly advanced manufacturing and research facilities.

TABLE 5.2 provides details of our estimates of the potential change in job growth by industry sector taking into account the initiatives noted above. As indicated in TABLE 5.2, between 2001-2021 total job growth is estimated at +31,638 which is +13,497 greater than the predicted workforce growth. Those sectors experiencing the greatest employment growth during this period are projected to be:

- wholesale/retail ... +6,895
- manufacturing ... +5,281
- community services ... +7,990
- recreational and services ... +4,222
- finance/property ... +4,110.

TABLE 5.2
FORECAST CHANGE in JOBS in PENRITH SLA by INDUSTRY SECTOR, 2001-2021 (Alternative Growth Scenario)

Factor ...	2001	2006	2011	2016	2021	Change 2001-2021
Jobs in Penrith *(No.)*	49,541	56,051	63,417	71,750	81,179	31,638
% Annual Average Jobs Growth	–	2.5	2.5	2.5	2.5	2.5
By Industry						
Agriculture/Mining	822	897	761	789	893	71
Manufacturing	7,302	8,352	9,576	10,978	12,583	5,281
Utilities	352	348	349	359	406	54
Construction	3,270	3,811	4,439	5,166	5,845	2,575
Wholesale/Retail	11,776	13,396	15,093	16,861	18,671	6,895
Transport	1,526	1,693	1,585	1,435	1,624	98
Communications	530	476	476	466	528	(2)
Finance/Property	4,657	5,605	6,659	7,749	8,767	4,110
Government						
Administration	2,665	2,634	2,410	2,296	2,598	(67)
Community Services	10,681	12,051	13,952	16,503	18,671	7,990
Recreation & Services	5,519	6,306	7,325	8,610	9,741	4,222
Sub-Total	***49,100***	***55,569***	***62,625***	***71,212***	***80,327***	***31,227***
Other	441	482	793	538	852	411
Total	**49,541**	**56,051**	**63,418**	**71,750**	**81,179**	**31,638**

Source: Leyshon Consulting Estimates, 2003.

6. DEMAND ASSESSMENT

6.1 Introduction

The purpose of this section of the Report is to consider the implications of the job growth estimates discussed in Section 5 in terms of the potential demand for traditional employment land in Penrith LGA.

A review has also been made of the infrastructure, transport and other related requirements of industry which have the potential to generate demand for employment land in Penrith between 2001-2021.

6.2 Demand for Land

It is difficult to translate accurately the estimates of growth in employment presented in Section 5 of this Report into precise estimates of the occupation of land for employment purposes. The reason for this is that some employment categories could locate on either traditional employment (industrial) land or in commercially zoned areas. In broad terms, the primary location/s where employment of a particular type is found are detailed below:

- agriculture/mining ... not applicable
- manufacturing ... industrial land
- utilities ... industrial land
- construction ... industrial land + construction sites
- wholesaling ... industrial land
- retailing ... primarily commercial but some bulky goods in industrial lands
- transport ... primarily industrial land
- communications ... industrial/commercial
- finance & property ... commercial
- government administration ... commercial
- community services ... commercial/special uses
- recreation and services ... commercial and special uses.

Taking the above locational patterns into account, TABLE 6.1 provides an estimate of possible growth in what is mainly industrial-related employment for the years 2001, 2011 and 2021.

TABLE 6.1
ESTIMATED GROWTH in INDUSTRIAL-RELATED JOBS – PENRITH SLA, 2001, 2011 & 2021

Sector ...	2001	2011	2021
Manufacturing	7,302	9,576	12,583
Utilities	352	349	406
Construction[1]	981	1,331	1,754
Wholesale[2]	4,122	5,283	6,535
Retail[3]	1,601	2,162	2,539
Transport[4]	1,221	1,268	1,299
Communications	530	476	528
Total	**16,109**	**20,445**	**25,644**

Notes:
1. Assumes 30% of total employment.
2. Assumes 35% of total wholesale/retail jobs.
3. Bulky goods only.
4. Assumes 80% of total.

Source: Leyshon Consulting Estimates, 2003.

As indicated in TABLE 6.1, total industrial-type jobs growth in Penrith in these years is projected to be as follows:

- 2001 ... 16,109 jobs
- 2011 ... 20,445
- 2021 ... 25,644.

TABLE 6.2 provides estimates of the demand for industrial land in Penrith LGA in 2001, 2011 and 2021. These estimates relate to ‘occupied’ land—that is, they are estimates of the take-up of industrial land. We have assumed an occupation rate of approximately 22 jobs per gross industrial hectare. This figure is derived from a study undertaken for the (then) Department of Planning in 1991 (*Employment Monitoring of Commercial Centres and Industrial Areas*). In that study Jones Lang Wootton (JLW) collected data on employment densities in a range of employment areas and found that employment per gross hectare varied with respect to particular industrial areas in Sydney as follows:

- Auburn/Silverwater ... 24 persons per hectare
- Botany ... 18
- Central Industrial Area (Alexandria/Zetland) ... 42
- Moorebank ... 22
- North Ryde ... 71
- Wetherill Park ... 21

TABLE 6.2
ESTIMATED REQUIREMENT for OCCUPIED INDUSTRIAL LAND – PENRITH LGA, 2001, 2011 & 2021

Factor ...	2001	2011	2021
Industrial Jobs	16,109	20,445	25,644
Jobs Density *(Jobs/Hectare)*	22	22	22
Occupied Land *(Hectares)*	732	929	1,166

Source: Leyshon Consulting Estimates, 2003

Employment lands in Penrith in all likelihood will have characteristics more akin to those found in Moorebank, Wetherill Park and the Auburn/Silverwater area than is the case with respect to lands in Botany or the Central Industrial Area (CIA). That is, a mixture of modern manufacturing and office/warehouse developments rather than older style manufacturing and production plants and warehousing typically found in Botany and the CIA.

As indicated in TABLE 6.2 we estimate occupied industrial land in 2001, 2011 and 2021 as follows:

- 2001 ... 732 hectares
- 2011 ... 929 hectares
- 2021 ... 1,166 hectares.

In 1997, the Employment Lands Development Program (ELDP) prepared by the (then) Department of Urban Affairs and Planning (now Planning NSW) found that Penrith had some 1,274 hectares of employment land of which 507 hectares was vacant. Total occupied land in 1997 was therefore some 767 hectares.

Taking the above into account, we consider it is reasonable to inflate the estimates detailed in TABLE 6.2 by approximately 10% to obtain an indication of the likely total demand for occupied employment (industrial) land in 2001, 2011 and 2021. This would generate revised demand estimates as follows:

- 2001 ... 805 hectares
- 2011 ... 1,022 hectares
- 2021 ... 1,283 hectares.

Taking into account the zoned supply in 1997 (1,274 hectares) it would appear that by 2011 Penrith could be facing a looming shortage of zoned traditional employment land. By that date, we estimate that vacant land theoretically could be down to 252 hectares or 19.7% of total zoned supply. This compares to approximately 40% of the total zoned supply being vacant in 1997. Without recourse to further rezonings, therefore, demand for employment (industrial) land could exceed supply between 2011-2021.

It should also be noted that the estimates discussed above exclude demand which could arise from so-called hi-tech/scientific industrial employment uses which could be responsible for a significant component of future employment in non-traditional industries. For example, if lands in the vicinity of the University of Western Sydney at Kingswood were zoned to permit a wide range of activities such as are permitted in modern employment zones like Norwest Business Park. The latter contains a significant component of non-traditional industrial office-based employment.

6.3 Industry Requirements

Drawing on a variety of sources we have reviewed the requirements in terms of infrastructure, transport and other related needs for a range of industries which could contribute to employment demand in Penrith during the period 2001-2021. These requirements are summarised as follows:

- Manufacturing ... relatively flat land, access to high capacity electricity and water supplies, accessibility for B-doubles, reasonable proximity to arterial road network.
- Construction ... no particular requirements, however, some construction-related enterprises with a display function require sites with relatively high visibility to surrounding roads.
- Bulky Goods ... require frontage to arterial or sub-arterial roads.
- Utilities ... no particular requirements with location often determined by compatibility with adjacent land uses.
- Wholesaling ... requires close proximity to arterial roads, B-double access and prefers lower cost industrial sites.
- Transport ... prefers lower cost industrial land and reasonable access to arterial road network.
- Communications ... location is usually determined in relation to access to telecommunications linkages particularly broadband cable and fibre optic cable location.

In relation to all of the above uses we understand there is a growing requirement on the part of modern employment generating activities for access to broadband cabling. This is not only the case for so-called hi-tech industrial enterprises but is increasingly a requirement of modern manufacturing and wholesaling operations, particularly where modern manufacturing is linked in the supply chain to customers and warehouse facilities. It also applies where manufacturing enterprises are involved in off-site research, development and other related activities.

In a general sense, a critical determinant in attracting future employment generating uses to Penrith will be the availability of a broad spectrum of residential land. As a general principle, a number of locational studies have identified the importance to locational decision-making of the availability of a range of high quality housing products for executives, technical experts and others involved in industrial enterprises. Together with the general environment offered by an area and its recreational facilities, the availability of residential options can be critical to attracting new enterprises to areas such as Penrith.

APPENDIX 1

ESTIMATED DWELLING POTENTIAL – PENRITH *(February 2002)*

Category ...	Location	Total Dwellings	Total Urban Area *(Ha.)*
UDP/MUDP	Erskine Park	100	8.0
	Claremont Meadows Stage 2	380	63.0
	Glenmore Park (undeveloped)	330	28.0
	Glenmore Park (deferred land)	170	14.5
	Penrith Lakes Environs	620	95.0
	Caddens Release Area*	1,300	90.0
	ADI (Penrith component)	3,500	380.0
	North Penrith Urban Area	800	50.0
	Werrington Signals Land*	450	22.0
	UDP Total	**7,650**	**750.5**
Infill	Rural Areas	340	
	Multi-unit Housing	2,700	
	Dual Occupancies (fringe)	2,270	
	Shop Top Housing	1,400	
	UWS (student housing)	350	
	Infill Total	**7,060**	
Unconfirmed Areas	Penrith Lakes Scheme*	3,500	>230
	Glenmore Park Expansion (Bradley Street)*	1,000	125.0
	Unconfirmed Areas Total	**4,500**	**>355.0**

* Notes:
Estimates for these areas are notional only at this stage and subject to planning investigations being advanced.

- Approximately 43,000 existing dwellings in residential areas
- Approximately 20,000 new dwellings over the next 20 years
- Approximately 12,150 dwellings in new release areas.

Source: Penrith City Council, 2002.