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Job Seeker attitudinal Segmentation

An Australian Model

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Executive Summary

It is widely recognized that a job seeker's attitude can have a significant impact on their success in finding employment. To date, there is no formal measurement or recognition of the impact of attitude on a job seeker's job readiness in the Australian employment assistance system.

The Department of Employment and Workplace Relations commissioned Colmar Brunton Social Research (CBSR) to conduct research to develop a needs based segmentation of job seekers, based on research previously conducted in New Zealand. CBSR used qualitative research to identify eight job seeker segments, based on the dimensions of level of motivation and level of limitation (openness) towards the type of job and job search activities that are acceptable to the job seeker. The eight segments are:

- Drivers, who are highly motivated and open to all job opportunities;
- Struggling job seekers, who are highly motivated and open, but are less confident about their abilities;
- Drifting job seekers, who want a job but are not sure what job they want or how to look for work;
- Disempowered job seekers, who want to work but have lost all confidence in themselves and their skills, they believe they've reached their 'use-by-date';
- Selectives, who are highly motivated but place specific limits on the type of job they are looking for and will accept;
- Dependents, who are limited in the types of jobs they will consider. They are motivated to find a job but are loosing confidence about finding the 'right' job;
- Cruising job seekers are relaxed about being unemployed, do not want work in a full-time or permanent job and are not looking for work; and
- Withdrawn job seekers, who are not motivated to look for work and believe they are not able to work, often because of a medical or psychological condition.

These segments feed into a behaviour change model which can help in identifying job seeker needs and improve efficiency in targeting assistance. The model identifies the following stages of behavioural change:

- Precontemplation, where people do not consider the appropriateness of their behaviours. Cruising and withdrawn job seekers are most likely to be at the pre-contemplation stage;
- Contemplation, where people consciously evaluate the impacts of various behaviours. Drifting and Disempowered job seekers are most likely to be at the contemplation stage;
- Action, where people consciously change their behaviour. Strugglers, Dependents and Selectives are most likely to be at the action stage; and

- Maintenance, where people are committed to their behaviour and do not wish to change their behaviour. Drivers are most likely to be at the action stage.

The consultants developed a segmentation tool consisting of twenty-one statements designed to differentiate job seekers on the basis of their motivation and level of limitation. These statements were included in a survey of job seekers[1]. Job seekers were asked their level of agreement (or disagreement) with the statements using a 10 point scale.

A factor analysis was performed on the data collected, to develop the segmentation model. A discriminant model of the segmentation was then developed using discriminant analysis. The discriminant model defines an algorithm (rule) which allows the model to be replicated at any point in time and for any sample. Analysis of segmentation data will be based on the algorithm model to allow comparisons with data collected in the future.

Initial estimates of the segments show that Drivers account for 16% of the job seeker population – the largest segment. Selectives (7%) are the smallest segment.

This research is a 'work in progress'. The next phase in the research will be the analysis of the segmentation data collected.

It is expected that in the short term the research will provide valuable information to help the department and service providers better understand the needs of different job seekers, and will assist in better targeting of assistance. In the longer term, research to track the relative size of the segments over time will contribute to the evaluation of the impact of government assistance and, combined with employment outcomes data, will assist in the development and refinement of employment policy. As well, longitudinal research to track the movement of job seekers between segments will examine the impact of different interventions and experiences on job seeker attitudes.

[1] 2001 Job Seeker Evaluation of Employment Services (Centrelink) Survey

Introduction

This report presents the methodology and findings from research conducted to develop a needs based segmentation model for Australian job seekers. The research identifies, describes and explains the Australian job seeker segments and the underlying dimensions and characteristics on which the Australian model is based.

The Department of Employment and Workplace Relations (DEWR, previously the Department of Employment, Workplace Relations and Small Business) commissioned Colmar Brunton Social Research to develop the job seeker needs based segmentation model.

Background

Case managers working with unemployed people agree that the attitude of the individual job seeker has an important influence on the likely success of any labour market assistance. Research undertaken by Englert and Smith (1996) for developing a needs based assessment model for job seekers in New Zealand recommended that:

> *"Underlying factors such as motivation and work attitudes are crucial to job acquisition and therefore should be assessed using well-designed questions." (Englert and Smith, 1996)*

Attitudes have already been recognised in the Australian context in so much as the assessment of job seekers' level of risk of long term unemployment, and hence, access to intensive labour market assistance can be influenced by personal factors. Currently, the Job Seeker Classification Instrument (JSCI) applied by Centrelink staff includes scope to allocate points based on the identification of personal factors that may affect the job seeker's ability to find and keep work. Poor motivation, poor presentation skills, poor self confidence and low self esteem are some of the characteristics that could lead to the allocation of personal factor points. The allocation of these points is not determined by a systematic assessment procedure however, and is driven by the individual assessments of individual Centrelink officers.

Segmentation groups individuals into segments with like qualities. The segmentation research was conducted by Colmar Brunton Social Research based on methods developed to undertake similar segmentation studies for the New Zealand

Employment Service in the early 1990s (see Appendix A). The underlying dimensions and characteristics that define Australian job seekers are not the same as those that define New Zealand job seekers.

This research draws on the concept of social marketing and on the behaviour change model of Prochaskau and Di Clemente (1992). As described by Andreasen (1995), social marketing is used to influence the voluntary behaviour of target audiences in order to benefit the target audience and/or society as a whole.

Job seekers with different attitudes will be influenced by different motivational levers. They will have different service needs depending on their current attitudes and their associated stage of behaviour change. A key element in influencing the behaviour of job seekers is identifying what stage of the behaviour change model individuals are at, and what services or actions are therefore required to assist them.

Job seekers who are highly motivated and actively looking for work may have more chance of achieving an employment outcome than those who are not. Labour market assistance may help job seekers in a number of ways, one of which is increasing motivation and activity levels by, for example, increasing confidence and self-esteem and providing support and encouragement or providing disincentives for reduced job search activity.

Qualitative research phase

Qualitative research was conducted between the 4th and 19th of December 2000. Fifty-two motivational in-depth interviews, each lasting up to two hours, were conducted with job seekers in the Australian Capital Territory and rural, regional and metropolitan areas in New South Wales.

The sample included:

- Job seekers in South Coast, Goulburn, Yass, Wollongong, Sydney and the ACT;
- Job seekers from different JSCI categories;
- Job seekers with different durations of registered unemployment; and
- Job seekers from a range of age groups and both genders.

A full description and breakdown of the sample is at Appendix B.

Qualitative Process

The research required an insightful, honest and intimate understanding of job seekers in order to develop a segmentation model that appropriately and 'truly' captured the Australian job seeker market. To achieve this CBSR employed the use of qualitative in-depth interviews conducted on a one-on-one basis with job seekers. CBSR utilised a number of probing and projective techniques drawn from clinical psychology. This meant that deeper, emotive issues were revealed as well as more rational issues.

People are often unwilling, or even unable, to discuss emotive issues or sensitive subjects in a conventional interview situation. The probing and projective techniques enabled participants to uncover the reasons for their attitudes and behaviours. As a result job seekers were able to self-reflect and divulge often sensitive, personal feelings about being unemployed, and looking and finding employment.

Senior researchers, experienced in conducting research of this nature with people from all walks of life, undertook the interviews. A strong rapport was developed between researcher and participant, enabling an in-depth exploration and identification of the beliefs and attitudes driving job search behaviour.

Limitations of Qualitative Research

It is important to note that this report describes the findings of qualitative research. The qualitative methods have involved small numbers of job seekers.

Qualitative research does not seek to statistically estimate the proportion of participants who have particular attitudes or behaviours. Instead, it aims to identify issues and perceptions and explore the widest possible range of opinions. The findings are indicative only and opinions and attitudes cannot be attributed to definitive proportions of the total populations of interests.

However, the information contained in this report is based on the views of job seekers, exploring their perceptions and experiences of being unemployed and their attitudes towards being employed. Verbatim quotes illustrate the views expressed. Whilst we acknowledge that these perceptions may or may not reflect the real situation for all, they describe the general attitudes and opinions held by job seekers. This is critical for understanding what underlies their attitudes and drives behaviour, and provides the foundation for developing a segmentation model.

Quantitative studies with job seekers have been carried out to confirm the segments and further research and analysis of the segment sizes and composition will be undertaken shortly.

Job Seeker Segmentation

The first step in developing a segmentation model is to identify the dimensions which discriminate between different groups of job seekers.

Dimensions

The two key dimensions that discriminate Australian job seekers are:

- Level of motivation; and
- Level of limitation (openness) towards the type of job and job search activities that are acceptable to the job seeker.

It is interesting to note the differences in the dimensions identified for the Australian model and those in the New Zealand model (see Appendix A). In particular, level of job search activity was found not to be as effective in differentiating Australian job seekers, probably due to the impact of mutual obligation.

Level of Motivation

Job seekers have varying levels of motivation when it comes to looking for work and wanting a job. Those who are **motivated** are actively doing everything they can to look for work, are confident they will get a job and really want to work. These job seekers may have different levels of confidence about finding a job. They include:

- Self-confident individuals who believe in themselves and the skills they possess. This confidence and belief is not restricted to those with formal qualifications or work experience, but includes those who maintain a strong sense of self worth and belief in their own capabilities. They are often optimistic about their future employment prospects and are enthusiastic about job searching; and
- Job seekers who may lack confidence but their desire or need to work gets them started and keeps them trying, even though there may be barriers that make it difficult to look for work or to get a job.

In contrast job seekers at the other end of this dimension are **de-motivated**, and do as much as they have to to comply with job search requirements. These job seekers include people who:

- Want to work but lack confidence and feel employers don't want them due to their age, health problems, or criminal record, etcetera. They may not view themselves as having any or the 'right' skills to get a job. Often they lack self-esteem, which is decreased further with each job rejection. They may have given up on the idea of finding a job and therefore are less willing to look for work;

- May believe that they are unable to work and believe they should not be expected to find a job. They may suffer from a medical or psychological condition, which they believe, makes it impossible for them to look for work or work full-time; and

- Have no desire to look for a job. These job seekers may enjoy the unemployed life style and feel that work would have a negative impact on their quality of life and free time.

Level of Limitation

Job seekers may place limits on the methods of job search they will use and/or the type of job they will apply for. Job seekers with less or no limits are 'open' to a wide range of different job search activities, and/or the possibility of having a job and the kind of job they are willing to do. Unlimited job seekers are:

- Willing and open to all job search processes and avenues, even if they do not like doing it, they are willing to give anything a go if it means that they will find a job;

  "I'll do anything to get a job. It doesn't matter what job it is or what I have to do to get it. I want to work".

- Open to all job opportunities. These job seekers are not focusing on finding the 'specific job' and have no limits as to what job they would be willing to take, regardless of whether they feel they have the experience or the skills. Some may also see taking 'any job' as a stepping stone to other opportunities and feel that getting the 'right job' is a "*matter of getting your foot in the door*"; and

- Believe that they can work and that finding a job is a viable, desirable and realistic option for them.

At the opposite end of this dimension are job seekers who are limited in terms of the job search activity they are willing to undertake and in the jobs they would accept. They may also be limited in the sense that they do not view working as a possible or attractive option for them. Limited job seekers are:

- Restricted in the job search activities they are willing to undertake. For example, these job seekers may dislike cold canvassing or talking to employers and therefore will not pursue this type of job search strategy. They have placed limits on what they are willing to do to find work.

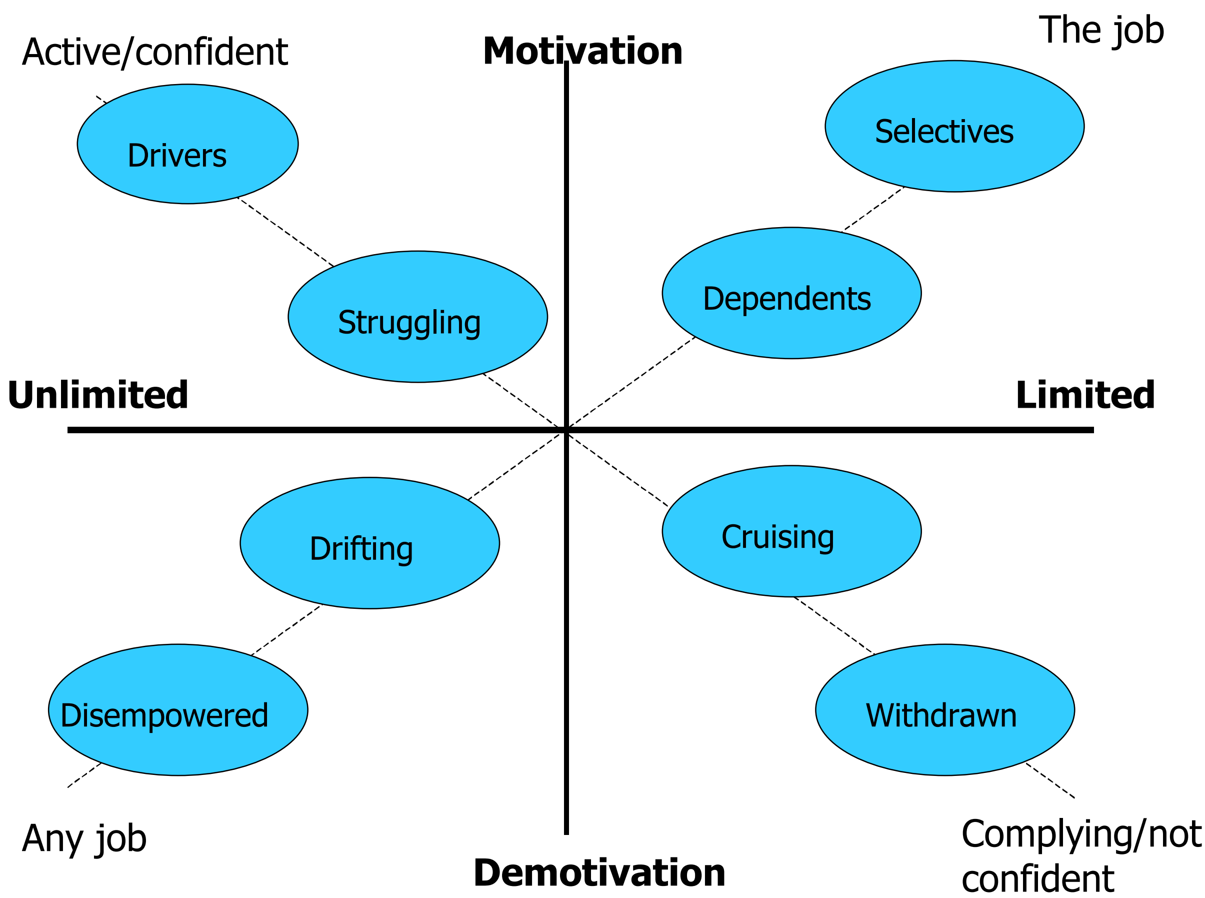
- Restricted in the type of work they are willing to take or apply for. Often they will have specific job criteria to be met before they would apply for or accept a job. These job seekers may only want to apply for jobs that meet their income, area, hours or professional criteria; and

- Do not believe they can work or that securing a job is a realistic possibility for them. Alternatively they may feel that working is not a desirable option because they do not want to work.

These dimensions and characteristics form the foundation for a segmentation model that identifies eight job seeker segments.

Figure 1 below provides a diagrammatical representation of the model. It shows the main defining dimensions of limitation and motivation as well as representing the influence of level of activity/confidence and attachment to the ideal of 'the job'.

Figure 1: Job seeker segments



Defining the Segments

Drivers are job seekers who are doing everything they can to get a job. They are confident and motivated and are open to all job opportunities and job search activities. They will try for any job possible and will do almost anything they can to secure employment. These job seekers will be cold canvassing and door knocking and often using innovative job search methods.

Drivers want to work and dislike being unemployed for many reasons. They do not see unemployment as normal and dislike not having a purpose or a reason to get up in the morning. They find it difficult not having anything to do and put 100% effort into finding employment.

Drivers are optimistic about their future and believe they will find a job soon.

> *"Ill try anything if it means that I'll get a job. I hate just sitting at home staring at the silly box. I want to be working. I know that if I go out everyday and look for a job one day I'm going to get one. It's better than doing nothing. At least if I'm looking and employers see that I'm really keen and want to work there's a good chance I'll get a job".*

Struggling job seekers are also motivated and are trying hard to look for work. These job seekers are willing to take any job but are less confident in themselves and their skills than Drivers. This lower level of confidence may mean that they are less creative in their job search activities. Continued rejection and extended periods of unemployment can have a negative impact on their motivation levels.

> *"I really want to work and I'm doing everything that I can to get a job, but it's not that easy. Every time an employer rejects you, you get a little bit more down heartened and it can slowly chip away at your confidence. I'm still pretty hopeful but if I don't get a job soon then I'll start to really worry".*

Drifting job seekers are less motivated than Struggling job seekers because they do not know what job they want and are unsure about how to go about finding a job. They are also less confident about themselves and their skills. These job seekers may be too shy to ask for help or may not know how to get it but they feel they need help to get a job. Drifting job seekers would take any job because they feel it would be better than being unemployed. Drifting job seekers appear to be 'lost' and unsure about what they want to do and how they can improve their situation.

"Since I left school I haven't really being doing anything. I've had a couple of part time jobs but I don't really know what I want to do and I don't like phoning employers because I don't know what to say or what they'd ask me. I need someone to help me find a job that I would like".

The ***Disempowered*** segment includes those job seekers who have lost their motivation to look for work and lack the confidence in themselves and their skills to job search but still want to work. These job seekers feel disempowered because they believe they have been overlooked by society and are disempowered by employers. Some believe that they possess good skills and experience but have '*reached their use-by-date'* and will never find employment again. Others believe that they will never escape a bad work history or, given the competition for jobs, that there is not a job out there for someone like them. Disempowered job seekers have given up hope of getting a job. In their present state of mind, they have accepted that getting a job is beyond their reach and have resigned themselves to living on the unemployment benefit.

"I would love to be working again but after years of trying to find work and not getting anything you start to think you'll never work again. I hate being unemployed, you can just barely survive on what they give you. You don't feel like a real person and life is depressing. I've worked all my life, but now I've just accepted that no one wants to employ me".

Selectives are driven individuals who have placed very specific limits on the type of job they are looking for and would accept. These job seekers are looking for 'the job' that meets specific criteria in terms of the type of work, the industry or profession the job is in, a certain income level, a job in the location they want or for the number of hours they are willing to work. Selectives are completely confident that they will eventually find 'the job'. They are motivated individuals who are extremely active within these limitations. They are looking for work that will accommodate their needs. These needs may include recognition, status and acknowledgment.

"I could get any job like scrubbing pots or waiting on tables but that would be so degrading and I'm far too qualified to do that. I could go back into government where I could probably get a good paying job but that's not what I want. I want to pursue my ideal employment and get my business up and paying for itself. This would be far more rewarding and stimulating for me, I like to work autonomously and not have to answer to other people. I want creative license".

Dependents are motivated to find a job and have a strong belief in themselves, **but are less confident than the Selectives** about getting the 'the right job' soon. Like the Selectives they are looking for 'the job' that matches their job criteria and personal needs. However, they are starting to **lose motivation and optimism** about getting 'the right job'. Despite their concern about the difficulty of finding the right job, they will not consider other job opportunities and often have restrictions about the job search activities they feel comfortable undertaking.

These are people who are depending on the system until the 'right' job comes along. Dependents dislike the unemployed life and would rather be working but are not willing to take just any job. They may consciously use 'the system' to support them while they pursue their ideal job and/or may be supplementing their income by taking on casual paid work (either legally or under the table) to live a more comfortable life while they wait.

> *"I'm not just going to take any old job. I know what I'm worth. If I take anything less than that then I'm just lowering myself even more. I may never get the right job but, I'd prefer to wait rather than just taking anything even if it means that I won't find it for a while".*

Cruising job seekers genuinely like the unemployed life style because it gives them freedom and time to do as they please. These job seekers have no desire to work full-time or in a permanent job and are not actively looking for work at this stage. They are merely complying with Centrelink requirements. Some may even be 'manipulating' their work diaries to prevent breaches so they can stay on the benefit.

Some job seekers in the Cruising segment supplement their income by taking on casual work (either legally or under the table) to maintain a more comfortable lifestyle, while others accept that there is a financial trade off in choosing not to work. They are happy to live within the constraints of the unemployment benefit. These job seekers may already possess material items such as a house and/or car and do not feel the need to work, or they may not want those possessions. Quality of life for them is about freedom and having the time to spend with their families.

> *"I enjoy being unemployed. It gives me time to do lots of other things that I really enjoy. I never get bored, I love being able to do things whenever I feel like doing them. I've got old cars I'm fixing up and am working on other projects, I would never get the chance to do these things if I was working".*

Withdrawn job seekers are not motivated to look for work and believe that they are unable to work. In effect these job seekers have withdrawn themselves from the job market. Withdrawn job seekers often have medical or psychological conditions that they feel makes it impossible for them to work. They no longer believe it is an option for them. Withdrawn job seekers may be in dispute with Centrelink about their employability and disability status, and may have a doctor's certificate that provides them with an exemption from job searching activities for a period of time. Withdrawns believe they will never work again, they feel that it would be better if they were on a Disability Benefit rather than wasting the government's money on job search assistance, or their own time looking for work.

> *"My health is such that I will never work again. I've accepted it, I would much rather be working. Do you think I want to live on $160 a week when I was earning $800 a week before? I've got no choice, my doctor has told me I can't work. Why can't they (Centrelink) believe me?"*

Summary of segment characteristics

The following table summarises the characteristics of each segment.

Characteristic	Drivers	Struggling	Drifting	Dis-empowered	Selectives	Dependents	Cruising	Withdrawn
Motivated	✓✓	✓	✕	✕	✓✓	✓	✕✕	✕✕
Unlimited	✓✓	✓	✓	✓	✓	✓	✕✕	✕
Any Job	✓✓	✓	✓✓	✓	✕✕	✕✕	✕✕	✕
Active	✓✓	✓✓	✕✕	✕	✓	✕✕	✕✕	✕✕
Confidence	✓✓	✓	✕	✕✕	✓✓	✓	✕	✕✕

Each segment shares characteristics with other segments in its quadrant. For example, Drivers and Struggling job seekers are motivated, active and unlimited. However, their relative levels of motivation, openness (or limitation), job search activity and selectiveness differentiate them. These relative differences are identified in the table above. A ✕✕ means that the segment is strongly defined by the absence of this characteristic. An ✕ means the characteristic does not apply to the segment, a ✓ means that the characteristic applies to the segment and a ✓✓ means that the segment is strongly defined by the characteristic.

Segmentation Tool

The first step in the quantitative phase of the research involved the development of a segmentation tool – a series of 21 statements designed to differentiate job seekers on the basis of the dimensions identified in the qualitative research, that is level of motivation and openness. These statements were included in the 2001 Job Seeker Evaluation of Employment Services (Centrelink) Survey[2], where job seekers were asked to rate their level of agreement with the statements, using a 10-point scale. Responses to these statements formed the basis for the development of the quantitative phase of the attitudinal segmentation model.

The question and statements (segmentation tool) used in the survey were as follows:

I am going to read you out a list of things that other people have said about looking for a job. Can you jot down the numbers from 1 to 10 and near the number "1" put Strongly Disagree and near the number "10" put Strongly Agree. Near 5 and 6 put middle.

Please tell me whether you agree or disagree with the following statements using your scale to help you give a number between 1 and 10.

Do you agree or disagree that….

READ & ROTATE

You already know how to look for a job
You do not know what sort of job you want
You would rather be unemployed than take a job you don't like
You feel totally comfortable applying for jobs and going for interviews
You do more than the average unemployed person to try to find work
You have been trying new ways to find a job
You don't think you should have to do paid work at the moment
You don't think any employer would want to employ you
You really want to work
You are doing everything you can but it's hard to get a job
You have a lot of confidence in yourself and your skills and abilities
You think you need more skills, education or training to get the right job for you
You can't be bothered looking for a job
You need a lot of help to find a job

[2] The 2001 Job Seeker Evaluation of Employment Services (Centrelink) survey was conducted in February 2001. Interviews were conducted with 3,500 job seekers who were registered with Centrelink as looking for work and who had contacted Centrelink in the preceding 6 months. This includes both job seekers on an allowance and those not on an allowance.

You know that you will find a job soon
You have been applying for lots of jobs recently
You know that you will find the right job eventually
You believe you should not have to look for work
You would take just about any reasonable job at the moment
You have recently been knocking on doors or phoning employers yourself
You don't mind being unemployed because it gives you time to spend with your family and friends

Each statement was chosen to reflect a dimension of the segmentation model. Depending upon the job seekers' level of motivation, limitation, job selectivity, job search activity and confidence they are more likely to agree or disagree with each statement.

Motivated job seekers are most likely to agree with:

- You have been trying new ways to find a job;
- You really want to work;
- You have a lot of confidence in yourself and your skills and abilities; and
- You know that you will find a job soon.

De-motivated job seekers are likely to disagree with the 'motivated' statements above and agree that:

- You don't think you should have to do paid work at the moment;
- You don't think any employer would want to employ you;
- You don't mind being unemployed because it gives you time to spend with your family and friends;
- You believe you should not have to look for work; and
- You can't be bothered looking for a job.

Unlimited job seekers are more likely to agree that:

- You feel totally comfortable applying for jobs and going for interviews;
- You do more than the average unemployed person to try to find work;
- You have been trying new ways to find a job

Limited job seekers are likely to disagree with the 'unlimited' statements above and agree that:

- You already know how to look for a job;
- You would rather be unemployed than take a job you don't like; and
- You don't think you should have to do paid work at the moment.

Job seekers who want **'the job'** are more likely to agree that:

- You would rather be unemployed than take a job you don't like;

Job seekers who will take **'any job'** will disagree with the statement above and are more likely to agree that:

- You would take just about any reasonable job at the moment

Active job seekers are more likely to agree that:

- You do more than the average unemployed person to try to find work;
- You have been trying new ways to find a job;
- You are doing everything you can but it's hard to get a job;
- You have recently been knocking on doors or phoning employers yourself;
- You have been applying for lots of jobs recently.

Complying job seekers are more likely to disagree with all of the 'active' statements above and are likely to agree that:

- You can't be bothered looking for a job.

Confident job seekers are more likely to agree that:

- You know you will find the right job eventually;

Job seekers who are **Not Confident** are more likely to agree that:

- You need a lot of help to find a job; and
- You think you need more skills, education or training to get the right job for you

Statistical development of the model

A technical paper on the statistical techniques employed is being prepared separately, however, the following describes the statistical development of the segmentation model in broad terms.

Development of the segmentation model was undertaken in two steps:

- the development of the segmentation model using factor analysis, and
- the development of a discriminant model of segmentation using discriminant analysis.

The discriminant model defines an algorithm (rule) to classify each person into a segment based on his or her responses to the statements. The discriminant model was chosen as the best method for replicating the segmentation. The discriminant model allows the segmentation to be replicated across different time periods and for any sample.

To allow comparisons with future samples, analysis of attitudinal segmentation data will be based on the discriminant model.

Quantifying the Segments

The table below shows the percentage of the job seeker population estimated to be in each of the eight segments. Detailed analysis of the segmentation data will be undertaken shortly.

Segment	Proportion of job seekers[3]
Drivers	16%
Struggling	8%
Drifting	13%
Disempowered	15%
Selectives	7%
Dependents	12%
Cruising	16%
Withdrawn	13%

[3] Source:2001 Job Seeker Evaluation of Employment Services (Centrelink) Survey - weighted data

Job Seeker Vignettes

The following vignettes demonstrate the types of experiences and attitudes discussed by job seekers in each of the job seeker segments.

Drivers

Michelle (confident, enthusiastic, determined and has now found employment)

Michelle is a very motivated and energetic 20-year-old who is full of confidence and life. She has worked and supported herself since she left school in Year 9. She has been unemployed for the last 6 months because her employer's business became insolvent. Michelle thinks that being unemployed is the most boring and unfulfilling existence possible. After losing her job Michelle signed up with a Job Network Provider straight away but was told she had to go to Centrelink first. Michelle found Centrelink unhelpful and received conflicting information about what she was eligible for. She did not receive a benefit for 6 weeks and had to borrow money to live on.

Michelle is now working two part-time jobs that she found for herself and is no longer receiving an unemployment benefit. She feels that the Job Network Provider was more focused on getting the long-term unemployed into jobs rather than helping people like her. She feels that she became employed through her courage, perseverance and enthusiasm to continue job searching and her willingness to take any job, despite constant demoralising knock backs.

Ideally, Michelle would like to go back to school and get her HSC so that she can better herself and extend her job choices. At the moment she is happy working but is unsure about her future because one of the jobs is temporary. However she is determined not to be unemployed again and says that she's willing to do anything. Michelle felt that the ideal employment service would be pro-active and match her skills and abilities to all potential employment, not just jobs that she has experience in. In addition, it would deliver services tailored to meet her individual needs and would contact her about potential jobs or training opportunities.

Tony (extremely confident, optimistic, trying hard and would take any job)

Tony is about to finish a short-term contract, is actively seeking full-time employment and is establishing his own businesses. Because he is currently working he is still registered as unemployed but does not receive the unemployment benefit. Tony was advised to stay registered due to his low income and the short-term nature of his employment, and to avoid the stand down period when his contract eventually finishes.

Tony took a redundancy package in 1996, travelled overseas with his wife and has worked in short term contracts on and off since that time. He will take any work as he sees it as an opportunity to develop networks and help him towards the job he wants. Tony is frustrated that there are few jobs available. At 56 he feels that employers are put off by his *"blonde hair"*, but he believes in himself and is looking for a niche. He uses private recruitment companies and wishes to deal with an employment agency that works hard to sell candidates to prospective employers and offers a professional, tailored service to employers who *"do not want to wait on hold for half an hour"*.

Struggling job seekers

Susan (trying hard to look for work, is motivated but starting to lose confidence)

Susan left school aged 16 and has worked in a factory for the last 3 years. She has been unemployed for nearly six months and is trying really hard to get a job. She hates sitting at home being bored and would take any job. Currently she has a full-time casual job but will soon need to find another. Susan plans to visit factories and industrial areas to seek work. She is motivated to look for work and believes she has skills and experience behind her.

She is hopeful that one day she may get a permanent job, but believes it is going to be tough to get a secure job. Her experience with her Job Network Provider has not been satisfactory and she believes they need to communicate and help her more than they currently do. Susan remembers struggling to find a job and feels she may lose confidence or momentum if she doesn't find a job soon. She would like a lot more help and wants a service that is going to keep her informed of job opportunities, set up interviews and provide training on how to use computers.

Tom (will take any job, is trying to find work but feels he needs help, is losing confidence)

Tom is 60 and a trained scientist. He took a redundancy package, planning to set up his own business but this fell through. He now has paid work for 10 hours a week and is a volunteer at a school. He has also just taken a toilet-cleaning job for another 5 hours a week but would really like to find a 30-hour a week job that would allow him to continue his volunteer work.

Whilst Tom has applied to attend a job matching session, he has not heard from the Job Network member since he originally called them over 3 months ago. He feels uncomfortable undertaking some job seeking activities and prefers to apply in writing rather than cold calling or door knocking. Tom is losing confidence and has a fear of rejection. He would really like to hear from his Job Network Provider because it would show that "someone cares about him". This would help to keep him motivated.

Lisa (trying really hard, needs support and motivation, would take any job)

Lisa left her job early in 1999 for health reasons. When she first became unemployed she was extremely withdrawn and completely lacked confidence. However, she has had some positive experiences with repeated bursts of contract work and a positive interview with a Job Network member. She now has more confidence and is more motivated to find a job. She is actively seeking permanent full-time work, but admits that it will be a struggle to keep going if she gets as many rejections as before. Lisa feels that it will be important to receive continued support from her Job Network Provider to ensure that she doesn't lose her motivation or confidence to look for work, particularly if it takes a while to secure employment.

Drifting job seekers

Kylie (does not know what she wants to do or how to get a job, not really trying, mixed levels of confidence, would take any job)

Kylie is 20 and has been unemployed since she left school at the end of 1999. She swings between feeling confident that she will get a job and feeling depressed about not finding work. Her job search activity also varies depending upon how confident and optimistic she feels. She admits that currently she is not trying hard to find work. Whilst she is bored being unemployed, she enjoys spending time with her friends and family. She does not know what sort of job she wants to do and if she gets "knocked back" she stops looking for jobs for a few weeks. Kylie has not asked Centrelink for help with her CV or for advice about how to get a job because she is shy and says this would make her feel incompetent and incapable. However, Kylie would welcome help and support if it were offered. Whilst Kylie would take almost any job, her ideal job would be working in a music shop and earning $100 a week rather than the unemployment benefit ($185 a fortnight). Kylie actually got a commission sales position but was advised that if she wanted to continue receiving the unemployment benefit she would have to give up the job.

Disempowered

George (low confidence, lack of self-esteem, depressed, would love to work, but not trying and does not believe he will ever work again)

George has been unemployed for over 10 years and for the last three years has done nothing to look for work. When he first became unemployed he applied for lots of jobs but did not get them because of his work history. George has simply given up trying and instead cares for his sick child. He has been trying to get a carers benefit. Over the years the rejections and lack of employment has left George feeling depressed, knocking his confidence and self-esteem. He is now too frightened and uncertain to look for work and truly believes that he will never work again. George thinks that there is nothing worse than being unemployed and that people and society have lost all respect for him. If given the chance he would love to work again and would take any job, because then he could feel better about himself and his family's future.

George feels that he needs a lot of help, not only to look for work but also to help with his confidence. He would also like to feel good about himself again so that he can believe that he could get a job. He would like training courses and work experience at the end of the course to ease him back into the workforce. Most of all George wants a service that cares and listens to his problems.

Maria (lacks confidence and is lonely and depressed, would like a part time job but believes there are no jobs for her, not currently looking)

Maria is a 50-year-old widow who has been registered on the unemployment benefit since her husband passed away, about six years ago. Maria has never really worked and left school early with no qualifications. For most of her adult life she has been a mother and a homemaker and feels that she has no real skills to offer an employer. She finds it difficult to be around a lot of people and is currently taking medication for her nerves. She was referred by Centrelink to take part in an Intensive Assistance program for a year. During that time she was contacted 4 times about possible jobs. Maria got two of the jobs but did not stay in them for very long as she had bad experiences in both of them.

Maria dislikes unemployed life but is not hopeful about her future. She is lonely and has withdrawn from society, which she feels has left her behind. She has given up hope of ever finding a job, and would do just about anything that was reasonable. She feels that there are no appropriate jobs available for someone of her age and lack of experience, and does not think that any employer would want her.

Ideally Maria wants a part-time job because she does not think that she could handle a full-time job. Maria suggests that government should concentrate on creating employment for those who can get it, rather than forcing her to undertake the futile and humiliating task of job searching. *"It's no use doing CVs or writing letters if the work is not there and if no one wants to hire you. It just makes you more depressed because with each rejection it just confirms that you're not wanted."*

Selectives

Sandra (highly confident, professional and driven to pursue 'the job')

Sandra is an educated professional who chose voluntary redundancy because she felt she needed to rejuvenate and rest from a highly stressful job. She received enough to live comfortably and pay off her mortgage and has spent the last year relaxing and pottering in her garden. Sandra now feels a financial and professional need to return to work, but she is unwilling to take any job. Instead, Sandra has started her own business. She believes this will not only provide her with a decent income but will also enable her to achieve professional satisfaction. She is enrolled in NEIS (New Enterprise Incentive Scheme) and has had her business plan approved. A key benefit of participating in NEIS is that she does not have to look for work. She is confident in her skills and abilities and is able to put all her energy into getting her business established.

When Sandra first registered with Centrelink she was required to sign up with a Job Network Provider however she found them of little use for someone like her. If she were not pursuing self-employment Sandra feels her own efforts and that of a professional recruitment agency would be more successful than the current Centrelink services in securing employment.

Jason (confident, highly motivated, is actively looking for a job in his profession where he lives)

Jason is only 20 years of age but has worked in the mining industry since he was 16. He has all the necessary licenses required to operate the heavy machinery and equipment that is used in mining. Unfortunately the firm he was working for closed down about six months ago, leaving Jason and 15 others without jobs. He has called, visited and applied with every mining company within 200 kilometres of where he lives with no success. Jason thinks that there are not a lot of mining jobs available where he lives and that the industry is facing hard times. He also believes that employers don't want to give a 'young bloke' like him a go because he might get drunk or turn up to work late. He feels that he has missed out on the few jobs that were available because of his age.

Despite the knock-backs Jason is determined to find a mining job close to where he lives. He will not consider looking for other types of work. He thinks that he is a pretty hard worker and has a lot of confidence in his skills and abilities. He believes that he could easily get a mining job up north or in Western Australia but is reluctant to move away from his family or the home that he has established with his girlfriend. Jason hates being unemployed and says living on the dole is hard when he is used to earning good money. He is motivated and active in searching for 'the job'.

Dependents

James (confident, has a good part-time job which he hopes will lead to full-time opportunities in a few years time)

James took a redundancy package in 1998 to set up his own business. However, the business has not been as successful as expected and James requires the unemployment benefit to cover periods when he is unable to earn. Because he worked in his business he has not been available for training. He has just begun a part-time position and is relatively confident that he is doing well. He feels that this part-time position will provide him with the experience he needs to be able to get a full-time position in his preferred field. Until this full-time opportunity presents itself James is willing to bide his time working part-time and uses the system to help support him. He is not actively looking for full time work and would not consider taking any job. Instead James will wait until he secures the job he is striving for.

James would like a service which would help him to identify the skills he would need to be able to get his ideal job, and then provide him with that training.

Neil – (wants a good paying job, not using a wide range of job search methods, expects it to happen, really wants to work)

Neil has been unemployed for over 6 years and is determined to earn at least $500 per week. He has turned down a job that offered $350 per week. Whilst he wants to work he is frustrated that "good jobs" are not advertised in the newspaper or on the job boards and is angry and stressed about being unemployed feeling that it is not "normal". Despite this, Neil will not take just any job and would prefer to stay on the unemployment benefit unless he gets 'the job' i.e. a job that pays him at least $500 a week. He will continue living on the benefit until the right job comes along and is happy to use the system to support him.

Neil would like a service which provides him with full information about the job market and someone he can talk to about his problems and the steps he can take to gain the type of employment that he would be willing to undertake. Currently Neil feels that Centrelink staff are *"very arrogant and that every answer is no"*.

Krystal (trying really hard to find the right part-time work and would rather stay on the benefit than work full-time)

Krystal has not worked full time for 5 years. She supported herself for 4 years until her savings ran out. In order to survive she has actively sought casual work. She is concerned about the pressure of full-time work and is likely to be moving on to a Part Disability Support Benefit. Krystal has therefore limited herself in the type of jobs she feels she can apply for. She currently has a casual part time job. Ideally she would like to continue working part-time with a benefit to top up her income.

Her ideal service would listen to what she wants and call her when the right job is available. However she feels confident in her own job search skills and is motivated within the limitations she has placed on the number of hours she is willing to work.

Cruising

Jarrod (highly qualified, confident, not seriously looking but would work if got 'the job', enjoys lifestyle aspects of being unemployed)

Jarrod is 34 years old and tertiary educated. He has returned from spending many years travelling overseas, taking casual labourer jobs to get by. He is now only interested in applying for 'nice jobs' that better match his qualifications, motivations and interests. He has an interview lined up which he feels relatively confident about. Jarrod feels compelled by the requirements of Centrelink to provide evidence of job searching and does so selectively. He enjoys writing application letters, however Jarrod does not mind if he does not get a job. He is confident and self-assured, and does not feel that he needs a job for self esteem, or that employment equates with happiness. *"In society if you're not working your considered worthless and to be not contributing any value. You're just bludging off the system. I don't believe this, I contribute in lots of other positive ways."*

Jarrod is currently writing the memoirs of his travels and considers this to be his job. He tried applying to Centrelink and other government agencies for a grant to allow him to try writing as a career but was not successful. Jarrod is happy living on unemployment and supplements his income by playing musical gigs in pubs and busking. He enjoys the lifestyle of being unemployed and the freedom to read and write, and spend time with his friends and girlfriend.

Jarrod believes that the Job Network Providers are not doing their job and that the current services are of little help for someone with his skills and qualifications. Jarrod wants a service that treats him as the client rather than a number, and provides pro-active services, which he feels the professional recruitment agency deliver.

David – (enjoys the lifestyle and freedom. Has confidence in his abilities but is not interested in working)

David is 26 years old and has been unemployed off and on for the last 3 years. David has had a difficult childhood and has been living and supporting himself since he was 14 years old. He enjoys the unemployed lifestyle because it allows him to be the master of his own time and gives him freedom to do other things. However the money he gets is barely enough to survive on and so he supplements his dole payments with under-the-table casual work. David has issues with drugs and authority, but is confident in himself and his skills and abilities. He hates being bored and often skateboards around town, sometimes dropping into cafes to see if there is any work available. David does not feel he has received any help from his Job Network Provider and feels that they should be doing more for him. The paid casual jobs that he's had have been from his own job search efforts. He strongly believes in his own abilities, although at times he feels employers can be judgmental about the way he looks.

David is unsure about what he wants to do, he believes Centrelink or his Job Network Provider should help him figure out what he wants to do and how he can do it – *"need to look at the long term solutions, rather than an 'any job quick fix'".* At present he does not want a full time job, his ideal lifestyle would be to work in the winter and then enjoy the summer by going on unemployment benefit.

Withdrawn

Evie (angry, depressed, and is not looking for work or able to work)

Evie is an ex-health professional who has suffered from a number of medical conditions for some years. She believes that she has reached the point where she is now unable to work. Her doctor has confirmed that she is unable to work and has sent Centrelink the appropriate documentation. She is currently in dispute with Centrelink about her employability and disability status. Evie believes she should be receiving a Disability Benefit and is angry with the government and the rigid rules and inflexibility she experiences at Centrelink. If she had a choice, Evie would rather be employed. She is confident she could get a job easily in her profession if she was healthy. Life for Evie is bleak. The financial security and personal satisfaction that she feels she used to have when she was working, is no longer an option for her. Evie wants a Job Network service that will take into consideration her personal situation.

Neville (angry and frustrated at being made to look for work, not motivated to job search. Does not believe he should be asked to job search)

Neville is a 58-year-old carpenter who moved from Sydney to get away from city living and to open up his own small business. Unfortunately the business did not succeed. He has been looking for work for the last 7 years, and says that nearly half the town is unemployed. He believes that he will never work again because of the lack of appropriate jobs in his area for someone of his age and physical capabilities. He really misses the camaraderie of working on building sites. He says that he gets bored at home with nothing to do.

Neville is extremely angry and frustrated with Centrelink and the government for making him look for work when he believes that there are simply no jobs available for him. He is not motivated to find a job and has completely withdrawn from the idea of ever working again. He simply goes through the motions of applying for jobs to comply with Centrelink requirements to ensure he receives his benefit. At age 58 and in his circumstances, Neville wants to retire on an Aged benefit and give up what he considers to be futile attempts to find a job. He has accepted life living on a benefit, and has no intention of moving to find work to start again. He says it is very tough financially, but he and his wife get by.

> *"The government should stop trying to make me find a job. The only job around here I could try for is working on a fishing boat, but at my age that would kill me or at least*

break my back. Where we live and at my age there are simply no jobs for me, and I'm too old to pack up and start again elsewhere. They should let people like me retire early and give up all this nonsense about making me get a job. I've done my bit, paid taxes all my life. They should just leave me alone".

Uses for Segmentation

The segmentation research can provide valuable information to better understand the needs of the different job seekers to which labour market policies are targeted. Armed with a better understanding of client needs, program managers and service providers can refine levels and types of assistance provided to clients and improve targeting of assistance to ensure services meet the needs of the individual job seeker. Traditional programs have been targeted to client groups through, for example, youth initiatives or services for older unemployed. The segmentation gives the Department and its various service providers, an alternative way of analysing client needs and refining services.

In the longer term, segmentation research provides many other useful possibilities. The tracking of individuals over time is one such possibility. Segmentation is not static. Job seekers will shift from being associated more with one segment than another during their job search experience as their confidence levels and job search intensity levels change and/or with the intervention of labour market assistance. Longitudinal studies to track movement of individuals between segments over time can inform the evaluation of labour market assistance by providing valuable information on the resulting attitudinal or motivational shifts and associated behavioural changes which occur with labour market assistance. This addresses the question: How can an individual be shifted from low motivation and low job search activity to higher levels through labour market intervention and what impact does this have on employment outcomes?

Tracking the relative size of the segments at different points in time can contribute to measurement of the effect of government interventions. Policies such as Mutual Obligation and Work for the Dole, for example, are partly aimed at increasing participation and developing work habits. By looking at segmentation over time it can be seen how the attitudes and job search behaviours of job seekers change with the longer-term implementation of these policies. This information linked with employment outcomes data, can contribute to the evaluation of the success or otherwise of such policies and, thus, inform policy refinement or new policy development.

Attitudinal segmentation research in New Zealand contributed to the development of a Needs Based Assessment Model (NBAM) as a component of individualised employment assistance delivered by the New Zealand Employment Service. The aim of the NBAM was to identify client need and categorise clients according to their level of need. The model included a range of variables, some of which measured attitudes, motivation and willingness to work. The model was computerised and the procedures developed for employment advisors to use when assessing job seekers. The model also included appropriate interventions that could be offered to clients. In a similar way, a longer-term use for the Australian segmentation research could be to contribute to the current JSCI developed by the Department to assess a job seeker's risk of becoming long term unemployed and their associated needs for labour market assistance.

Implementation of changes to the JSCI would require substantial further development work, testing, stakeholder consultation and desirably, piloting and full evaluation. Researchers evaluating the New Zealand NBAM recommended that attitudes and motivation be included in the job seeker assessment but noted that it should be through "well-designed questions" and that " the assessment is dependant on well-trained EAs [employment advisors]".

Although not intended at this stage, the segmentation research could also be used to inform a communication strategy or social marketing campaign. The segmentation researched in New Zealand was used to develop an advertising campaign which aimed to motivate job seekers to want to find work and to more actively use the assistance available from the New Zealand Employment Service. Advertisements were developed with each job seeker segment in mind, using different motivational levers identified in the research.

Behaviour Change Stages

A number of behaviour change models have been proposed. One such classification adapted from Prochaskau and Di Clemente (1992) describes the stages of behaviour change as:

- *Precontemplation:* people do not think about whether their behaviour is appropriate for them at this point in their lives. People in this stage require more information and education.

- *Contemplation:* people are actively thinking about and evaluating recommended behaviours. People at this stage will change if they can see the increased benefits associated with behaviour change as well as a decrease in costs of changing from current behaviour.

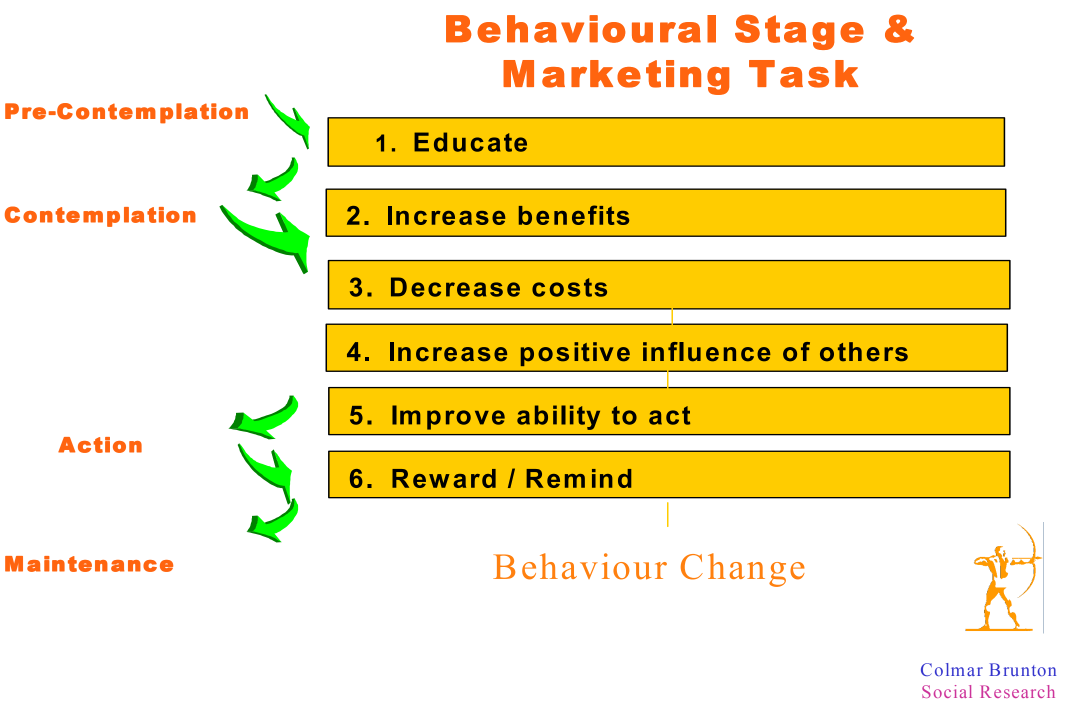
- *Action:* people are exhibiting the behaviour for the first time. At this stage people need support and reassurance from influential others in their lives and to see reward for their actions.

- *Maintenance:* people are committed to the behaviour and have no desire/intention to return to earlier behaviour. These people need their behaviour change to be maintained.

Success in influencing behaviour change will be dependent on which stage of the behaviour change model the individual is at, and the application of the appropriate response. The individual's stage of behaviour change can be determined by investigating the attitudes of the individual.

Changing Job Seeker Behaviour - A Social Marketing Framework

In addition to individual strategies to encourage job seekers to maintain or adopt active job seeking behaviour, this research has identified the key factors that could be used by DEWR to facilitate behaviour change amongst job seekers at a macro level. The framework provided by Alan R Andreason provides an approach to effecting change through social marketing. This model is shown below.



According to this model different strategies would be required to shift job seekers through each stage of behaviour change ie from pre-contemplation to contemplation to action to maintenance

Pre-Contemplation to Contemplation

Job seekers at pre-contemplation generally do not want to work or do not feel like they are able to work, and are not actively looking for work for a variety of reasons.
They either:

- Are not aware of the benefits *to them* of looking for work and working; or
- Do not believe job searching/working is relevant to or appropriate for them.

Cruising job seekers and **Withdrawns** are most likely to be at the pre-contemplation stage. The strategies required for job seekers at pre-contemplation are:

- Communicate the benefits *to them* of working (and looking for work); and
- Show that job seekers like them can effectively job search and find work.

Contemplation to Action

Job seekers at Contemplation are those who want to work but are not actively looking for work. **Disempowered** and **Drifting job seekers** are most likely to be at the Contemplation stage. The strategies required to encourage these job seekers to begin or increase their job search activities are to:

- Increase the benefits (perceived positive consequences) of job search and finding work. These include;
    - Increased self esteem and self worth;
    - Self respect and the respect of others;
    - Being accepted by their family, friends, peers and society;
    - Contributing to society;
    - Being able to plan for the future and achieve financial security;
    - Being able to achieve a better standard and quality of life;
    - Being able to provide for self, family and children's needs;
    - Meeting new people and making new friends and contacts; and
    - Being able to have a life not merely an existence.
- Decrease the costs (perceived negative consequences) of job search and finding work. These include;
    - Loss of leisure time/lifestyle choice;
    - Loss of family time;
    - Loss of secure income from the unemployment benefit;

    - Earning less in wages than the unemployment benefit;
    - Loss of health/ other social benefits;
    - Loss of exemption from child support/alimony; and
    - Additional expenses such as lunch, clothes, public transport.

- Use influential others (Government agencies, Job Network agencies, family and friends, employers) to encourage job search; and

- Increase self-efficacy i.e. make it easy for job seekers to look for work by over-coming barriers such as;
    - Lack of confidence and self esteem;
    - Not knowing what sort of job they want;
    - Not being aware of job searching techniques and processes, or how to implement them successfully to find a job;
    - Lack of education, skills, training or experience;
    - Absence from labour market for an extended period of time;
    - Criminal or bad work record;
    - Drug or alcohol issues;
    - Age barriers;
    - Geographical distances to jobs and not having transport;
    - Lack of jobs in the area; and
    - Not being able to find affordable and safe childcare.

Action to Maintenance

Job seekers at the Action stage of behaviour want to work and are actively looking for work. **Struggling job seekers**, **Dependents** and **Selectives** are most likely to be at the Action Stage. The strategy required to encourage these job seekers to maintain/increase their job search activity is to reward them for their job search activity and ensure that they receive the benefits they seek.

Drivers are most likely to be at the Maintenance stage of behaviour. These job seekers require help to maintain their levels of motivation and openness.

Segment Needs

The research suggests that employment services will be more effective if they deliver whatever it takes to help each job seeker gain employment. This requires an understanding of what individual job seekers need to undertake effective job search and get a job. In this respect the Department recognises that job seekers have diverse needs and currently funds many of the services desired by the job seekers included in the research.

This research indicates that many of the job seekers who participated did not appear to access many of the services either because they were not offered to them or did not know they existed, and therefore did not ask for them. Furthermore, some job seekers who did access current services were dissatisfied. Although it is beyond the brief of this study, results strongly indicate that there may be some issues with targeting and the provision of services. It will be crucial to ensure that Job Network Providers are targeting services appropriately and consistently if job seekers are to receive the help they need to look for and secure a job.

A range of strategies to assist job seekers will be needed and may include:

- the management of job seeker expectations;
- increasing motivation by identifying goals and stepping stones;
- confidence building;
- training;
- wage-subsidies to reduce the gap between expectations, what is available and what employers are prepared to pay;
- job search training;
- work experience;
- career advice; and,
- in some cases rigorous monitoring of job search activity and breaching if necessary.

Whilst every job seeker will require a tailored approach to facilitate effective job search the broad strategy required for each job seeker segment is described below.

Drivers

In terms of the Behaviour Change Model described earlier, Drivers are at the Maintenance stage of behaviour change in that they want to work and are actively looking for work. Their service needs centre around maintaining their motivation levels through encouragement and acknowledgement and reward for their actions. They may also benefit from advice on the more effective job search techniques and access to resources such as job information and equipment to assist with job seeking such as faxes, phones etc.

TASK: Maintain levels of motivation and openness.

Struggling job seekers

Struggling job seekers are at the Action stage of the behaviour change model. They require more support and encouragement than Drivers in order to increase their confidence levels and maintain motivation. These job seekers need positive reinforcement and advice on job seeking strategies. They need constructive feedback on job search experiences to prevent motivation waning through job rejections.

TASK: Increase levels of confidence to maintain motivation and widen job search methods.

Drifting job seekers

Drifting job seekers are at the Contemplation stage of the behaviour change model. They need assistance in identifying employment goals and learning job search methods. These job seekers need the positive influence of others to lead them to the understanding of the benefits of working and to lessen the barriers to employment. Drifting job seekers will likely benefit from structured pathways such as apprenticeships or vocational training or group job search which make it easier for them to enter into employment. With direction, support, and exposure to a wider range of job search methods, they will move into the Action stage of active and motivated job search.

TASK: Help identify employment goals to increase motivation and widen job search methods.

Disempowered

Disempowered job seekers are at the Contemplation stage of the behaviour change model. They first need to believe that getting a job is achievable, relevant and desirable. They may need intensive confidence and self esteem building to regain hope, motivation and improved self-image. Once their belief that they can work is re-established, they need guidance and direction about work options and will likely need assistance back into the workforce such as work experience and continued post placement support.

TASK: Change belief they will not be employed to increase motivation and trigger job search activity.

Selectives

Selectives are in the Action stage of the behaviour model as they are motivated and actively looking for work. These job seekers need a service which maintains their motivation levels but also opens them to greater work and job search opportunities. They need advice on how to get 'the job' they are seeking and advice about labour market opportunities which helps them set goals and, if necessary, closes the gap between their expectations and reality.

TASK: Maintain level of motivation and educate about labour market opportunities to increase openness.

Dependents

Dependents are also at the Action stage of the behaviour change model. They need education and support to maintain motivation and increase self-confidence as well as increase openness about the type of job and job search activities acceptable to them. They need a service which helps them identify the stepping stones to achieving their goals.

TASK: increase openness about type of job and job search activities

Cruising job seekers

Cruising job seekers are likely to be at the Pre-contemplation stage of the behaviour change model. They need a service which educates them about the benefits of working, increases motivation to find work and helps identify goals. These job seekers also need rigorous and regular follow up to ensure they meet their mutual obligations.

TASK: Increase motivation and job search activity

Withdrawns

Withdrawn job seekers at the Pre-contemplation stage of the behaviour change model. They need a service which offers support and encouragement and listens to the circumstance of the individual. These job seekers may need intensive counselling or medical services before being able to attempt any job search activity. They need to be in a position to be able to work and feel confident in themselves that they are able to work. If they are unable to work, they need to be reassessed and placed on a more appropriate allowance.

TASK: Increase motivation and openness to job search activities or ensure people are able to work.

Future Directions

The research to date has;

- used qualitative research to identify eight job seeker segments;
- devised a series of statements (the segmentation tool) designed to differentiate job seekers on the basis of their levels of motivation and limitation;
- collected data in the 2001 Job Seeker Evaluation of Employment Services (Centrelink) Survey;
- developed the segmentation model using factor analysis (based on research done in New Zealand);
- developed a discriminant model which can be used to reproduce the segmentation at different points in time; and,
- quantified the segments.

As discussed elsewhere in this report, there are a number of potential short and long term uses of the research. Further development of the research will seek to address these uses.

Segmentation data has now been collected in two job seeker surveys, and the next step in developing the research will be the detailed analysis of this data. Work will also commence shortly on developing a longitudinal survey of jobseekers to examine how and why job seekers move between segments.

The research is "a work in progress" - the segmentation work is developmental. This is the first attempt by the Department to investigate and build an attitudinal framework for better understanding the Australian job seeker population. The research described in this paper is the foundation for this framework. As more is learnt about the attitudes of job seekers and the interaction with service requirements and outcomes, the framework can be expected to evolve and improve.

Appendix A

New Zealand Job Seeker Model

The New Zealand Job Seeker Model

Research conducted by Colmar Brunton Social Research identified six sub-groups or segments in the study of job seekers in New Zealand in the early 1990s[4].

These cluster groups have been segmented according to their:

1. Level of confidence about finding a job; and
2. Whether they feel they are actively looking for work.

The use of such segmentation results in the following six cluster groups:

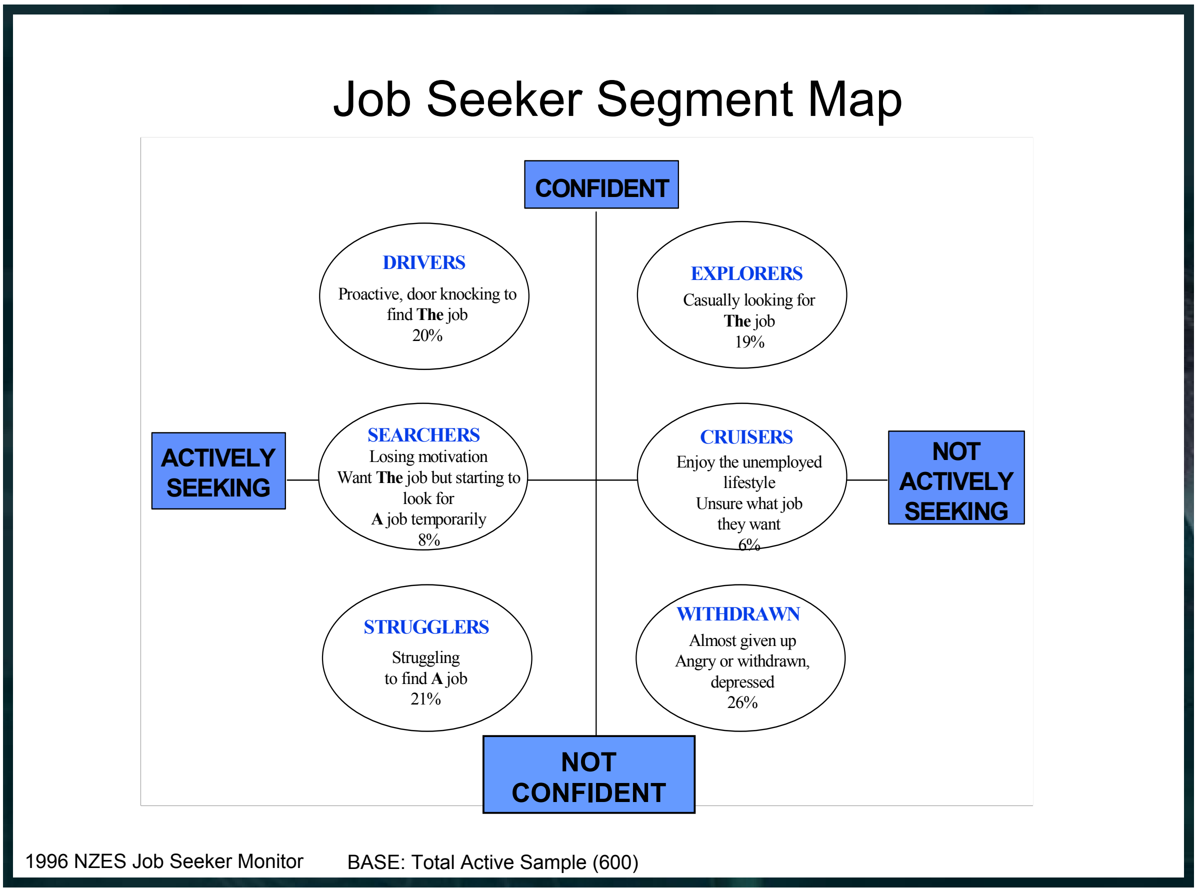
1. Drivers feel confident about looking for work and finding the 'right' job;
2. Searchers feel they are losing motivation and the confidence to find the 'right' job and may start to look for A job;
3. Struggling job seekers lack confidence and are struggling job seekers to find a job;
4. Explorers feel they are confident about their skills and about looking for work, and are waiting for The job;

[4] To determine the segments we used a multivariate segmentation analysis, looking at many different variables at once and at how the clusters of similar groups formed within them the technique used was K-means partitioning. This looks at the total data set (picture a cloud of data points in space) and then randomly picks starting point within it and clusters around these points. This is continued using new random starting points until clusters that have the maximum distance (difference) between them are found.

5. Cruising job seekers enjoy the unemployed lifestyle and are unsure about what job they want; and

6. Withdrawn job seekers have almost given up and lack the confidence to look for work. They may be angry, withdrawn and depressed.

The following diagram outlines the New Zealand job seeker segmentation



The statements that were used to define the New Zealand segments were:

Drivers are more likely than other job seekers to agree that:

- I have been applying for lots of jobs lately;
- I would take just about any reasonable job at the moment; and
- I have recently been knocking on doors or phoning employers myself.

Searchers are more likely than other job seekers to agree that:

- I think I need more skills, education, training to get the right job for me; and
- I need a lot of help to find a job.

Struggling job seekers are more likely than other job seekers to agree that

- I am doing everything that I can but it is hard to get a job;
- I think even if I try hard it will take me a long time to find a job; and
- I need a lot of help to find a job.

The **Explorer** segment of job seekers are more likely than other job seekers to agree that:

- I know that I will find the right job eventually;
- I prefer to find the right job for me;
- I know that I will find a job soon; and
- I have a lot of confidence in myself and my skills and abilities.

Cruising job seekers are more likely than other job seekers to agree that:

- I think I would be better off on a benefit than working; and
- I don't mind being unemployed because it gives me time to spend with my family and friends.

Withdrawn job seekers are more likely to agree that:

- I find it hard to get motivated enough to go to a job interview; and
- I can't be bothered looking for a job.

Differences between the New Zealand and Australian segmentations

Despite the similarities between job seekers in Australia and New Zealand, this research has identified key differences. These occur because the underlying dimensions and characteristics that define Australian job seekers are not the same as those that define New Zealand job seekers.

Whereas the New Zealand segmentation used the dimensions of levels of confidence and perceived job search activity, these were not effective in differentiating Australian job seekers. This seems to be due to the impact of mutual obligation on (albeit half-heartedly in some instances) job search activity and the greater prominence of jobs and job search selectivity. Levels of confidence and perceived job search activity still form key qualities of the 'motivation' dynamic but the Australian segmentation places equal importance on the 'openness' dimension which captures job selectivity and willingness to undertake a wide range of job search methods.

These dimensions create new and modified segments, and whilst some segment names have been retained they are defined differently. Specifically the segments have changed in the following ways:

- **Drivers** are still confident and actively job searching but are now willing to take any job rather than 'the job';
- Explorers have been re-named as **Selectives** and are now highly motivated to find 'the job';
- **Struggling job seekers** now have higher levels of confidence and retain their motivation, job search activity and lack of job search selectivity;
- **Drifting job seekers** replace Searchers and are not actively job searching;
- The Withdrawn have been divided into two segments. The new **Withdrawn** and the **Disempowered** both feel that employers will not hire them, however, the Withdrawn are closed to any sort of employment whilst the Disempowered are open to any job;
- Cruisers have become **Cruising** and are less motivated or confident and more job selective and limited in their job search activities; and

- A new segment **Dependents** has been identified. These are people who are depending upon the system until the 'right' job comes along. They are similar to the New Zealand Explorers or Cruisers in that they are selective about the type of work they want but are different because they actually want to work and are trying to find work.

Appendix B

Sample Profile

Location	Number of Interviews
Sydney	11
Wollongong	12
ACT/Queanbeyan	10
Goulburn	6
Yass	6
South Coast	7
Total	**52**

	Number of Interviews
Gender	
Males	27
Females	25
Total	**52**

Age	Number of Interviews
20 or less	6
20-24	5
25-39	13
40-54	21
54 or more	7
Total	**52**
Type of Service	**Number of Interviews**
Registered with Job Network & receiving assistance	35
Registered with Job Network & not receiving assistance	11
Not registered with Job Network Member	5
Other/don't know	1
Total	**52**

Duration of unemployment	Number of Interviews
Less than 3 months (12 weeks)	4
3-6 months (13-25)	7
6-12 months (26-52 weeks)	9
Re-registered (999)	3
12 months – 3 years (53 – 156 weeks)	16
More than 3 years (157 weeks and over)	13
Total	**52**

JOB SEEKER ATTITUDINAL

SEGMENTATION

ANALYSIS OF THE SEGMENTS

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May 2002

Department of
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INTRODUCTION

The purpose of this report is to quantify job seeker attitudinal segments and investigate whether job seeker characteristics, such as gender, age and length of unemployment, vary between the attitudinal segments. This report also aims to explore whether there are differences between the more motivated and less motivated segments in their awareness, use and satisfaction with the self-help facilities provided by Centrelink.

This analysis is based on data from the 2001 Job Seeker Evaluation of Employment Services (Centrelink) survey. The survey was conducted with 3,500 job seekers who were registered with Centrelink as looking for work and who had had contact with Centrelink in the six months prior to the survey. The survey included both job seekers on an allowance and those not on an allowance.

SUMMARY OF RESULTS

This research supports the view that the attitudinal segmentation provides a useful framework for understanding the characteristics of job seekers additional to that based on demographic characteristics. It has the potential to become another tool in the service provision and evaluation tool kits with which to better identify services most appropriate to the individual. Whilst demographics alone cannot describe each segment, certain characteristics are more likely to be found in some segments than others. In some cases the findings support stereotypes associated with job seekers, while in others they do not.

A summary of key findings are outlined below:

- demographics alone cannot define the job seeker segments. There is evidence, however, of a relationship between some demographic characteristics and job seeker segments;

- *Cruising* are least defined by demographics. This segment comprises job seekers from all age groups, genders, levels of education and locations;

- *Drivers*: Consistent with research on the impact of unemployment on motivation, job seekers with shorter durations of unemployment are more likely to be *Drivers*. Younger unemployed, and in particular, younger women, are also more likely to be *Drivers*;

- *Selectives* are more likely to be higher educated job seekers and to live in areas with a high level of access to services. Depending on the type of limitations these job seekers have, they may have a good chance of an employment outcome. The assistance they need should focus on assessing the reality of their limitations and broadening their notions of acceptable jobs by highlighting the evidence that getting into any job - no matter what pay or skill level - provides the best opportunity for longer term employment prospects;

- *Disempowered* job seekers are more likely to be older and to have a trade or Technical Certificate. Constituents of this group are also more likely to have identified themselves as having a disability. These job seekers need to be reassured that employment is still an option for them and given the confidence to keep looking for work;

- *Withdrawn* job seekers: older women and longer term unemployed are more likely to belong to this segment; and

- Job seekers in the motivated segments were more likely to use the self-help facilities at Centrelink and touch screens on a regular basis (at least once a fortnight) but this is not related to levels of satisfaction or awareness.

BACKGROUND

In 2001 the Department of Employment and Workplace Relations (DEWR) commissioned a study to develop a model of job seeker attitudinal segmentation, in which job seekers were grouped based on their attitudes towards finding work. The model was developed in several stages. In-depth interviews with a range of job seekers were first undertaken to identify what underlies job seekers' attitudes and drives their behaviour. This research resulted in the development of a framework of eight job seeker segments (Appendix 1 contains detailed descriptions of each of the eight Job Seeker Segments). The job seeker segments are based on two key dimensions: level of motivation (wanting a job, looking for work and confidence about finding a job) and level of limitation (openness to the possibility of having a job, the kind of job they are willing to do and/or the kind of job search activities they are willing to undertake). A set of attitudinal statements was then developed to measure the level of job seeker motivation and limitation. The attitudinal statements were included in the 2001 Job Seeker Evaluation of Employment Services (Centrelink) survey, where 3,500 job seekers were interviewed. Job seekers were asked to agree or disagree with each of the attitudinal statements using a 10-point scale for their responses. Extensive statistical analysis of responses to the attitudinal statements was undertaken to develop an algorithm to allocate job seekers to segments, as well as to quantify the segments. (Refer to Qualitative report for further information.)

Anecdotal evidence strongly suggests that the attitude of an individual job seeker has an important influence on the success of the job seeker in securing employment. Employers repeatedly claim that attitude is the most important job seeker characteristic. Despite this, no formal system for assessing the impact of attitudes on individual job seekers employment prospects has been developed for application in the context of the Australian employment assistance market. If traditional job seeker characteristics (such as age and length of unemployment) are the only factors considered as influential on employment outcomes then job seekers may not receive the type and level of assistance they require to secure employment. An anticipated advantage of using attitudinal segmentation in conjunction with a tool such as the JSCI (which determines a job seeker's eligibility for employment assistance) is being able to more accurately predict job seekers who are at risk of being long term unemployed and as a result to better target employment assistance.

OBJECTIVES OF THIS PAPER

The concept of segmenting job seekers by their attitudes towards finding work is currently being developed and reviewed on an ongoing basis. This paper contributes towards the understanding and evaluation of the attitudinal segmentation model. The two particular aims of this report are:

1. To investigate whether the job seeker segments can be (largely) defined using demographic data. This has been done at a broad level in this paper by examining the distribution of job seekers to the segments considering different demographic characteristics commonly used to determine job seeker disadvantage; and

2. To find out whether there is a difference amongst the segments in their use of Centrelink employment services. Awareness, use and satisfaction with self-help facilities at Centrelink will be examined to gain a preliminary insight into this issue.

FURTHER RESEARCH

This paper is based on quantitative data (3,500 job seekers) from the 2001 Job Seeker Evaluation of Employment Services (Centrelink) survey. The survey was conducted in February 2001 for the Department of Employment and Workplace Relations by Market Solutions Pty Ltd.

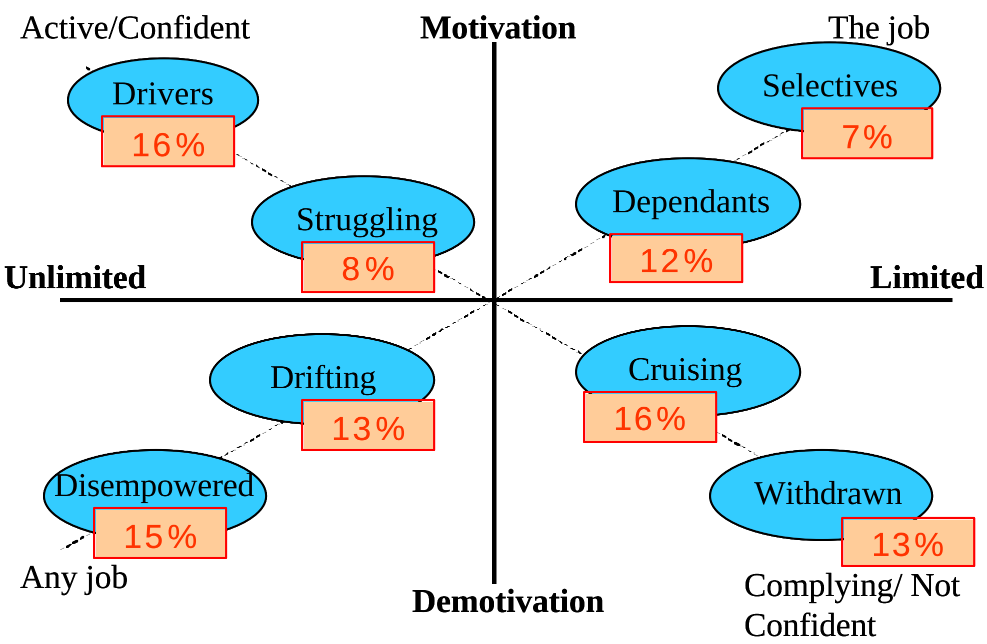
Analysis of data from the 2001 Job Network Participants Survey is also being conducted. Data from that survey will allow analysis of the extent to which job seeker segments use and receive Job Network employment services.

PROPORTION OF JOB SEEKERS IN EACH SEGMENT

Figure 1 shows the proportion of job seekers in each of the eight attitudinal segments. Overall, there is a fairly even distribution of job seekers to the segments. Slightly more job seekers occur in the *Drivers* (16%), *Diesempowered* (15%) and *Cruising* (16%) segments. *Drivers* are job seekers characterised by high motivation and openness to employment opportunities and are the most "job ready" in terms of having fewer attitudinal barriers to an employment outcome. *Disempowered* job seekers are characterised as wanting to work but having lost motivation to look for work and lacking confidence in their skills and abilities. *Cruising* job seekers have no desire to work full time and are therefore not actively looking for this type of work. *Disempowered* and *Cruising* job seekers could be expected to require different and perhaps more intensive assistance to achieve an employment outcome than job seekers in the *Drivers* segment who may only need to have their current behaviours reinforced and honed.

There are slightly fewer job seekers in the *Selectives* and *Struggling* segments (7% and 8% respectively).

Figure 1: Size of the Job Seeker Segments



Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

PROFILING THE JOB SEEKER SEGMENTS

Table 1 shows the distribution to the segments of the total sample (*Total row*) to the segments as well as the distribution of the gender and age subgroups to the segments. This allows the difference in the distribution of job seekers to the segments between the total sample and the subgroups to be examined. There is, for example, little difference in the proportion of males and females in the *Struggling* segment compared to the total sample (8% of males and 7% of females are *Struggling* compared to 8% of all job seekers).

The Table also shows the proportion of job seekers in the more motivated segments compared to the less motivated segments. The four groups, *Drivers, Struggling, Selectives* and *Dependents,* are defined as " more motivated" to achieve an employment outcome than those identified as "less motivated". Within the more motivated segments of job seekers there are differing degrees of motivation to find work: *Struggling* job seekers are considered less motivated that *Drivers* because they are less self confident or because rejection and extended periods of unemployment have impacted negatively on their motivation.

Table 1: Distribution of Job Seekers to the Segments – Gender and Age

	Drivers (%)	Struggling (%)	Selectives (%)	Dependents (%)	Total More Motivated (%)	Drifting (%)	Disem-powered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated (%)	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Gender											
Male	16	8	8	12	44	12	16	16	12	56	1876
Female	16	7	6	12	41	15	15	15	15	60	1624
Age											
Less than 25	19	7	8	14	48	15	12	15	11	53	1254
25-44	15	8	8	12	43	14	15	16	13	58	1466
45 or more	13	9	5	9	36	10	20	16	18	64	780
Males											
Less than 25	17	6	8	16	47	14	12	15	13	54	664
25-44	17	8	9	11	45	13	15	17	10	55	750
45 or more	13	12	6	11	42	7	20	16	15	58	462*
Female											
Less than 25	21	8	8	13	50	16	12	15	9	52	590
25-44	12	8	7	13	40	15	15	14	16	60	716
45 or more	13	4	3	5	25	13	21	18	23	75	318*

* Caution must be taken interpreting some results due to small cell size.

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

It is interesting to note that the proportion of job seekers in the *Cruising* segment does not change significantly with age and gender. Consequently the perception or stereotype that young male job seekers are more likely to be *Cruising* job seekers (relaxed about being unemployed, do not want to work in a full-time or permanent job and are not looking for regular work, although they may supplement their income with part-time or casual work) than other groups is not supported in this research. Age and gender also appear to have very little impact on the *Selectives* segment.

In general the distribution of job seekers across the segments does not vary substantially with gender and age. Some relationships, however, do occur which are outlined below.

- Older job seekers (aged 45 or more) are more likely to feel *Disempowered* (20%). This could be because they have been retrenched or have taken a redundancy package and may feel that they are not attractive to potential employers because of their age so have resigned themselves to not working again.

- Older females are more likely to be *Withdrawn* (23%) than older male job seekers (15%).

- Younger women are more likely to be *Drivers* (21%). Younger men are more likely than other job seekers to be *Dependents* (16%) and depend on the system to help them look for the "right" job.

Table 2: Distribution of Job Seekers to the Segments – Education Attainment

	Driver (%)	Struggling (%)	Selectives (%)	Dependent (%)	Total More Motivated (%)	Drifting (%)	Dis-empowered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated (%)	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Not finished secondary school	16	8	4	11	38	16	15	15	16	62	1645
Finished Yr 12 or equiv.	14	7	7	14	42	13	13	21	12	58	761
Trade /Apprenticeship /Tafe/Technical Certificate/ Diploma	16	8	10	13	47	12	19	10	12	53	589
Degree / Diploma or Post Grad	18	8	16	13	55	8	12	17	9	45	435

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

As seen in Table 2, the contribution of education level on job seeker attitude is mixed. In most cases the proportion of job seekers in each of segments for each subgroup is comparable. It is particularly interesting to note the proportion of *Drivers* from each education subgroup is similar. This suggests that job seekers can be highly motivated and open to job opportunities regardless of their education level. The proportion of job seekers in the *Selectives* segment varies discernibly with level of education. Job seekers with a Degree, Diploma or Postgraduate degree are more likely to be *Selectives* (16% compared to 7% of all job seekers).

The general trend evident from Table 2 is that job seekers who have not finished secondary school are less likely to be in the more motivated segments than job seekers with either a Degree/Dilpoma or Postgraduate degree or Trade/Apprenticeship/Tafe technical certificate /

diploma. The following differences in the distribution to the segments due to education are apparent:

- Job seekers who have not finished secondary school are more likely to be *Drifting* than job seekers who are tertiary educated. This could, in part, be due to the level of careers counselling or job search training that those with a higher level of education may have been exposed to or alternatively it could be because further education may assist job seekers in identifying their career path.

- The same trend exists for the *Withdrawn* segment; job seekers with less education are more likely to fall into this segment. This could reflect to the influence of age on this segment, that is, older job seekers are more likely to be in the *Withdrawn* segment and may be more likely not to have finished secondary school.

- Job seekers with a Trade / Apprenticeship / Tafe / Technical certificate are more likely to be *Disempowered*.

It is interesting to note that there are similar proportions of job seekers in the Cruising segment who have not finished secondary school (15%) and job seekers who have completed a university degree (17%). There are slightly more job seekers in this segment whose highest level of education is secondary school (21%).

Table 3: Distribution of Job Seekers to the Segments – Unemployment Duration

	Drivers (%)	Struggling (%)	Selectives (%)	Dependents (%)	Total More Motivated (%)	Drifting (%)	Disem-powered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated (%)	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Less than 6 months	20	9	9	14	52	12	13	15	8	48	1420
6 to 12 months	17	7	6	15	45	14	15	14	12	55	761
12-24 months	13	10	8	8	39	11	14	20	17	62	522
More than 24 months	10	6	6	10	32	16	19	15	18	68	797

*The results are based on registration start date and can be used as an approximate for unemployment duration.

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

Consistent with other research which links motivation and duration of unemployment the proportion of job seekers in the motivated segments falls overall as duration of unemployment increases (Table 3 above). There is, in particular, an inverse relationship between unemployment duration and the proportion of job seekers in the *Drivers* segment. Interestingly this downward trend is not evident for the *Selectives* (also highly motivated but limited in terms of jobs they are willing to accept) which suggests that motivation is not linked to duration of unemployment to the same degree for this segment.

The proportion of job seekers in the *Cruising* segment remains relatively constant despite unemployment duration increasing. It is not surprising that for this group duration of unemployment doesn't appear to have an impact on motivation to find work since these job seekers are not actively looking for full-time or permanent work. The proportion of job seekers in the *Withdrawn* and *Disempowered* segments increase significantly as duration of unemployment increases, suggesting a strong link between motivation and unemployment duration for these segments.

Table 4: Distribution of Job Seekers to the Segments – Geographic Region

	Drivers (%)	Struggling (%)	Selectives (%)	Dependents (%)	Total More Motivated (%)	Drifting (%)	Disem-powered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Very Remote/Remote	16	7	2	11	36	22	16	18	9	65	183*
Moderately accessible / Accessible	16	7	6	12	41	16	16	14	13	59	755
Highly accessible	16	8	8	12	44	12	15	16	14	56	2562

* Caution: Small sample size

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

Using the ARIA[1] measure of accessibility to general services (such as health, education and banks) we can broadly assess the interaction between geographic location and job seekers' attitudes to finding work. The majority of job seekers live in areas where general services are highly accessible.

Generally, there is little difference in the distribution to the segments between job seekers who live in moderately accessible, accessible and highly accessible areas. Again, this suggests the accessibility of services does not influence attitudes towards finding work.

Although interpretation is limited by the small sample size of remote job seekers, it would appear that job seekers who live in remote areas are less likely to be in the motivated segments and, in particular, less likely to be *Selectives* (2%). Job seekers who live in remote areas are more likely to be *Drifting* (22%) than those in highly accessible areas (12%).

Table 5: Distribution of Job Seekers to the Segments – Indigenous Job Seekers

	Drivers (%)	Struggling (%)	Selectives (%)	Dependent (%)	Total More Motivated (%)	Drifting (%)	Disem-powered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Non-Indigenous Job Seeker	16	8	7	12	43	13	15	16	13	57	3300
Indigenous Job Seeker	15	6	6	7	34	16	17	12	20	65	200*

*Caution: small sample size

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

The sample is not intended to be representative of Indigenous job seekers because the survey was administered by telephone and the sample size of Indigenous job seekers is small. Investigating the results for Indigenous job seekers, however, is interesting as part of early analysis of the attitudinal segmentation model.

Compared to job seekers overall, Indigenous job seekers are more likely to be in the *Withdrawn* segments and less likely to be in the *Dependents* and *Cruising* segments.

[1] ARIA is the Accessibility/Remoteness Index of Australia, developed by the Department of Health and Aged Care. It measures access to services by examining the distance from 201 key service centres across Australia. These service centres incorporates key services such as health care, education employment services etc. Five key groups exist ranging from Highly Accessible, Accessible and Moderate Accessible where access is relatively unrestricted to a wide range of goods and services and opportunities for social interaction to Remote and Very Remote which is locationally disadvantaged.

Table 6: Distribution of Job Seekers to the Segments – Persons with a Disability

	Drivers (%)	Struggling (%)	Selectives (%)	Dependents (%)	Total More Motivated (%)	Drifting (%)	Disem-powered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Persons without a disability	17	8	8	12	45	13	13	15	13	55	3251
Persons with a disability	9	6	4	10	29	13	26	17	15	71	249*

*Caution: small sample size

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

Table 6 shows the distribution of job seekers with a disability between the eight segments.[2] Although the sample size is restrictive it is interesting to note that job seekers with a disability are significantly more likely to be in the *Disempowered* segment than job seekers without a disability (26% of job seekers with a disability compared with 13% overall). Job seekers with a disability appear to be less likely to be *Drivers* and *Selectives*.

Table 7: Distribution of Job Seekers to the Segments – Country of Birth

	Drivers (%)	Struggling (%)	Selectives (%)	Dependents (%)	Total More Motivated (%)	Drifting (%)	Disem-powered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Australian	16	7	7	13	42	14	15	16	14	58	2720
English Speaking Background	19	14	6	13	52	14	11	12	12	48	272*
Non English Speaking Background	14	10	13	7	44	8	16	17	14	56	500

* Caution: Small sample size

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

Table 7 shows that there is not a significant difference in the distribution to the more motivated and less motivated segments between job seekers born in Australia and job seekers born in non-English speaking countries (42% of job seekers born in Australia in the motivated segments comparable with 44% of job seekers born in non-English speaking countries).

Job seekers born in a non-English speaking country are equally likely as other job seekers to be *Drivers*, *Withdrawn, Cruising* or *Disempowered.* There are some differences between Australian and overseas born job seekers – job seekers born in a non-English speaking country are twice as likely to be Selectives as job seekers with an English speaking background and are almost half as likely to be dependents or drifting.

[2] The variable used in this analysis includes job seekers who inform Centrelink they have a disability in their registration interview as well as those job seekers on a disability payment.

Table 8: Distribution of Job Seekers to the Segments – Labour Market Strength

	Drivers (%)	Struggling (%)	Selectives (%)	Dependents (%)	Total More Motivated (%)	Drifting (%)	Disem-powered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Weak labour market	17	8	7	12	43	13	15	14	14	57	1297
Medium labour market	15	7	8	12	42	13	16	15	14	58	1663
Strong labour market	15	9	6	13	42	16	13	19	10	58	505

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

Table 8 depicts the distribution of job seekers to segments across local labour markets of varying degrees of strength[3]. Only 14% of job seekers live in areas considered to be strong labour markets, 48% live in a medium strength labour markets and 37% live in weak labour markets.

Overall, the results suggest that the distribution of job seekers to the more motivated and less motivated segments does not vary greatly with the unemployment rate of job seekers' local employment area. Interestingly, job seekers who live in a strong labour market appear to be less likely to be in the *Withdrawn* segment but slightly more likely to be in the *Cruising* segment than job seekers who live in weak labour market areas.

Table 9: Distribution of Job Seekers to the Segments – Type of allowance

	Drivers (%)	Struggling (%)	Selectives (%)	Dependents (%)	Total More Motivated (%)	Drifting (%)	Disem-powered (%)	Cruising (%)	Withdrawn (%)	Total Less Motivated	n
Total	16	8	7	12	43	13	15	16	13	57	3500
Not on allowance	15	6	7	14	42	14	14	15	15	58	355
Youth Allowance/ Newstart Allowance	17	9	8	11	46	12	16	15	11	54	2566
Other Allowance	9	5	1	10	24	14	16	23	23	76	579

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

For those on an employment related allowance, the distribution across the segments is similar to that for all job seekers. For those on other allowances who have registered as looking for work, both the *cruising* and *withdrawn* segments are larger (23% each) than for all job seekers (16% and 13% respectively). This may be because these allowees elect to register as job seekers at some stage but find the transition to work or job search activity too hard for financial or other reasons.

[3] This is based on Statistical Labour Areas and postcodes.

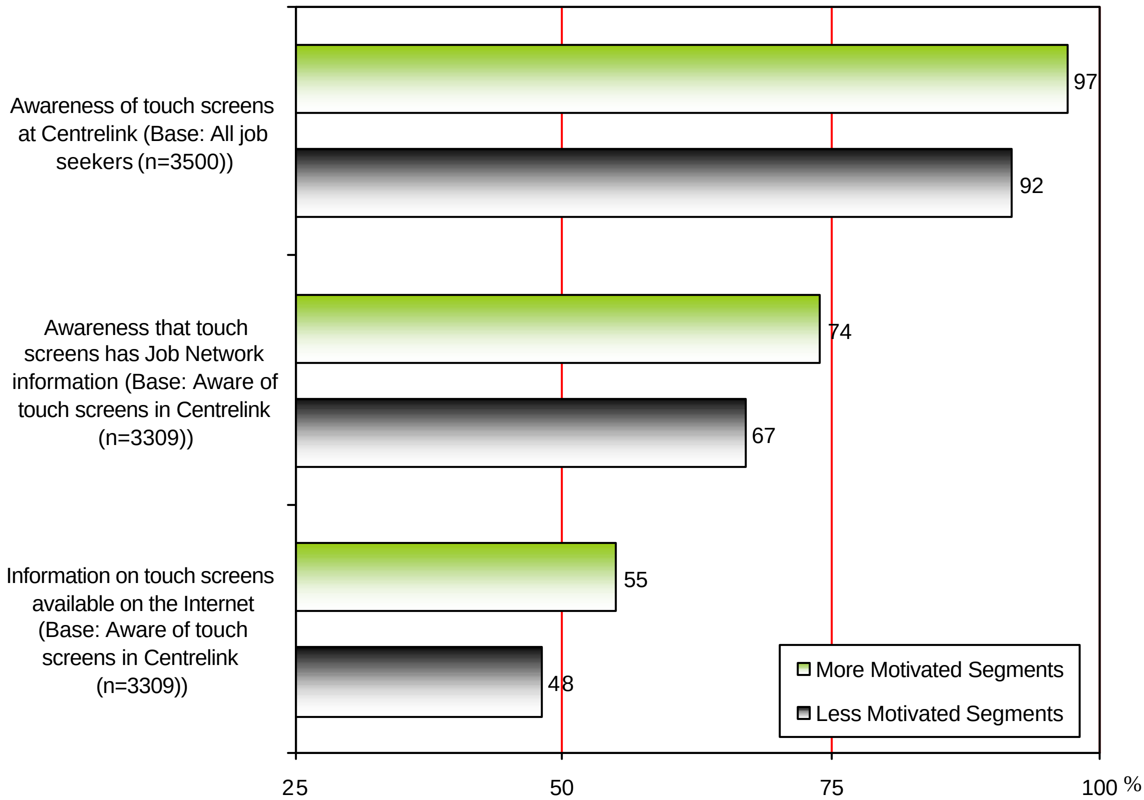
AWARENESS, USE AND SATISFACTION WITH SELF-HELP FACILITIES

Given that the attitudinal segmentation model is based on the assumption that there is a relationship between motivation and job search activity, it is reasonable to expect motivated job seekers to make more use of job search facilities. This section investigates whether there is evidence to suggest that more motivated job seekers use Centrelink's self-help facilities more than less motivated job seekers[4].

Job seekers can use Touch Screens at Centrelink to search for jobs. Figure 2 (below) shows the awareness of touch screens at Centrelink offices, that touch screens contain job network information and that information on touch screens can be accessed via the Internet.

In general a greater level of *awareness* of touch screens was recorded for the more motivated segments relative to the less motivated segments. As shown in Figure 2:

Figure 2: Awareness of Touch Screens



Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

[4] Further analysis could consider the use of job search equipment and other employment services provided by Job Network Providers.

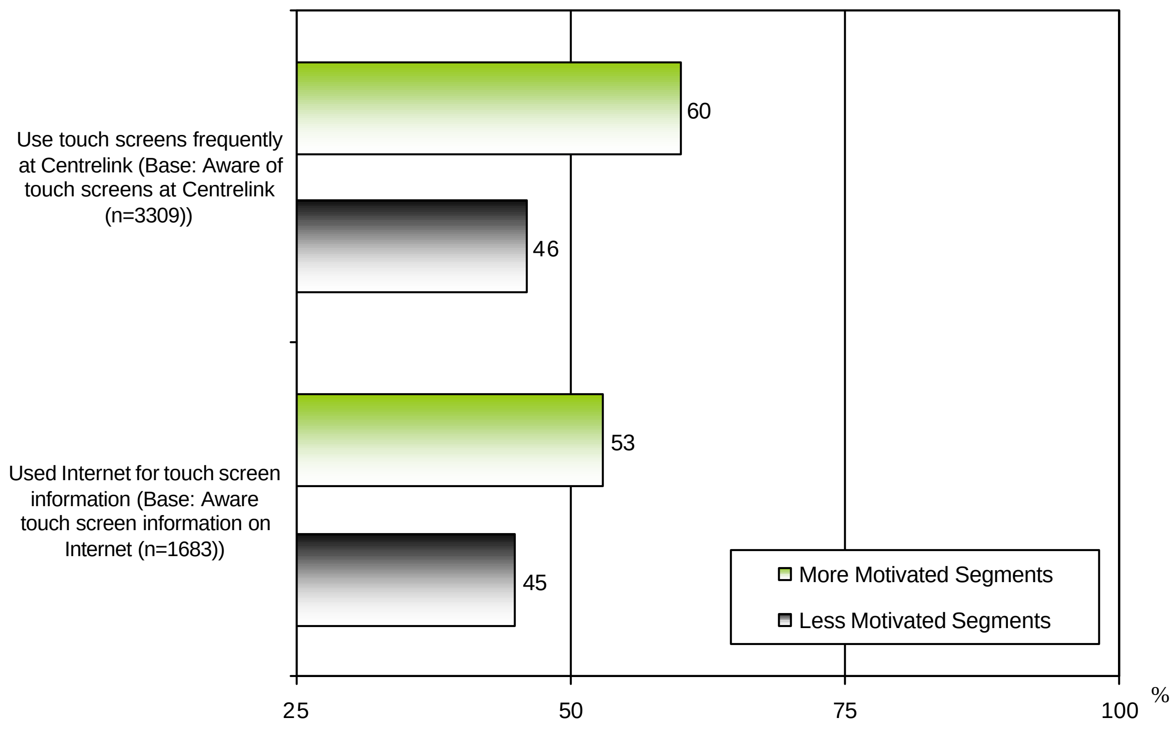
- Although the awareness level of touch screens at Centrelink offices is high amongst all job seekers (94%); the more motivated segments returned a slightly higher level of awareness (97% compared with 92% for less motivated segments).

- Some 70% of those job seekers aware of touch screens were also aware that information about Job Network was available from touch screens. Awareness for the more motivated segments was higher (74%) than for the less motivated segments (67%).

- Awareness of the availability of touch screen information on the Internet is lower generally (51%) amongst those aware of touch screens. Job seekers in the more motivated segments were more likely to report awareness (55% compared with 48% for the less motivated segments).

Figure 3 shows that the high level of awareness of touch screens has not been converted to a high level of *use*. Overall, only 53% of those job seekers aware of touch screens at Centrelink use them frequently. Motivated job seekers were more likely to use the touch screens at least once a fortnight (60% compared with 46% in the less motivated segments).

Figure 3: Use of Touch Screens at Centrelink



Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

As job seekers can access the information available from touch screens at a Job Network agency or via the internet, it is also worth noting that job seekers in the more motivated segments were more likely to report that they never or rarely use the touch screens at Centrelink because they:

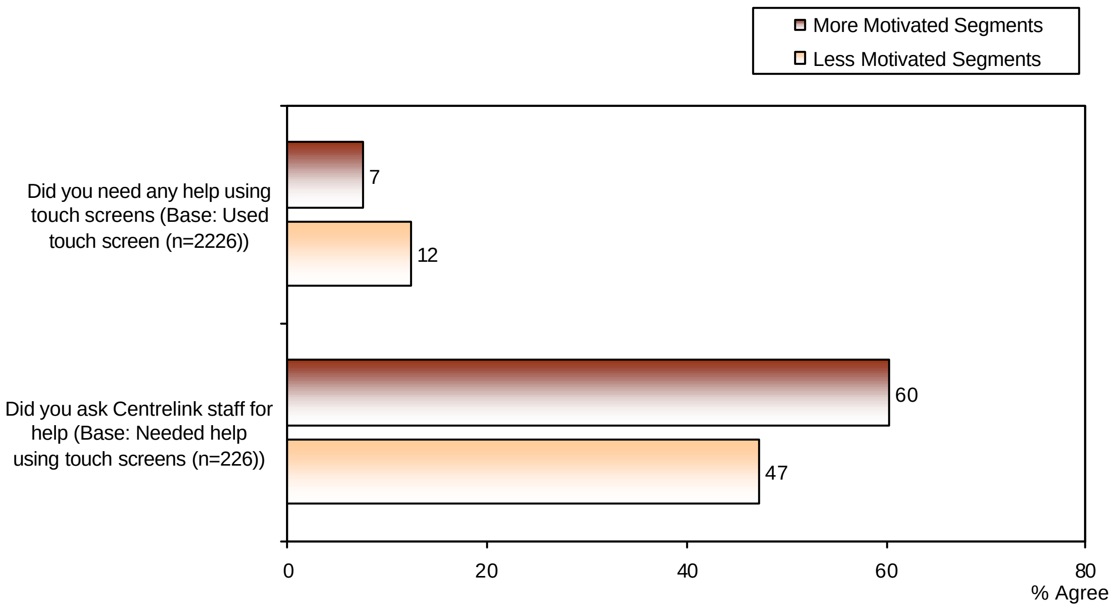
use touch screens at a Job Network agency; use touch screens elsewhere; or look for jobs on the internet (30% compared with 19% of job seekers in the less motivated segments).

The use of the internet to access touch screen information, amongst those aware that touch screen information is available on the Internet, is again higher for the more motivated segments (53%) compared with the less motivated segments (45%).

The results suggest that more motivated job seekers are more likely to use the touch screen information both at Centrelink and through other channels.

Job seekers in the less motivated segments were more likely to report that they needed help using touch screens (12% compared with 7%). As shown in Figure 4, however, these job seekers were less likely to ask Centrelink staff for help when using touch screens (47% compared with 60%).

Figure 4: Obtaining help when using the touch screens

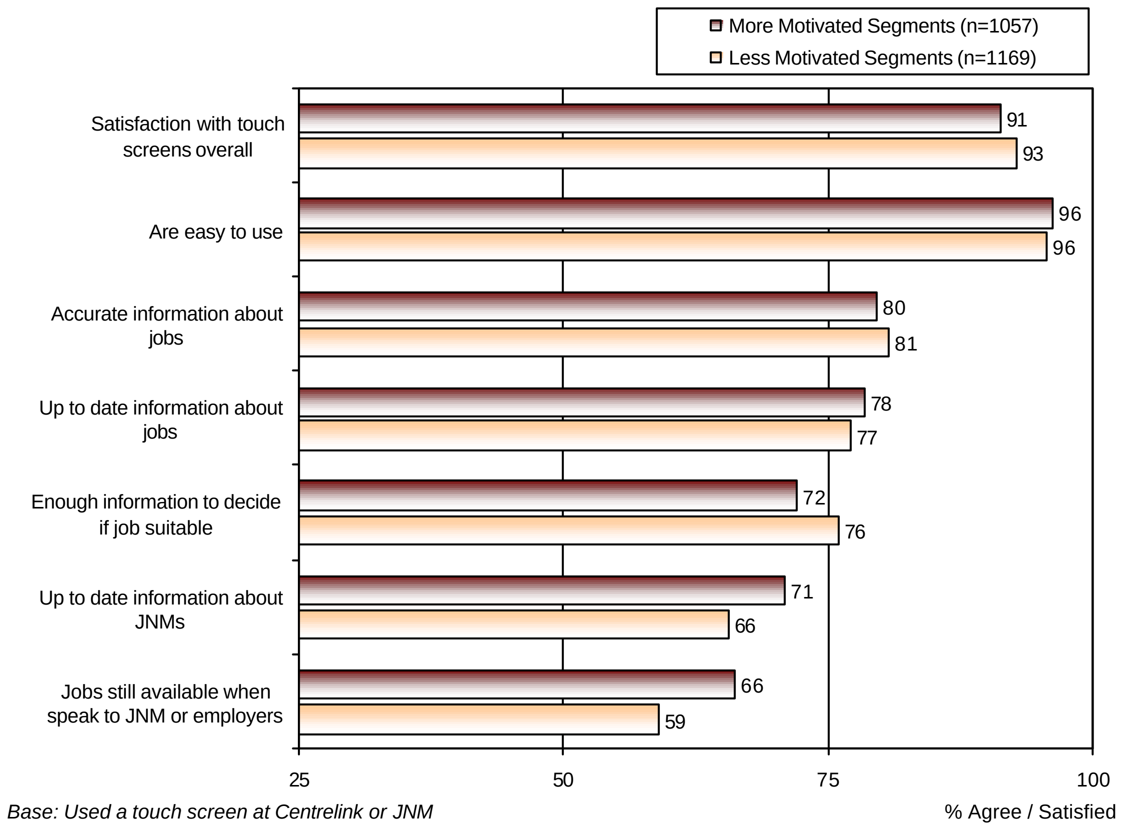


Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

There are mixed results with regard to key indicators of satisfaction with touch screens. There is little difference in the satisfaction with the touch screens overall between the more motivated and less motivated segments. Awareness of touch screens at Centrelink and satisfaction with touch screens overall at Centrelink do not appear to explain the difference in the use of touch screens at Centrelink between the more motivated and less motivated segments.

As shown in Figure 5, there is little difference in the level of agreement between the more motivated segments and less motivated segments that touch screens are easy to use and contain accurate and current information.

Figure 5: Satisfaction with Aspects of Touch Screens



Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

Although the majority of job seekers agree that touch screens have enough information to decide whether positions are suitable, job seekers in the more motivated segments are less likely to agree with the statement (72% compared with 76% for the less motivated segments).

Job seekers in the less motivated segments were less likely to agree that touch screens contain up to date information about Job Network Members (66% compared with 71% of job seekers in the more motivated segments) and were even less likely to agree that jobs are still available when they speak to Job Network Members or employers (59% compared with 66% of job seekers in the motivated segments).

Table10: Self-help Facilities (excluding Touch Screens)

	Newspapers (%)	PCs for writing resumes & letters (%)	Photocopier (%)	Telephone (%)	Fax (%)	Use equipment frequently (%) Base: Used other self help (n=1972)
Drivers	36	19	41	29	24	50
Struggling	35	20	41	35	24	55
Selectives	28	16	38	22	17	54
Dependents	22	16	35	27	17	47
Total More Motivated Segments	30	18	39	28	20	51
Drifting	34	19	30	20	11	29
Disempowered	40	15	31	28	15	41
Cruising	27	13	28	21	11	33
Withdrawn	36	16	29	24	9	37
Total Less Motivated Segments	34	15	30	23	11	35

Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

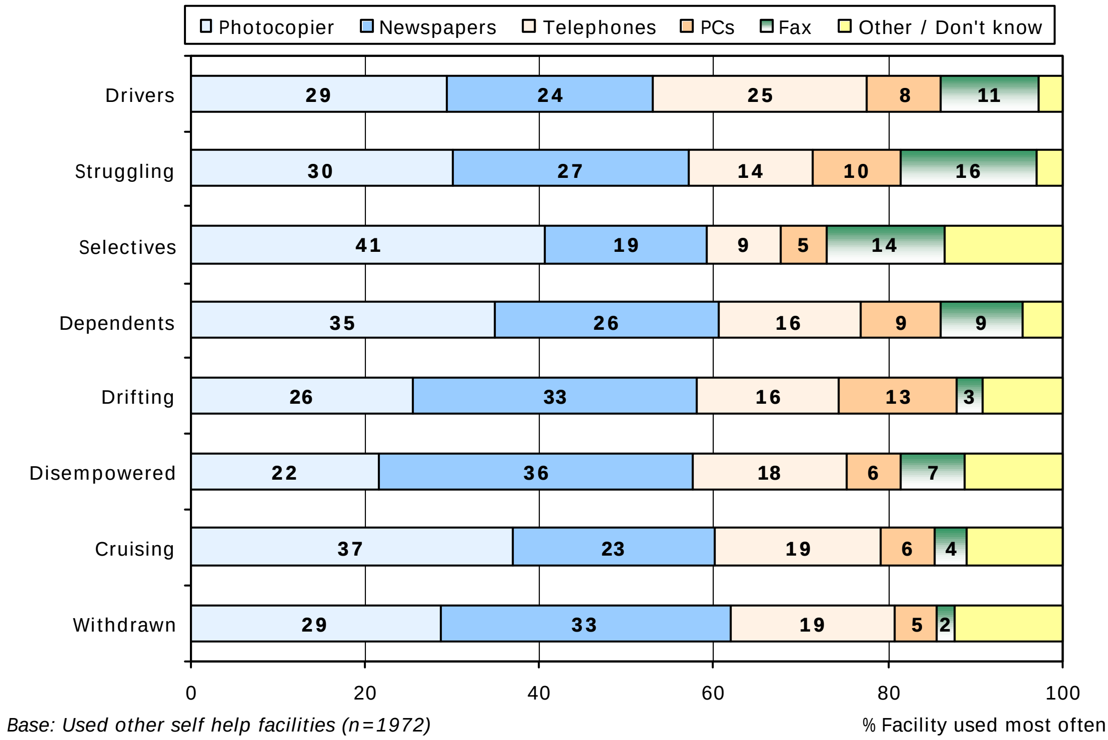
Job seekers were also asked to identify the self-help equipment they had used at Centrelink. Job seekers in the more motivated segments were more likely to have used more of the self-help equipment (photocopiers, telephones and faxes) at Centrelink offices. Job seekers in the less motivated segments were more likely to have used only newspapers. The groups appear to be equally likely to have used the computers to write resumes and letters (Table 10).

Job seekers who had used the self-help equipment in Centrelink offices were asked how often they used the equipment. Just over half (51%) the job seekers in the more motivated segments used the newspapers, computers, photocopiers, telephones, fax machines frequently (at least once a fortnight) compared with 35% of job seekers in the less motivated segments.

Using the equipment at home instead of at Centrelink was more likely to be cited by more motivated job seekers than less motivated job seekers as a reason for infrequently (rarely, only used once or have never used) using the self-help facilities. Around 56% of the more motivated job seekers did not use the self-help facilities because they had the facilities at home, used them at a Job Network agency or used the facilities elsewhere, compared with 40% of job seekers in the less motivated segments.

Figure 6 shows the equipment *most often used* by job seekers at Centrelink.

Figure 6: Self-help Facilities Used Most Often By Job Seekers



Source: Job Seeker Evaluation of Employment Services (Centrelink) 2001

Around 60% of job seekers in each segment reported that the photocopiers and newspapers were the self-help facilities they used most often at Centrelink offices.

Similar proportions of job seekers in the more motivated and less motivated segments required help using the self-help facilities (18% of more motivated job seekers compared to 19% of less motivated job seekers). The groups were also equally likely to ask for help from Centrelink staff or the hotline number (80% of more motivated job seekers compared to 76% of less motivated job seekers). The kind of help needed included showing how to use or start the equipment, help when the equipment is not working and help in using computer programs.

The level of satisfaction with self-help facilities amongst those job seekers who used them was similar for more motivated job seekers and less motivated job seekers (97% satisfaction for the more motivated segments compared to 95% for the less motivated segments). Again satisfaction with the equipment does not appear to explain the difference in the degree of usage of the self-help equipment.

The results from the 2001 Job Seeker Evaluation of Employment Services finds that in general job seekers in the motivated segments are more likely to use the self-help facilities frequently at Centrelink. As the level of satisfaction with the facilities is similar, this higher level of usage is likely to be related to their motivation to find work.

CONCLUSION

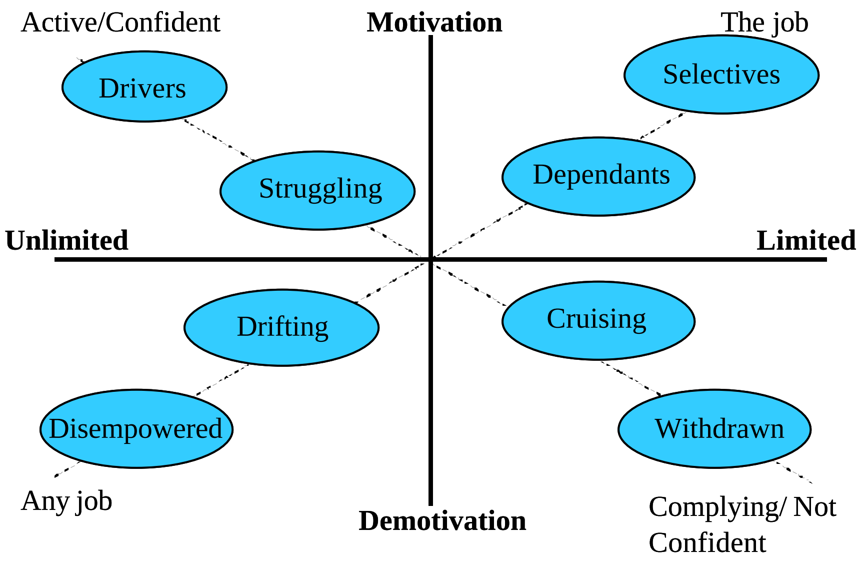
- The characteristics associated with each of the segments can help identify the types of assistance required to most effectively generate the desired behaviours of active job search, economic participation and reduction of income support reliance. Job seekers who are highly motivated, active, confident and open to all job opportunities (*Drivers*) made up one of the largest segments (16%) as measured by a survey of some 3500 jobseekers in 2001. Other larger segments include *Cruising* job seekers and *Dis-empowered* job seekers.
- The survey also identified that more than half (57%) of job seekers were in the less motivated segments. This indicates a strong focus for assistance on increasing the "benefits" of job search and paid employment and decreasing the "costs" of moving from unemployed to employed.
- Just under half (48%) of all job seekers were identified as being in the more limited segments. Only 7%, however, were highly motivated and actively searching but had specific limits on the type of job they would accept. Depending on the type of limitations these job seekers have they may have a good chance of an employment outcome. Assistance may need to be provided in assessing the reality of their limitations and broadening their understanding that getting into any job - no matter what pay or skill level - provides the best opportunity for longer term employment prospects.
- Whilst demographics alone cannot describe each segment, certain characteristics are more likely to be found in some segments than others. In some cases the findings support stereotypes associated with job seekers (older job seekers are more likely to be Disempowered or Withdrawn, for example) while in others they do not.
- Job seekers in the more motivated segments were more likely to use the self-help facilities and touch screens on a regular basis but this does not appear to be related to levels of satisfaction or awareness.

APPENDIX ONE

DESCRIPTION OF ATTITUDINAL SEGMENTS

<u>**Job Seeker Attitudinal Segmentation**</u> –
<u>an Australian model</u>

Job seeker segments



Defining the segments….

Drivers are job seekers who are doing everything they can to get a job. They are confident and motivated and are open to all job opportunities and job search activities. They will try for any job possible and will do almost anything they can to secure employment. They find it difficult not having anything to do and put 100% effort into finding employment. Drivers are optimistic about their future and believe they will find a job soon.

Struggling job seekers are also motivated and are trying hard to look for work. These job seekers are willing to take any job but are less confident in themselves and their skills than Drivers. This lower level of confidence may mean that they are less creative in their job search activities. Continued rejection and extended periods of unemployment can have a negative impact on their motivation levels.

Drifting job seekers are less motivated than Struggling job seekers because they do not know what job they want and are unsure about how to go about finding a job. They are also less confident about themselves and their skills. These job seekers may be too shy to ask for help or may not know how to get it but they feel they need help to get a job. Drifting job seekers would take any job because they feel it would be better than being unemployed. Drifting job seekers appear to be 'lost' and unsure about what they want to do and how they can improve their situation.

The ***Disempowered*** segment includes those job seekers who have lost their motivation to look for work and lack the confidence in themselves and their skills to job search but still want to work. These job seekers feel disempowered because they believe they have been overlooked by society and are disempowered by employers. Disempowered job seekers have given up hope of getting a job. In their present state of mind, they have accepted that getting a job is beyond their reach and have resigned themselves to living on the unemployment benefit.

Selectives are driven individuals who have placed very specific limits on the type of job they are looking for and would accept. These job seekers are looking for 'the job' that meets specific criteria in terms of the type of work, the industry or profession the job is in, a certain income level, a job in the location they want or for the number of hours they are willing to work. Selectives are completely confident that they will eventually find 'the job'. They are motivated individuals who are extremely active within these limitations. They are looking for work that will accommodate their needs. These needs may include recognition, status and acknowledgment.

Dependents are concerned about the difficulty of finding the right job, they will not consider other job opportunities and often have restrictions about the job search activities they feel comfortable undertaking. These are people who are depending on the system until the 'right' job comes along. Dependents dislike the unemployed life and would rather be working but are not willing to take just any job.

Cruising job seekers genuinely like the unemployed life style because it gives them freedom and time to do as they please. These job seekers have no desire to work full-time or in a permanent job and are not actively looking for work at this stage. They are merely complying with Centrelink requirements. Some may even be 'manipulating' their work diaries to prevent breaches so they can stay on the benefit.

Some job seekers in the Cruising segment supplement their income by taking on casual work (either legally or under the table) to maintain a more comfortable lifestyle, while others accept that there is a financial trade off in choosing not to work. They are happy to live within the constraints of the unemployment benefit. These job seekers may already possess material items such as a house and/or car and do not feel the need to work, or they may not want those possessions. Quality of life for them is about freedom and having the time to spend with their families.

Withdrawn job seekers are not motivated to look for work and believe that they are unable to work. In effect these job seekers have withdrawn themselves from the job market. Withdrawn job seekers often have medical or psychological conditions that they feel makes it impossible for them to work. They no longer believe it is an option for them. Withdrawns believe they will never work again, they feel they are wasting the government's money on job search assistance, or their own time looking for work.

The evolution of the Job Services Australia system

Jobs Australia

Contents

1 Executive summary

Employment Service Providers were found to spend 50% of their time with any one job seeker time on Job Service Australia (JSA) administration and compliance. It was identified that close to 30% of this administration time (or 15% of overall time) is spent on unnecessary administration and duplicated effort with Centrelink. The 2012 JSA evolution is an opportunity to re-orientate this administrative effort to focus more on a job-seeker experience that builds an enduring employment outcome, and adopts a more contemporary risk-based approach to compliance and administration. This re-orientation has at least a $130m efficiency and effectiveness gain and could secure an estimated 46,700 additional jobs through the system.

In June 2010, The Nous Group was engaged by Jobs Australia to advise on how best to reduce 'red tape' in the JSA system. The government and the Department of Education, Employment and Workplace Relations (DEEWR) are potentially receptive to suggested improvements, particularly if they are funded from savings achieved from simplification or streamlining of existing processes and systems. To gather the evidence and provide insight, Nous and Jobs Australia combined consultations, data analysis and public policy insight. Program logic workshops were held with the CEOs and employment consultants of employment service providers (ESPs), DEEWR contract managers and Centrelink frontline staff. Briefings were held with senior representatives from DEEWR, Department of Finance and Deregulation (DFD) and Department of Prime Minster and Cabinet (DPMC). Nous also immersed itself onsite with an ESP and went through the employment process and the employment software system (ESS) first-hand.

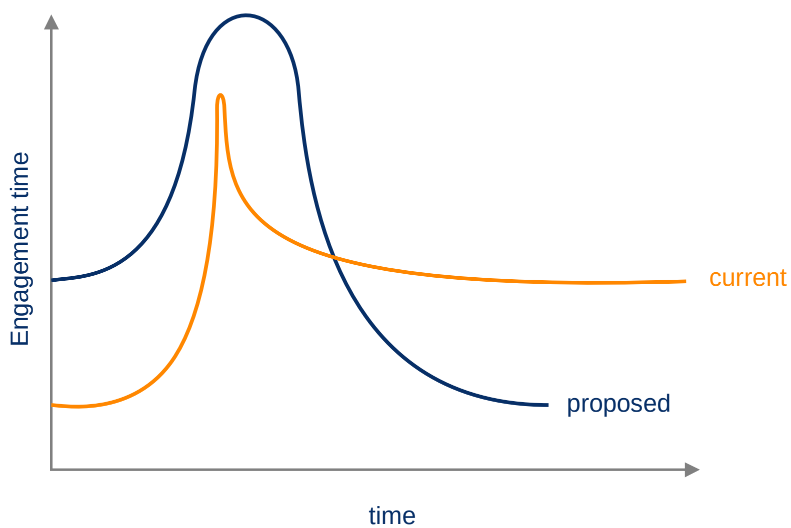
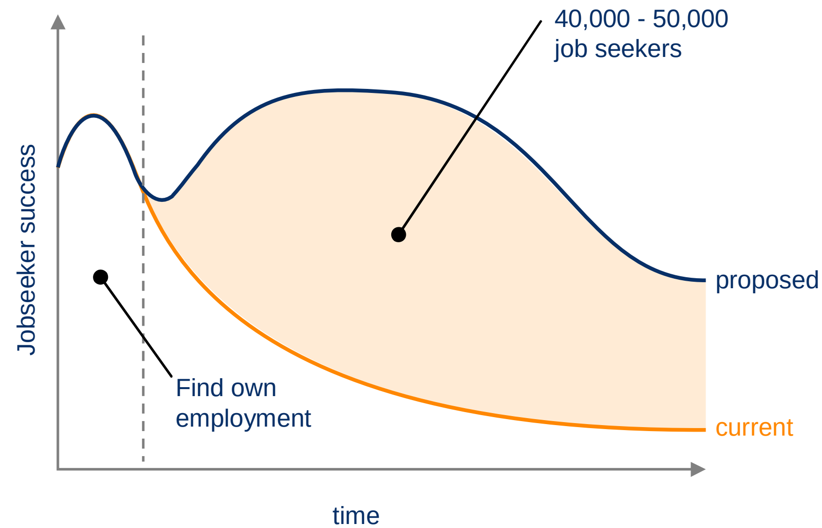
The JSA system uses a compliance approach, based on extensive manuals that outline detailed requirements and procedures. This approach may reduce government risk, but under-invests over $130m annually in ESPs (plus additional costs with DEEWR and Centrelink), and diminishes overall employment outcomes. Many of the issues with the current system derive from the foundations laid by the former Job Network system.

Nous found and validated with stakeholders that ESPs spend 10% of overall process time on unnecessary administration and duplication of effort with Centrelink.
• It is thought that approximately 15% of 'job-ready' jobseekers (i.e. 37,500 people) become long-term unemployed. • Many job seekers are confused with the JSA process and most complaints with the JSA are associated with those initially assessed as 'job-ready' job seekers. • Employment consultants noted that they spend 50% of their time with any one job seeker (or 1 ¼ days) on administrating and complying with over 3,000 pages of JSA requirements. • Centrelink highlighted that they have 96% accuracy from the Job Seeker Classification Instrument (JSCI) by phone or face-to-face. Nonetheless, many ESPs duplicate the 10 minute JSCI classification process to verify its validity because they do not trust the Centrelink process. • Centrelink acknowledged that most of the 30,000 calls they receive per month from ESPs are requesting JSA rule and compliance explanations. These calls should be directed to DEEWR. • DEEWR and ESPs both highlighted that they have staff tied up with the administration associated with the 144 outcome fee types and associated special claims.

Table 1: Key findings

A more cost effective JSA requires more than addressing unnecessary administration and duplication. It requires more upfront engagement with a job seeker based upon their individual circumstance and behavioural style. All front-line staff from ESPs, DEEWR and Centrelink said that this will help to ensure a more trust-based relationship, and more enduring employment and social outcomes.

The following charts provide a conceptual illustration of how the JSA might shift its engagement emphasis to result in better employment outcomes.

Remove unnecessary compliance and administration to invest in a trust-based relationship with the job seeker and employment consultant	**A more engaged job seeker will result in a more substantial and enduring employment and social outcome from the JSA system[1]**
 **Figure 1: Engagement with job seekers**	 **Figure 2: Social and employment outcomes**

[1] It costs about $2,780 to achieve an employment outcome for a job seeker. $130m in unnecessary administration divided by $2,780 per job seeker equals 46,700 addition potential job seeker outcomes.

2 Background

Nous was engaged by Jobs Australia to advise on how best to reduce 'red tape' in the Job Services Australia (JSA) system. The current contracts for the JSA conclude in 2012. Processes to renew these contracts will begin later in 2010. The government and DEEWR are potentially receptive to suggested improvements, particularly if they are funded from savings achieved from simplification or streamlining of existing systems.

1. *The brief* - Jobs Australia wanted to assess the impact of the JSA payment and reporting structure on employment service providers, and to provide recommendations to DEEWR to reduce the cost burden on ESP providers and government.
2. *The process* – Nous, in conjunction with Jobs Australia, used workshops and immersion and value stream techniques to assess the efficiency of the JSA system and to develop recommendations consistent with the policy objectives of the JSA.

2.1 The brief

Jobs Australia wanted to assess the impact of the JSA payment and reporting structure on employment service providers, and to provide recommendations to DEEWR to reduce the cost burden on providers and government.

On 1 July 2009, following the completion of the previous Job Network contracts, the Commonwealth Government introduced the Job Services Australia (JSA) system to employment services. Numerous not-for-profit service providers successfully tendered to provide services under this new framework and are currently assisting job seekers (particularly those with major barriers to employment).

Under the JSA system, employment service providers (ESPs) receive payments for outcomes and services. The large number of payment types and the frequency of these transactions have led ESPs to inform Jobs Australia that the JSA system has a large reporting and monitoring burden. ESPs have noted that the JSA structure is quite prescriptive, and doesn't allow adequate flexibility to respond to the needs of individual job-seekers. At the same time, DEEWR needs to ensure that the JSA system meets its original objectives, particularly to assist those who face the greatest barriers to finding employment.

The current contracts for the JSA system conclude in 2012. Processes to renew these contracts will begin later in 2010. The government and DEEWR have commented to Jobs Australia that they are potentially receptive to suggested improvements, particularly if they are funded from savings achieved from simplification or streamlining of existing systems.

Further background to the establishment of the JSA is provided in *Appendix A*.

2.2 The process

Nous, in conjunction with Jobs Australia, used workshops and immersion and value stream techniques to assess the efficiency of the JSA system and to develop recommendations consistent with the policy objectives for the JSA.

Nous adopted the following approach:

1. **Document review:** Nous reviewed existing documentation to understand the job seeker experience, the context of the JSA system and its current processes. Nous and Jobs Australia also received direct submissions from ESPs about the efficiency of the JSA.
2. **Workshop series**: Nous conducted a series of ½ day and full day value stream workshops with the CEOs and employment consultants of ESPs, DEEWR contract managers and Centrelink frontline staff. The value stream approach was taken from the job seeker perspective.
3. **Briefing with Commonwealth departments**: Nous and Jobs Australia held briefings with senior representatives from the Department of Education, Employment and Workplace Relations (DEEWR), Department of Finance and Deregulation (DFD) and Department of Prime Minster and Cabinet (DPMC).
4. **ESP immersion**: Nous immersed itself on site with a JSA provider, went through the employment process first-hand, and stepped through the EPP computer system.

Appendix C provides more detail on the service design approach adopted by Nous.

Key questions were used to '*value stream*' the JSA payment and reporting structure on ESPs and job seekers:
1. Assess the policy context upon which the JSA has been built: • What were the policy drivers? • How effectively have these policies been met? 2. Assess the JSA business process that driver the JSA service system: • What are the key processes? • How effective are those processes and incentives in the delivery of JSA policy objectives? • How efficient are the processes in the delivery of the JSA service system? 3. Explore the options available to reform the JSA system and remove red tape of government and service providers: • What could JSA be in the future and how will it be different to now? • What are the risks we need to be most mindful of? • What should citizens and government expect and experience? • What incentive structure for service providers could deliver the best outcome? • Where should there be system flexibility and/or rigidity? • Where could resources be best invested in the process – balance of investment? • Over what timeframe should they be identifiable?

Table 2: Key project questions

3 Job seekers

High participation rates in Australia mean that most job-ready, short-term job seekers readily locate employment. Increasingly, JSA job seekers are long-term, have significant barriers to employment, marginal attachment to the job market and require more intensive assistance and support. It is thought, however, that approximately 15% of those initially assessed as being 'job-ready' job seekers (i.e. 37,500 people) become long-term unemployed.

1. *JSA job seeker characteristics* – Job seekers can be broadly characterised into short-term (up to 12 months) and long-term (greater than 12 months). High participation rates in Australia mean that most job-ready, short-term job seekers readily locate employment. Increasingly, JSA job seekers are long term, have significant barriers to employment, marginal attachment to the job market and require more intensive assistance and support.

2. *Experience with JSA* - Many job seekers are confused with the JSA process, and with the roles and responsibilities of Centrelink and ESPs. Short-term job seekers are generally more critical of their JSA experience. They do not, however, necessarily understand how the system works and what their obligations are. They are also concerned about becoming long-term job seekers which is evidenced by the 15% of 'job-ready' job seekers (i.e. 37,500 people) who become long-term unemployed. The long-term job seeker experience is more complex due to their often complicated circumstances.

3.1 JSA job seeker characteristics

Job seekers can be broadly characterised into short-term (up to 12 months) and long-term (greater than 12 months). High participation rates in Australia mean that most job-ready, short-term job seekers readily locate employment. Increasingly, JSA job seekers are long-term, have significant barriers to employment and have marginal attachment to the job market.

Short-term job seekers are job ready, have high expectations about employment, but often lack awareness about the JSA system.	Long-term job seekers have limited employment skills, low engagement and significant personal barriers.
• **Job ready:** usually have recent skills and experience, no obvious barriers to employment and find own employment. Often have been made redundant. • **High expectations:** expect higher wages and conditions and less reluctant to take transitional jobs (they want full time). Fearful of long-term unemployment. They want a higher quality service • **Lack of awareness about the system**: find it difficult to navigate. They are compliant but resent the compliance regime.	• **Limited skills:** limited or no recent work history, skills (including job search skills) and formal education (or overseas qualifications aren't recognised). Often have low level English. • **Low engagement:** issues with engagement and attendance. Often have low motivation, self esteem and confidence (often compounded by their unemployment). • **Significant barriers:** often have health problems (possibly undiagnosed), homelessness, substance and financial issues. Many are refugees, Indigenous or have a criminal history.

Table 3: Job seeker characteristics

3.2 Experience with JSA

Many job seekers are confused with the JSA process, and with the roles and responsibilities of Centrelink and ESPs. Short-term job seekers are generally more critical of their JSA experience. They do not, however, necessarily understand how the system works and what their obligations are. They are also concerned about becoming long-term job seekers which is evidenced by the 15% of 'job-ready' job seekers (i.e. 37,500 people) who become long-term unemployed. The long-term job seeker experience is more complex due to their often complicated circumstances.

Short-term job seekers report that the system is confusing and fails to meet their immediate needs	Long-term job seekers can 'fall through the cracks' of the system and some cycle in and out of the system.
• **Confused about the system** and disillusioned by failure to meet promises and the limited assistance provided • **Struggle with coping** and their immediate life challenges (e.g. mortgage) • **Less receptive to ideas**, options and advice and may not see a need for assistance (e.g. resume advice, referrals, etc) • **Find the service impersonal and bureaucratic** • **15% of 'job-ready' job seekers (i.e. 37,500 people) become long-term unemployed** based on the feedback of DEEWR and ESPs.	• **Confused by and don't understand the system** partly due to changes in JSA/Centrelink, lack of user-friendliness and constant changes to provider and consultants • **Find the system impersonal** due to the significant amount of data entry and paperwork • **Have low expectations and goals.** Many have been through the system several times without an outcome. Others have become accustomed to not working and prefer to stay in their comfort zone and avoid any participatory activity or training. • **May enter a downward spiral** becoming increasingly depressed and despondent, and losing more confidence, motivation and skills as a result of being long-term unemployed. May get left behind in the job market.

Table 4: Job seeker experience with JSA

Note: The Centrelink workshops noted a better upfront experience by most job seekers compared to the ESP workshops. It was thought by ESPs that this maybe due to higher initial motivation of job seekers and expectation setting by Centrelink before job seekers move to ESPs.

4 JSA administration

The JSA system uses a compliance approach, based on extensive manuals that outline detailed requirements and procedures. Nous found, and validated with stakeholders, that ESPs spend close to 15% of their overall process time on unnecessary administration and duplicated effort with Centrelink. This approach by ESPs may reduce government risk, but under-invests over $130m annually (plus additional costs with DEEWR and Centrelink).

1. *The value stream* - ESPs were found to spend up to 50% of their process time on administration and compliance with the JSA system requirements. The workshop and consultation process identified that close to 30% of this administration time (or 15% of overall time) is spent on unnecessary administration and duplicated effort with Centrelink.
2. *The issues* - The JSA compliance approach may reduce risk to government and provide strong accountability, but it appears also to have led to some unnecessary administrative efforts by ESPs. Even though DEEWR has built some flexibility into the JSA, ESPs are increasingly employing staff with process management rather than job seeker engagement skills to ensure compliance. The cost of unnecessary administration is about $130m per year
3. *Change management* – Limited investment in system-wide cultural change has led to unnecessary administration. DEEWR, Centrelink and ESPs were all conditioned to the former Job Network approach. Under the JSA, ESPs have expected DEEWR to operate as they did under the Job Network system, which is in an audit-like manner. On the other hand, DEEWR has changed its leadership arrangements and is more open to new working methods. Many employment consultants continue to default back to former Job Network rules for fear of non-compliance.

4.1 The value stream

ESPs were found to spend up to 50% of their process time on administration and compliance with the JSA system requirements. The workshop and consultation process identified that close to 30% of this administration time (or 15% of overall time) is spent on unnecessary administration and duplicated effort with Centrelink.

	JOB SEEKER PROCESS						
	1. Registration	**2. Classification**	**3. Preparation**	**4. Skill development**	**5. Job Readiness**	**6. Outcome**	**TOTAL**
Short-term job seeker							
Annual number of jobseekers	*250,000*	*250,000*	*200,000*	*125,000*	*100,000*	*75,000*	*75,000*
	100%	*100%*	*80%*	*50%*	*40%*	*30%*	*30%*
JSA Tasks (minutes)							
Call centre conversation	30						
JSCI classification & JSA referral		30					Employment success
Employment Pathway Plan	Total upfront time		30		Highest lost time		
Skill development logistics				480			
CV and interview technique					45		
Administration	0	0	45	480	60	30	
TOTAL time	**30**	**30**	**75**	**960**	**105**	**30**	**1,230**
Inefficiency (minutes)	**0**	**10**	**20**	**120**	**15**	**10**	**175**
Long-term job seeker							
Annual number of jobseekers	*550,000*	*550,000*	*440,000*	*330,000*	*220,000*	*82,500*	*82,500*
	100%	*100%*	*80%*	*60%*	*40%*	*15%*	*15%*
JSA Tasks (minutes)							
Call centre conversation	30						
JSCI classification & JSA referral		90					Employment success
Employment Pathway Plan	Total upfront time		60		Highest lost time		
Skill development logistics				960			
CV and interview technique					60		
Administration	0	0	60	960	60	30	
TOTAL time per jobseeker	**30**	**90**	**120**	**1920**	**120**	**30**	**2,310**
Inefficiency (minutes)	**0**	**10**	**40**	**240**	**15**	**10**	**315**
Cost of inefficiency ($)							
Short-term job seekers	*$ -*	*$ 2,500,000*	*$ 4,000,000*	*$ 15,000,000*	*$ 1,500,000*	*$ 750,000*	**$ 23,750,000**
Long-term job seekers	*$ -*	*$ 5,500,000*	*$ 17,600,000*	*$ 79,200,000*	*$ 3,300,000*	*$ 825,000*	**$ 106,425,000**
TOTAL cost	**$ -**	**$ 8,000,000**	**$ 21,600,000**	**$ 94,200,000**	**$ 4,800,000**	**$ 1,575,000**	**$ 130,175,000**

Figure 3: JSA value stream

4.2 The issues

4.2.1 The Centrelink and ESP relationship

Unintentionally, the current relationship between Centrelink and job seekers sets up a less successful job seeker experience. It creates barriers between Centrelink and ESPs and results in a number of ESPs duplicating Centrelink processes. Duplication of the JSCI by ESPs costs about $8.0m per year.

Centrelink is the starting point for a JSA job seeker. Its responsibility is to register and to classify job seekers through the JSCI. While Centrelink's records indicate that they have 96% JSCI accuracy by phone or face-to-face, ESPs believe that up to 50% of Centrelink's JSCI classifications require re-classification. This lack of trust in Centrelink processes on the part of some ESPs leads them to duplicate the 10 minute JSCI classification process to verify its validity. The basis for this duplication is as follows:

- *No handover* – There seems to be little formal handover between Centrelink and an ESP. Job seekers have to find their own ESP. Process demands mean that Centrelink's process may also inhibit the assurance process (that all possible and relevant information has been accurately captured at the right point in the process)
- *Inconsistent terminology* – Centrelink and ESPs use different terminology when talking to job seekers, which creates confusion e.g. customer v. job seeker
- *Lack of engagement with Stream 1s* – Centrelink negotiate the EPP for Stream 1 job seekers. JSA incentives mean that there is little contact between Steam 1s and Centrelink or ESPs for the first three months. ESPs note a general disenchantment by the Stream 1 job seeker with the JSA, which may be a cause for 15% of Stream 1 job seekers becoming long-term job seekers.

A further complication for job seekers is that they need to maintain a dual relationship with Centrelink and ESPs for the duration of the job seeking journey. Issues with this include:

- *Story repetition* – Job seekers often have to repeat their story between Centrelink and ESP and within Centrelink each fortnight, particularly in regard to the job search
- *Role clarity* – Centrelink receives about 30,000 contacts per month from ESPs. Most of the calls are asking Centrelink for JSA rule and compliance explanations. These calls should be directed to DEEWR.

Job seekers who fail their participation requirements add a further complication. Centrelink is required to investigate these incidents. The core of this compliance activity concerns about 10% of the job seeker population (about 80,000 job seekers) who are repeat offenders of compliance provisions. Issues with this include:

- *Holding personal information* - A lot of personal information is captured in the Centrelink assessment branch but is not shared with ESPs. This information could be influential in unlocking employment barriers
- *Low Centrelink influence* - In upfront assessments Centrelink staff have limited ability to identify someone as not having the appropriate referral (i.e. language, literacy, apprenticeships). It's more dependent on the ESP.
- *Complex and duplicated assessments* - There is a lot of complexity and duplication in assessments within Centrelink and between Centrelink and ESPs. If a comprehensive assessment reveals a job seeker is in the wrong stream then they need to have a new assessment.
- *Black holes* – Job seekers are sometimes stuck between programs upon their first referral, such as school-leavers who qualify for apprenticeship programs.

Based on the duplication of the JSCI alone, it is estimated that annual costs of about $8.0m are incurred.

4.2.2 EPP documentation

ESPs believe that the documentation requirements of the Employment Pathway Plan (EPP) in the Employment Software System (ESS) have been 'over-built'. There are too many compulsory fields, drop-down activity types and system navigation choices. While the EPP provides rich data for DEEWR analysis, the depth of its functionality creates barriers between the employment consultant and the job seeker. Detailed EPP documentation costs about $21.6m per year.

Mutual obligation and clear documentation of a job seeker's pathway to employment are important. However, ESPs believe the ESS has been over-built and has too many perceived compulsory fields and drop down activity types. Examples of unnecessary EPP requirements include:

- *Too many EPP guidelines* – There are 4-ring binders of EPP guidance information used to fully inform an EPP draft. Employment consultants find that they focus on compliance completion rather than job seekers' requirements. In all, there are over 3,000 pages of JSA rules.
- *Too many activity types* – The selection from over 200 different activity types requires complex judgements by employment consultants. Finding the right activity is time consuming.
- *Hard to use ESS resume function* – Some employment consultants find the resume function difficult to use and time consuming to complete. Some ESPs have developed their own, more user friendly resume systems.
- *Additional staff to follow-up compliance documentation* - The complexity of the EPP has meant that most ESPs have hired additional staff to follow-up and ensure compliance obligations have been met.

ESPs believe that up to 50% of the ESS compliance obligations to establish a job seeker employment pathway plan (EPP) are unnecessary. They believe that the ESS data entry to set up an effective EPP should take no longer than 10 minutes.

Based on the EPP administrative complexity, it is estimated that about $21.6m of costs per year are incurred.

The EPP documentation consists of seven tabs, which must all be tailored to the individual. The EPP must be updated whenever there is a change in circumstance, printed and multiple copies signed.

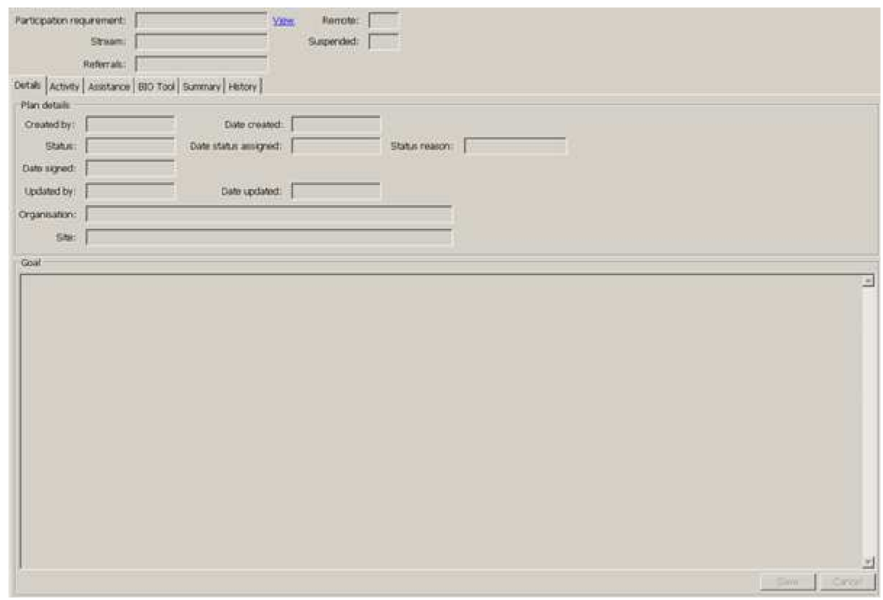


Figure 4 - The EPP screen

4.2.3 ESS duplication

ESS system design and compliance obligations mean that the 'skill development' activity is duplicated. Duplication, data requirements and the extended list of activity types make tracking job seeker activity risky for ESPs. They believe that if they make mistakes they may (i) be non-compliant, and (ii) not receive a payment. ESS duplication costs about $94.2m per year.

Monitoring and tracking job seeker skill development is an important function of the JSA. JSA system design and compliance obligations mean that skill development activity is duplicated throughout the ESS system. Examples of unnecessary administration include:

- *Training types* – Employment consultants find it time consuming to search through the 50 or so skill development training types in the ESS to find the most appropriate training activity type.
- *Duplicate data entry* – Employment consultants have to enter data into multiple screens in the ESS (e.g. the EPP and the skills diary) to record and process activity placements.
- *Work experience* - Employment consultants need to undertake a separate Work Experience (WEX) Phase activity per job seeker for each new education/training course. There are 10's of work experience activity types to choose from, and the guidelines are detailed and difficult to interpret.
- *Overlaps* - There is overlap between the Work-for-the-Dole (WFD) projects and police checks. ESPs spend considerable time preparing applications, risk assessments and gathering required documentation to create these similar activities.

ESPs believe that up to 50% of time associated with job seeker skills development administration is either overly complicated or duplicated in the ESS. Efficient JSA workflows and ESS data entry could reduce skill development administration by up to 10 minutes for every job seeker interaction.

Based on this administrative complexity, it is estimated that about $94.2m of costs per year are incurred.

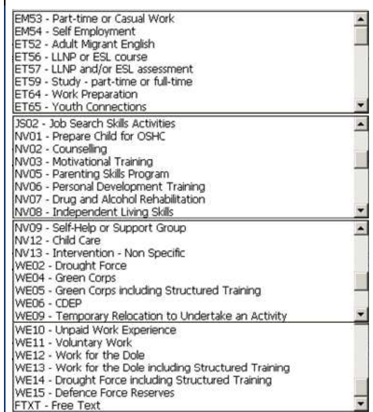
The system includes over 50 different activity types broken into numerous categories.	Activities must also be entered into the activity management screens, which require further detail.
	

Figure 5 - Examples of administration from the ESS

4.2.4 Placement arrangements

JSA has established complex job seeker placement arrangements that are difficult to interpret. ESP feedback and Nous' review of documentation support this. ESPs have also noted that this sets up disincentives for 'assisted' placements. Placement arrangement compliance and complexity costs about $4.8m per year.

Effective placement is crucial to the future employment prospects of a job seeker. JSA placement arrangements are difficult to interpret, set up disincentives for 'assisted' placements and are challenging to comply with. Examples of unnecessary administration include:

- *Special claims processing* – ESPs spend considerable time chasing up payslips for evidence to support special claims, entering this into the ESS and updating ESS in multiple screens.
- *Documentation* - Manually collecting employment documentation is very time consuming. Some employers have little understanding of the documentary evidence ESPs require. This is also true for the evidentiary requirements for educational outcomes from TAFEs.
- *Service fee claims* – The process for service fee claims is very cumbersome. It is done by job seeker, by site, and by stream. This drives a very high administrative load on ESPs and DEEWR contract managers.
- *Placement rules* – Claim processing and placement rules are tightly bound in some areas limiting job seeker placement opportunities, e.g. part-time or casual work and job placement for early school leavers.

ESPs believe that up to 75% of time associated with placement administration is either overly complicated or duplicated in the ESS. Efficient JSA workflows and further automation could reduce placement administration by up to 45 minutes for every job seeker.

Based on this administrative complexity, it is estimated that about $4.8m of costs per year are incurred.

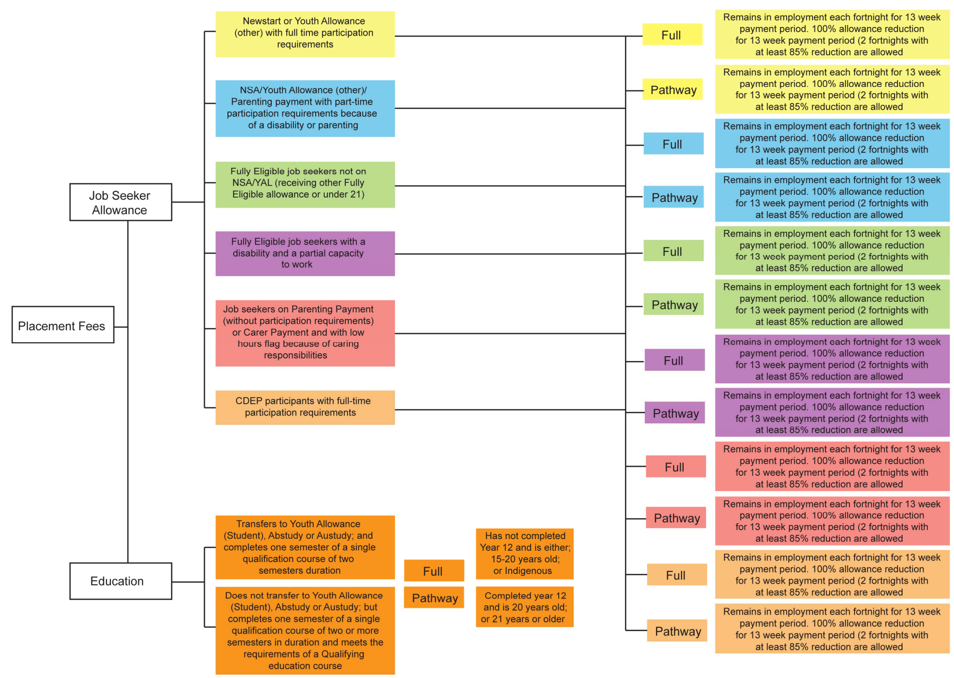


Figure 6: Placement fees

4.2.5 Outcome fees

JSA has 144 outcome fee types. This is due to the permutations and combinations of Full and Pathway outcomes, provider assisted and provider brokered outcomes, and 0-12 month, 13-60 month and greater than 61 month unemployed clients. The decision making process for ESPs to determine the correct outcome fee is complex and time consuming. The administration of the outcome fee complexity costs $1.575m per year.

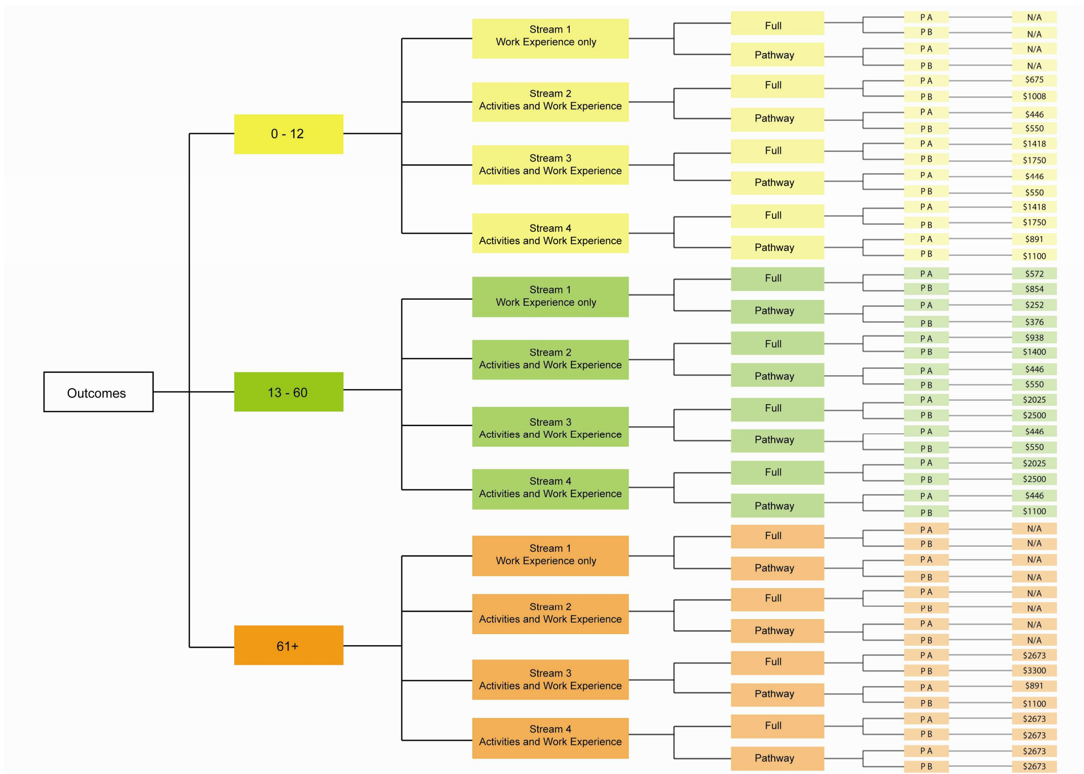


Figure 7: Outcome fees

4.3 Change management

Limited investment in system-wide cultural change has led to unnecessary administration. DEEWR, Centrelink and ESPs were all conditioned to the former Job Network approach. Under the JSA, ESPs have expected DEEWR to operate as they did under the Job Network system, which is in an audit-like manner. On the other hand, DEEWR has changed its leadership arrangements and is more open to new working methods. Many employment consultants continue to default back to former Job Network rules for fear of non-compliance.

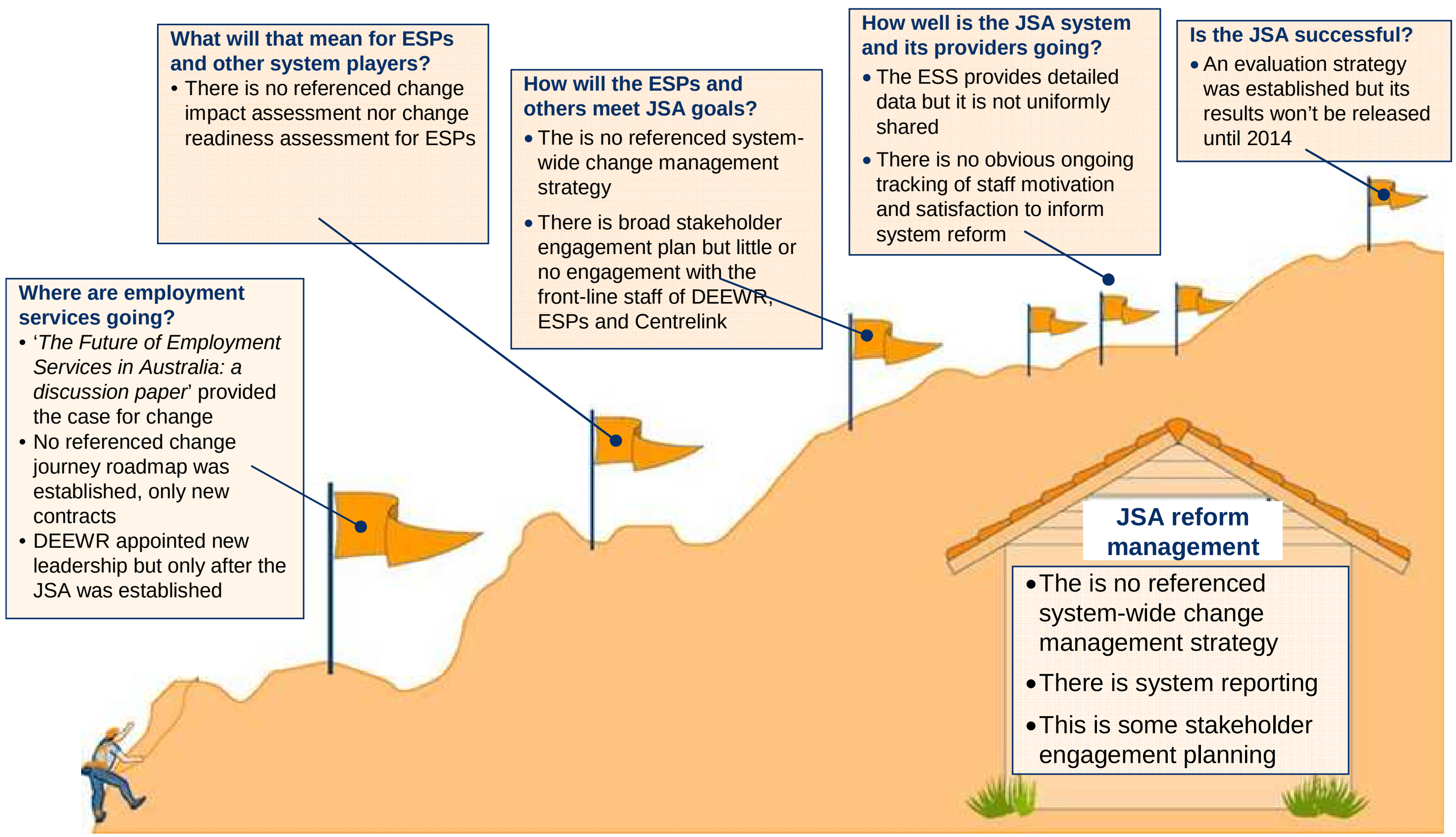


Figure 8: JSA change mountain

5 Recommendations

JSA has an opportunity to re-orientate this administrative effort to focus more on a job-seeker experience that builds an enduring employment outcome and adopts a contemporary risk-based approach to compliance and administration. This re-orientation has the possibility of securing an estimated 46,700 additional jobs through the system. It was generally agreed that addressing the problems with the JSA system is not simply a matter of fixing unnecessary administration to improve individual job seeker throughput time.

1. *Cost effectiveness* – A more cost effective JSA requires more than addressing unnecessary administration and duplicated effort. It requires more upfront engagement with a job seeker based upon their individual circumstance and behavioural style. All front-line staff from ESPs, DEEWR and Centrelink said that this will help to ensure a more trust-based relationship, and more enduring employment and social outcomes.

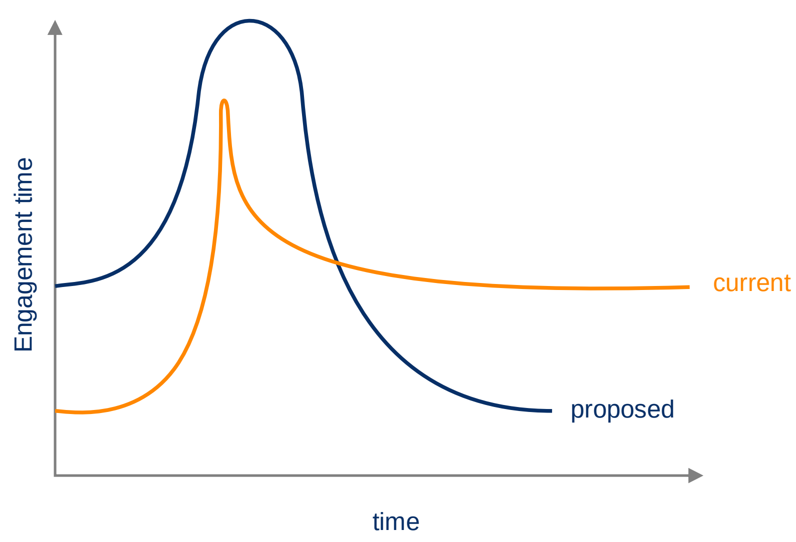
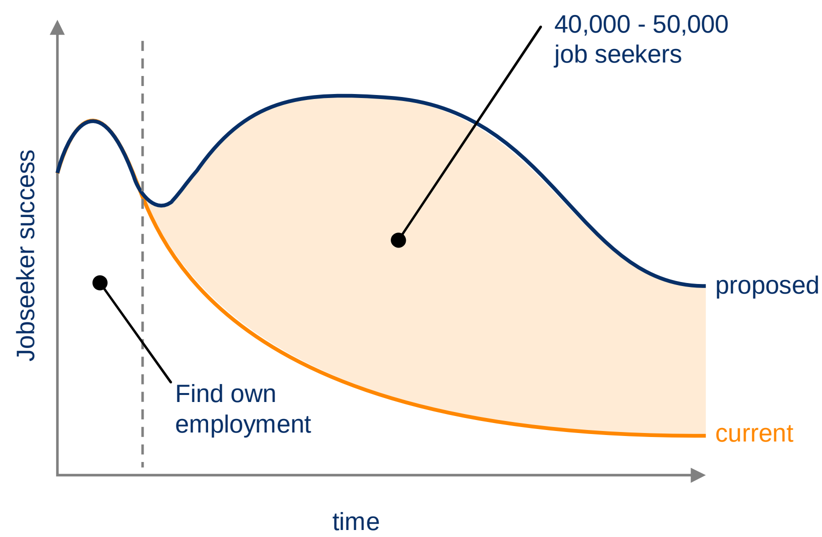
2. *Improvement opportunities* – A job seeker focused employment system should still retain the six-step approach, but its emphasis will shift. A more skilled employment consultant will better help the job seeker navigate through to employment. System facilitation and focus on a more risk-based compliance approach by government will allow a more effective ESP market to operate. Acknowledgement by Centrelink about its dual role with job seekers, and a smooth handover to employment service providers, will improve set up of the job seeker experience. Better equipped employers will ensure more enduring employment outcomes for disadvantaged jobseekers.

3. *Risks* – DEEWR should consider a more risk-based approach to process compliance to provide those better performing providers greater flexibility and room for innovation. There is also an opportunity to clarify responsibility for legislative and contractual compliance. Government's risk appetite will determine the level of risk acceptable within the JSA system.

4. *Transition arrangements* - DEEWR should consider the investment required to manage and support the cultural shift necessary for all stakeholders in the 2012 evolution of the JSA system. It has been assumed that the existing funding envelope will be retained.

5.1 Cost effectiveness

A more cost effective JSA requires more than addressing unnecessary administration and duplicated effort. It requires more upfront engagement with a job seeker based upon their individual circumstance and behavioural style. All front-line staff from ESPs, DEEWR and Centrelink said that this will help to ensure a more trust-based relationship and more enduring employment and social outcomes.

Remove unnecessary compliance and administration to invest in a trusted relationship with the job seeker and employment consultant	A more engaged job seeker will result in a far more substantial and enduring employment and social outcome from the JSA system[2]
 **Figure 9: Engagement with job seekers**	 **Figure 10: Social and employment outcomes**

[2] It costs about $2,780 to achieve an employment outcome for a job seeker. $130m in unnecessary administration divided by $2,780 per job seeker equals 46,700 addition potential job seeker outcomes.

5.2 Improvement opportunities

A job seeker focused employment system should still retain the six-step approach, but its emphasis will shift. A more skilled employment consultant will better help the job seeker navigate through to employment. System facilitation and focus on a more risk-based compliance approach by government will allow a more effective ESP market to operate. Acknowledgement by Centrelink about its dual role with job seekers, and a smooth handover to employment service providers, will improve set up of the job seeker experience. Better equipped employers will ensure more enduring employment outcomes for disadvantaged jobseekers.

A better job seeker experience – more empowered, richer conversation – to increase Australian participation rate

An engaged employer – more knowledgeable, better equipped – to ensure an enduring employment relationship

DEEWR to maintain tight control		DEEWR to provide employment providers with more flexibility			DEEWR simplify but maintain tight control
1. Registration	**2. Classification**	**3. Plan**	**4. Skill Development**	**5. Job readiness**	**6. Outcome (incl. ongoing support)**

1. Registration / 2. Classification

Acknowledge Centrelink's dual role with jobseekers (i.e. employment entry point and social service payer) and provide a smooth handover to employment service providers. Recommended actions include:

- Enhance the existing registration and classification system to better identify the 15% of short-term job seekers that become long-term jobseekers
- Ensure a formal individual handover of jobseeker between Centrelink and ESPs
- Provide an information session for all jobseekers
- Establish common terminology between Centrelink and ESPs

3. Plan / 4. Skill Development / 5. Job readiness

Develop a trusted relationship between skilled employment consultants and jobseeker to help jobseeker navigate swiftly through to employment. Recommended actions include:

- Set up principles for employment pathway plans and skill development rather than prescribe templates
- Allow 4 & 5-star ESPs to innovate and focus compliance more on 1 and 2 star providers
- Ensure Employment consultant have standard qualifications that recognises both employment and social development skills
- Incentivise ESPs to support ALL jobseekers to ensure short-term job seekers don't become long jobseekers
- Stripe down the ESS interface to improve usability/throughput for the employment consultants
- Build interfaces between ESS and Centrelink to ensure information transparency

6. Outcome (incl. ongoing support)

Better engage and skill employer to handle jobseekers from disadvantaged backgrounds. Recommended actions include:

- Provide intensive on-site employment support with wrap-around services for socially disadvantaged job seekers
- Ongoing employer assistance to solve problems, including finding ways to accommodate individual employment restrictions in particular work settings
- Simplify outcome payments and remove brokered outcomes
- Balance social and employment outcomes
- Back-load outcome payments to optimise employment outcomes

DEEWR to facilitate system connections and focus on a risk-based approach to performance management and compliance

Figure 11: JSA improvement opportunities

5.3 Risks

DEEWR should consider a more risk-based approach to process compliance to provide those better performing providers greater flexibility and room for innovation. There is also an opportunity to clarify responsibility for legislative and contractual compliance. Government's risk appetite will determine the level of risk acceptable within the JSA system.

A more carefully calibrated compliance regime should not lead to new risks emerging. Major risks such as probity, accountability, transparency and due process are inherent within the job services system and could manifest similarly regardless of system streamlining and lowered compliance. However, a less constrained system could increase the likelihood of some risks.

Government's risk appetite will determine the ultimate level of legislative, contractual and process compliance. The current system is designed to minimise risk to government and to transfer risk to employment service providers. Stakeholders have said that this level of compliance is constraining and that restrictions could be relaxed within a reasonable risk envelope. As the roll-out continues, monitoring and engagement should be used to review the impact of the current compliance regime and shift this as necessary.

A number of mitigation approaches can minimise risk in the proposed model
• Conduct a progressive roll-out, with best-performing providers adopting the reforms first • Maintain tight compliance for critical processes, i.e. the handover process between Centrelink and ESPs, and the outcome fee regime • Revise the funding regime to backload system incentive to ensure a 'trusted' relationship with job seekers and a longer, more enduring employment outcome • Knowledge share and build the capability/skill sets of employment consultants • Closely monitor the emerging system and actively pursue feedback from job seekers and employers • Work with Centrelink's Business Integrity function (who are driving a risk-based approach to compliance through Centrelink and the human service portfolio) to implement a similar approach for the JSA.

Table 5: Risk mitigation approaches

5.4 Transition

DEEWR should consider the investment required to manage and support the cultural shift necessary for all stakeholders in the 2012 evolution of the JSA system. It has been assumed that the existing funding envelope will be retained.

Transition steps	Transition principles
Nous recommends the following key steps for the transition to the 2012 JSA model: 1. **Implement 'quick win' improvements**: a number of the recommendations provided can be easily implemented within the current JSA system at little cost (such as reducing some of the data duplication) 2. **Revise the service delivery and compliance model:** these should be embedded within the new jobs services system to be contracted in 2012 3. **Conduct a rigorous risk assessment:** review the new service delivery and compliance models to identify major sources of risk and develop an appropriate risk mitigation strategy. Ensure the final model is within DEEWR's risk appetite. 4. **Phased roll-out of the new model:** to reduce risk and learn from first adopters, most likely start with the 5-star providers 5. **Monitor and review:** to refine the service in line with user experiences and provider feedback, and to ensure additional employment outcomes are achieved.	To ensure effective implementation, the following principles should underlie transition arrangements: • **Consultative model:** the emerging service delivery model should be developed through close consultation and engagement with job seekers. User experiences and feedback should be used to shape the system. • **Knowledge sharing:** information sharing will allow providers to build capability and adopt best practice. Knowledge sharing should be actively encouraged, particularly from 5-star providers. • **Differentiated compliance:** higher risk providers should be more closely monitored. A range of differing reporting regimes should be utilised based on provider risk. • **Progressive roll-out:** lower risk providers should be first to adopt the new compliance framework. These providers would provide insights for later. • **Feedback loops:** closely monitor the emerging system to review and refine the model as it is implemented.

Table 6: Transition steps and principles

Appendix A JSA background

A.1 Public policy

The design of the JSA system embodies overarching policy objectives in areas such as labour market efficiency, workforce participation/productivity and social inclusion. These reflect Australia's increasing economic and social reliance on engaging with potential job seekers that are more diverse in their characteristics and more marginally attached to the workforce.

- **Increased workforce participation:** necessitated by a policy agenda to increase the pool of potential job seekers and their participation in paid employment to respond to structural ageing of the population. This links to welfare reform and was a key focus of the Henry Tax Review.
- **Labour market efficiency:** by targeting employment assistance to those who need it most, and for whom it can be most cost-effective, recognising that the normal operation of the labour market will involve many only requiring a 'light touch'. A key component is encouraging and addressing barriers to workforce mobility.
- **Developing the skills of the Australian workforce:** increasing Australia's skill-base supports a 'knowledge' economy and assists to address the current endemic skills shortages.
- **Financial management stewardship:** ensuring responsible use of public funds, through cost-effectiveness and probity of service delivery and administration and a focus on outcomes.
- **Social inclusion:** by developing employment assistance arrangements, including facilitating employment opportunities, which are responsive to the characteristics of those with more marginal attachment to the workforce.
- **Job-seeker obligations:** recognising the mutual obligations of job seekers to be active on their own behalf in seeking employment and to support and build their communities through programs such as Work for the Dole.

A.2 Criticisms of the former Job Network system

Introduced by the Commonwealth Government on 1 July 2009, the Job Services Australia (JSA) system replaced the Commonwealth Government's previous employment services, Job Network. This previous system had been in place for more than 10 years. The evolution of the JSA stemmed from criticisms of the former Job Network system.

Criticisms of the former Job Network system
1. *Poorly targeted assistance* - The considerable public investment in employment assistance had not targeted those most in need.
3. *Continuum too rigid* - The time-based servicing continuum was inflexible and required all job seekers to be treated in the same way at the same time.
4. *Lack of incentives for skills and training* - Contract arrangements and incentives skewed employment provider behaviour towards obtaining short-term jobs rather than equipping job seekers with the skills they need to obtain sustainable employment.
5. *Employment services are too complex and fragmented* - There were nine major employment programs, each with its own set of contractual obligations, creating unnecessary administrative complexity.
6. *Insufficient employer focus* - The settings did not encourage or reward providers to focus on labour market shortages or the suitability of the job seeker to a particular role.
7. *Excessive red tape* - The administrative burden and red tape associated with too many contracts and an over-emphasis on processes rather than outcomes reduced the capacity of providers to service job seekers.
8. *Under-utilised Job Seeker Account* - Rules surrounding when and how providers expend funds from the JSKA were complex and too prescriptive. Providers were extremely cautious using the JSKA because of uncertainty about possible recovery action as a result of contract management by DEEWR. The JSKA was consistently under-utilised.
9. *A counter-productive compliance system* - The eight week, non-payment period was designed to encourage participation but it was counterproductive as job seekers had little or no contact with Centrelink or their employment services provider for the eight-week period.
10. *Performance management* - The Star Ratings performance management system was complex and lacked transparency.
11. *The Information Technology system* - DEEWR IT systems (EA3000) was too complex and had poor functionality.

Table 7: Criticisms of the former Job Network system

A.3 Objectives for the JSA

A set of objectives were developed to inform the design of the JSA. These principles revealed a need for change from the Job Network system; to simplify, streamline and improve the services and provide a greater emphasis on skills development and training. The intended result was a new client-centred, integrated approach to employment services with minimal time and money spent on administration.

JSA design objectives[3]
1. Early intervention to minimise the number of long-term welfare-dependent Australians of working age, starting with a review of the Job Seeker Classification Instrument
2. Provide services that are relevant to the circumstances and needs of the job seeker
3. Ensure job seekers who are struggling the most will get the most intensive assistance
4. Provide meaningful incentives for training that will improve the employability of job seekers
5. Ensure job seekers who need training can access training
6. Offer rewards when providers find sustainable jobs for job seekers as fast as possible
7. Ensure there is a performance management and tendering system that properly accounts for quality performance
8. Minimise the amount of time and money spent on administration.

Table 8: JSA design objectives

[3] Jobs Services Australia. *About Jobs Services Australia.* http://www.deewr.gov.au/Employment/JSA/Pages/about.aspx Accessed 11/8/10

A.4 Key components of the JSA system

A key component of the JSA system was a simpler employment service through an integrated employment service. Service integration was intended to free providers from onerous administration and to reduce red tape.

A better pathway to employment	Simpler employment services	Features of the new employment services	Helping employers find skilled workers
• Job seekers will have greater access to training and skills development and other help at a time better suited to their needs. • Job seekers will work with their employment services provider to develop their own Employment Pathway Plan. • To receive help, job seekers will generally still be required to register with Centrelink and have an assessment. • While the new system will change the way employment services are provided, it will not impact on the type of income support job seekers receive.	• An integrated employment service freeing employment services providers from onerous administration and reducing red tape to give employment services providers time to focus on getting job seekers into work. • Job seekers have only one employment services provider who can more effectively work towards matching job seekers with an employer. • New contract and performance management arrangements will strike a balance between ensuring value for money and accountability by employment services providers.	• More resources dedicated to the most disadvantaged job seekers • The development of an Employment Pathway Plan which details the services tailored to help the job seeker secure employment • An Employment Pathway Fund to buy goods and services that an individual needs to address vocational and non-vocational barriers • A stronger focus on ensuring Work Experience • Strengthening the New Enterprise Incentive Scheme with up to 6,300 small and micro business training places available each year • For highly disadvantaged job seekers, measuring progress towards work readiness, as well as employment outcomes for highly disadvantaged job seekers • Employment services providers linking with community organisations and other levels of government to enable job seekers to access a range of assistance • A $41 million innovation fund for projects that address barriers to employment for groups of highly disadvantaged job seekers.	• Reward employment services providers for working with employers to supply work-ready job seekers who can meet local labour market demands. • The performance management framework will incorporate feedback from employers in the quality key performance indicator. • Employment services providers will need to develop strategies to help employers, address their skill and labour needs. • Employers, employer bodies, unions and other organisations will be able to tender to provide employment brokerage services. The $6 million program will see brokers work with employers, training organisations and employment services providers to address skill or labour shortages. • The new services provide opportunities for job seekers to access 253,000 additional training places through the Productivity Places Program

Table 9: Key components of the JSA system

Appendix B Service design

B.1 Service design approach

Modern approaches to public service reform incorporate notions such as co-production and citizen-centric government. These approaches call for a shift in service delivery focus towards service users. The JSA system partially addresses some of these notions, but more work could be done.

Approach	What it means in employment services
Focus on the citizen 'experience' (incorporating elements such as satisfaction and wellbeing) should be central to service design, rather than just KPIs and systems.	• Use touch points with job seekers and their journey as a core input and consideration in service design • Use user intelligence (such as customer research and user feedback) to shape service design • Include customer-focussed measures (such as satisfaction) in program KPIs and evaluation • Learn from insights from front-line staff.
Simplify service delivery through automation, integration, better information sharing and simplified business processes.	• Provide a user-friendly system for job seekers • Reduce administration for job seekers and providers • Service simplification should allow recruiting for empathy, rather than process skills.
Engage citizens in policy and service delivery design and mobilised, coached and encouraged to participate in the 'common enterprise' of generating positive outcomes.	• Engage with job seekers to understand their experiences and needs.
Coordinate service delivery between agencies should be enhanced to provide more integrated policy outcomes and allow citizens with complex needs to access relevant services from a single access point.	• Provide tailored, 'wrap-around' services for job seekers • Integrate delivery between providers, Centrelink and DEEWR.

Table 10: Service design approach

B.2 Service design benefits

A service-user focused approach to service design will yield enduring benefits for government, job seekers, employers and providers.

Stakeholder group	Benefit
Commonwealth Government	✓ responsible fiscal management ✓ adherence to policy objectives ✓ economic benefits from improved workforce engagement and productivity
Job seekers	✓ improved outcomes ✓ empowered to plan and make choices ✓ improved self-determination and independence ✓ easier to navigate the service system
Employers	✓ more skilled staff ✓ better equipped to work with disadvantaged populations ✓ increased work productivity
Employment service providers	✓ less administrative tasks ✓ lowered cost base ✓ ability to better engage with job seekers.

Table 11: Service design benefits

Appendix C Australian employment trends

C.1 Australian labour market

Australian unemployment is at historically low levels. While unemployment increased slightly during the GFC, Australia successfully averted recession and jobs figures remain strong. Increasingly, Australian employers require a more highly-skilled workforce.

Australian unemployment is at historically low levels….	…increasingly, employers require a more highly-skilled workforce.

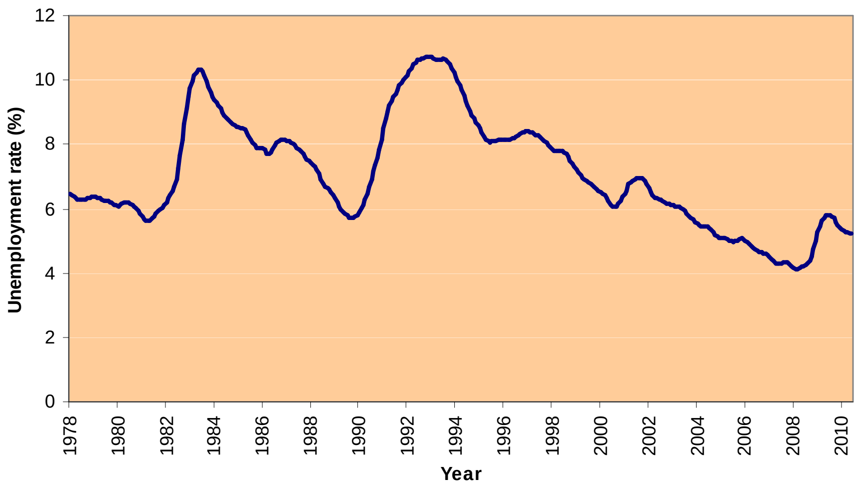


Figure 12 – Australian unemployment rate

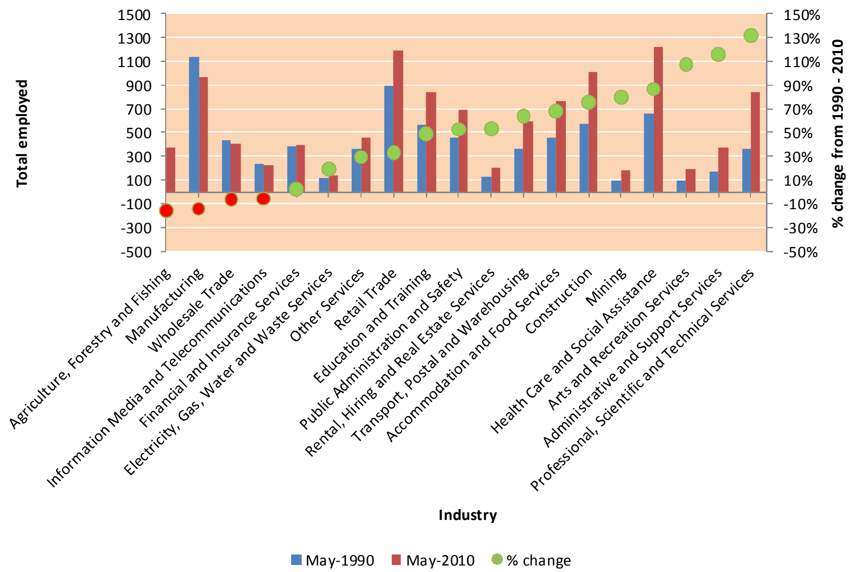
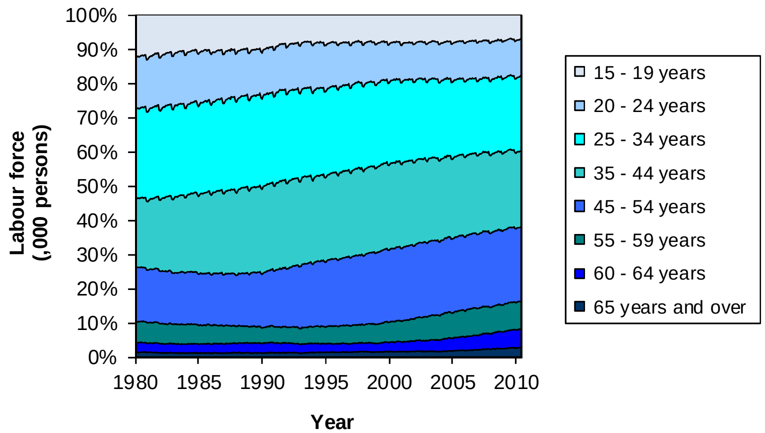
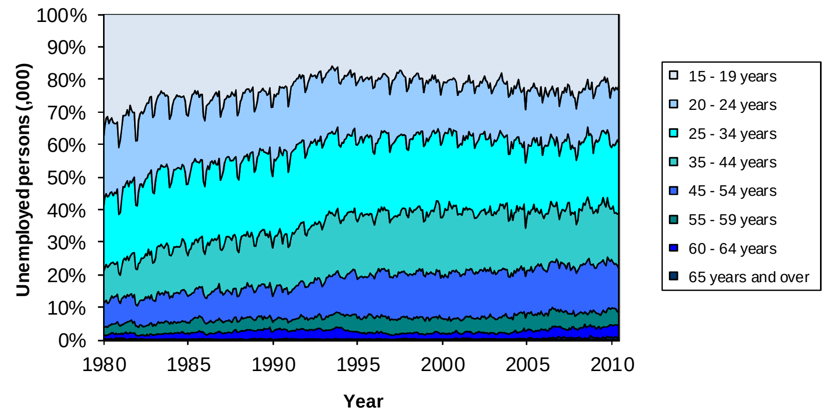


Figure 13: Australian employment by industry

C.2 Ageing population

The ageing Australian population translates into an ageing labour force. This impacts the pool of job seeker skills and characteristics and may exacerbate skills shortages over the long term. Despite this, the demographic mix of the current cohort of job seekers is in the younger age bands.

Population ageing is evident in the overall labour force…	…but job seekers still tend to be in the younger age bands.
 Figure 14: Age breakdown of the labour force	 Figure 15: Age breakdown of the unemployed

Appendix D Cost assumptions

D.1 Employment consultant cost

It was estimated that the total cost per hour for an employment consultant was $60.

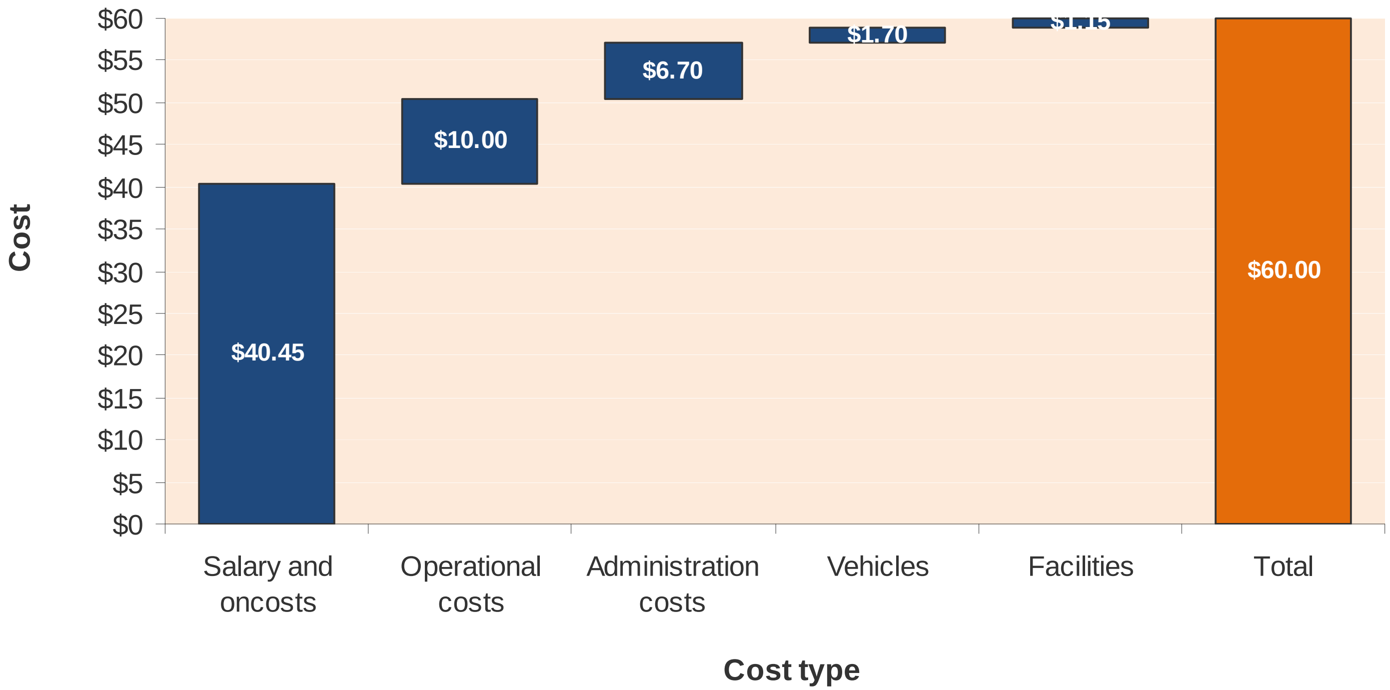


Figure 16: Total hourly cost for an employment consultant

D.2 Illustrative JSA task breakdown

Task	Time		Owner	Illustrative Components
	Short-term	*Long-term*		
Call centre conversation	30 mins	30 mins	Centrelink	Call registration Information provided about Centrelink processes and job seeker obligations
JSCI classification & JSA referral	30 mins	up to 2 hours	Centrelink	Job seeker appointment and potential referrals Run JSCI tool Create ESP for Steam 1 job seekers Document and claim verification JCA appointment Lodge SU19
Employment Pathway Plan	75 min (incl. 45 min of admin)	120 min (incl. 60 min of admin)	ESPs	**Preparation** Review file notes and ESS history and resume Review JSCI information Create client file **Face-to-face** Work through ESS requirements and identify barriers (including the 6-page EPP) Discuss eligibility rules Review/develop a resume Create activity booking Print out and sign off EPP **Post-meeting** Finalise resume Tidy up ESS Write file notes Follow-up job seeker activities

Task	Time		Owner	Illustrative Components
	Short-term	*Long-term*		
Skill development logistics	20 min (incl. 10 min of admin) each 2-3 weeks	40 min (incl. 20 min of admin) each 2-3 weeks	ESPs	**Preparation** Review appointment history Review classification and preparation stage **Face-to-face** Discuss progress against EPP Skills assessment and career profiling Set-up new activities Record activities in ESS and EPP Update resume Print out and sign off EPP Negotiate job trial and work experience **Post-meeting** Follow up with suppliers that job seeker is conducting activities Update ESS details Conduct EPF process Update file notes

Task	Time		Owner	Illustrative Components
	Short-term	*Long-term*		
CV and interview technique	105 min (incl. 60 min of admin)	120 min (incl. 20 min of admin)	ESPs	**Preparation** Review appointment history Review classification and preparation stage **Face-to-face** Discuss progress against EPP and update Review job applications and resume Provide interview skills **Post-meeting** Follow up with suppliers that job seeker is conducting activities Update ESS details Conduct EPF process Update file notes Run special claims Provide post-placement support
Outcomes	30 min admin	30 min admin	ESPs	Job match and/or reverse market Receive outcome payments Run special claims

Table 12: JSA task components

Whitlam Institute
WITHIN THE UNIVERSITY OF WESTERN SYDNEY

University of Western Sydney
Bringing knowledge to life

2011 SYMPOSIUM

Labour Market Evolution

The Challenges and Options for a 21st Century Economy

Presented by the Whitlam Institute
in partnership with the
University of Western Sydney
School of Economics and Finance

Tuesday 29 November 2011
InterContinental Sydney

About the Whitlam Institute

The Whitlam Institute within the University of Western Sydney commemorates the life and work of Gough Whitlam and pursues the causes he championed. In doing so, the Institute bridges the historical legacy of Mr Whitlam's years in public life and the contemporary relevance of the Whitlam Agenda to public discourse and policy.

Whitlam Institute Program

Through the Whitlam Institute Program we strive to be a leading national centre for dialogue and debate on public policy. The Program comprises a range of policy development and research projects, public education activities and special events.

In 2011 the Institute's work has included a continued focus on the Australian economy and further research into the influence that young people have on the democratic life of the nation including a major study on the electoral impact of younger voters. Our work on education policy is expanding with a new research project on the impact of external testing on school students. Work is well progressed on the current three-year ARC project on Federalism and Australian Schooling and its impact on quality and equity with colleagues at the University of Melbourne and partners. The Institute's collaboration with Riverside Theatres has seen a range of public forums in conjunction with the annual Behind the Lines political cartoons exhibition and most recently a forum on same sex marriage with Michael Kirby and former Senator Guy Barnett, supported by Dr Sev Ozdowski at UWS.

Whitlam Prime Ministerial Collection

The Whitlam Institute is also home to the Prime Ministerial Collection of Mr Whitlam's personal papers, books and memorabilia.

About the School of Economics and Finance at UWS

The School of Economics and Finance at the University of Western Sydney is comprised of about 40 academic staff covering the disciplines of economics, finance and commercial property investment and valuation. The School teaches across three campuses – Parramatta, Bankstown and Campbelltown – and its classes range from near 2000 students enrolled in first year to a cohort of 40 Ph.D students. A pluralist approach is a key distinguishing feature of teaching and research.

Academic staff have been recognized with the American Real Estate Society Distinguished Service Award, the European Real Estate Society achievement award and membership of World Economic Forum's "Global Agenda Council on the Future of Real Estate". Staff have published books on a range of diverse topics including 'Multinational Business Finance', 'Systematic Risks in Security Pricing and Global Stock Market Integration', 'Growth, Employment and Poverty Reduction: The Case Study of Indonesia' and 'The Economics of Rivalry, Conflict and Cooperation'.

Symposium Background

The symposium explores how the Australian labour market might evolve to deliver a society that is both prosperous and equitable.

It is an opportunity to consider ideas and options for:

- Maintaining a strong labour market within a sustained commitment to full employment
- Expanding the labour market to better utilize those who find it difficult to compete or to secure a place
- Better balancing the imperatives for economic growth and equity

While the recent Jobs for the Future Forum opened aspects of this conversation, there is a need for engaged debate about the long term factors that are driving structural change in our labour market.

Many of the factors that have changed the way we work are well known. They include the impact of new technologies, a decline in demand for entry level workers and the rise of the service sector.

Some of the trends that will shape *future* demand for workers are also known: in the short to medium term the resources sector will drive significant growth; an aging population will generate different job demands as well as changing the dynamics of labour supply; climate change and efforts to address it will impact on the nature and geographic distribution of work.

A future where every Australian has the opportunity to work in a job that meets their needs is a very complex problem, one that is beyond credentials (or skills). Workplace practices and structures can inhibit or develop the workforce we need. If we are to move towards a more skilled and resilient labour force we need to give attention to the process by which people enter the workforce, how they are trained and given experience on the job, and how their attachment to work can be maintained and strengthened over time. We also need to consider how the costs of changing workplace structures/patterns of work should be borne.

Long term change is also occurring on the 'supply side' of the labour equation. That the nature of work has and is changing is unquestionable. But the way we respond and the extent to which we implement strategies to ensure that risks and opportunities are shared across our community is not.

The ***Labour Market Evolution: challenges and options for a 21st century economy*** symposium asks whether a policy focus on overall economic growth and investing in a labour force that is employable is sufficient; or whether it is desirable, and possible, to address the sorts of jobs that will be available (including the type of life that these afford) and how these opportunities will be distributed.

Program

8:30 am: Registrations open

9:00 am – 12 noon: Symposium
James Cook Ballroom

9:00 am: Opening and Welcome
Professor Janice Reid AM, Vice-Chancellor, University of Western Sydney

Opening Address:
The Hon Barry O'Farrell MP, Premier of New South Wales

Sessions

Session 1:
The evolving labour market: the trends and challenges

Session 2:
Full employment, secure work and the growth imperative
Moderated panel session

Session 3:
Labour market possibilities in delivering a place for all
Closing observations

Session 4:
Symposium wrap-up

Speakers and Presenters:

- Sandra Parker, Deputy Secretary Employment, Department of Education, Employment and Workplace Relations
- Professor Phil Lewis, Director, Centre for Labour Market Research, University of Canberra
- Tim Lyons, Assistant Secretary, Australian Council of Trade Unions
- Professor Phillip O'Neill, Director, Urban Research Centre, University of Western Sydney
- Lisa Fowkes, Consultant working in workforce participation and NFP management

12 noon: Lunch and Address:
The Hon Mike Rann, former Premier of South Australia and former ALP National President
Treasury Room

2:00 pm: Close

Registration

by 15 November 2011 to Valerie Wilden at:

Fax: 02 9685 9110

Phone: 02 9685 9187

Email: info@whitlam.org

Post: Whitlam Institute
Locked Bag 1797
Penrith NSW 2751

Note: All registrations include the lunch session.

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InterContinental Sydney has special accommodation rates for guests attending the Labour Market Evolution Symposium. Between the dates of 27 November – 2 December 2011 a discounted rate of $330 per room per night for a Superior City side room is offered, subject to availability at the time of booking. Please contact Lauren Brancourt, Meeting & Events Executive at lauren.brancourt@interconsydney.com to confirm availability.

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- Senior policy makers
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The Whitlam Institute gratefully acknowledges the support of

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Symposium Venue

InterContinental Sydney
117 Macquarie Street, Sydney
Symposium: James Cook Ballroom
Lunch: Treasury Room

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University of Western Sydney

URBAN RESEARCH CENTRE

FINAL REPORT 2008

NORTH-WEST AND WEST-CENTRAL SYDNEY EMPLOYMENT STRATEGIES

North West and West Central Sydney Employment Strategies

Prepared for the

Western Regional Organisation of Councils and Projects Partners

by

Urban Research Centre

University of Western Sydney

FINAL REPORT

November 2008

Authorship statement

The report is produced by the Urban Research Centre at the University of Western Sydney. Contributors from the Centre were Professor Phillip O'Neill, Ms Maria Piquer-Rodriguez, Professor Peter Phibbs, Dr Louise Crabtree and Ms Kate Johnston.

The report also received valuable input from the following collaborators:

Professor Bob Fagan from the Centre for Research on Social Inclusion at Macquarie University.
Mr Graham Larcombe from Strategic Economics.
Mr Eric Sidoti from the Whitlam Institute, in conjunction with the University of Western Sydney.

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Notes on terminology

Western Sydney, unless otherwise indicated, refers to Greater Western Sydney or GWS.

West-Central and North-West are the NSW Department of Planning sub-regions.

Metro Strategy and Metropolitan Strategy are used interchangeably.

Executive Summary

Chapter 1 Introduction

The task

The report is prepared by a consortium led by the Urban Research Centre at the University of Western Sydney. The report's main outputs are its analysis and recommended employment strategies for two of Western Sydney's three sub-regions, North-West and West-Central. The report is commissioned by the Western Sydney Regional Organisation of Councils and its project partners. The project is funded by the NSW Department of Planning.

The NSW Government's Metropolitan Strategy *City of Cities: a Plan for Sydney's Future* (NSW Department of Planning 2005a) sets a target of 280,000 net additional jobs in Western Sydney by 2031. The target is based on maintaining the early 2000s ratio of jobs self-sufficiency for Western Sydney in a context of ongoing population growth. The jobs targets translate into a net additional 130,000 jobs for North-West sub-region and 61,000 net additional jobs for the West-Central sub-region. On the surface the targets are a simple aspiration seemingly achievable by a continuation of the region's jobs growth trend for the last decade. Our findings, however, show that the targets will be difficult to achieve, especially with a satisfactory mix of full time and part time jobs.

Jobs availability and regional self-sufficiency

One barometer of the extent to which Western Sydney is on track to achieve the employment targets is the extent to which jobs growth in Western Sydney has matched local demand. Our finding is that there has been a slight fall in both the proportion of residents working locally and as well as a fall in the ratio of total local jobs to local workers.

In 1981 59% of Western Sydney's residential labour force found work within the region; by 2001 the equivalent figure rose to 64.3%. Yet the proportion of the Western Sydney labour force working locally has not risen since; in fact we find the proportion working locally fell slightly to 63.7% by 2006. This means that well over a third of Western Sydney workers are forced to commute to destinations outside the region every day for their jobs.

Executive Summary

In terms of aggregate regional job availability – as opposed to the actual take-up of jobs – in 1971 Western Sydney hosted 67 jobs for every 100 workers resident in the region. By 1991, this number jumped to 78 jobs for every 100 resident workers. Yet we find now that the number has fallen to 76 jobs per 100 resident workers.

Results from our simulations

We undertook simulation exercises to reveal how the target of 235,000 net additional jobs could be generated. The goal of 235,000 net additional jobs was the aggregate net additional jobs target proposed initially in the Metropolitan Strategy, although when you sum the targets in the sub-regional plans the target has now jumped to 280,000. The results of our simulation show that unless something extraordinary happens to change the way the Western Sydney regional economy creates jobs, then even the lesser target of 235,000 jobs will be difficult to achieve.

Here is a summary of the simulation.

As a starting point, a target of 235,000 net additional jobs for Western Sydney by 2031 means turning a total of 595,000 jobs in Western Sydney in 2006 into a total of 830,000 jobs in 2031. Assuming constant linear growth, this task requires an average annual growth rate in the number of jobs of 1.04%. This rate is in fact less than the annual jobs growth rate in Western Sydney for the period 1996-2001 (2.025% p.a.) and for the period 2001-6 (1.05%). The presumption could be made, then, that a continuation of the growth rates of the past decade would see the 235,000 jobs target for Western Sydney met.

However, there are two problems with such a simple extrapolation of recent trends. One is that the last decade is probably not a good guide to the full range of economic conditions to be experienced by Western Sydney – indeed by any region – over the next 25 years. The last decade in Australia was characterised by uninterrupted economic growth without major negative external economic shocks and without recession or even economic stagnation. It is reasonable to assume that the Western Sydney regional economy will experience difficult economic conditions at various stages during the period to 2031. The probability of economic downturns should therefore be factored into any simulations or forecasting.

The second problem with a simple application of the growth rates of the last decade to the forecasting of a regional jobs total is that this makes an unrealistic assumption about the constitution and performance of labour markets. Labour markets do not grow in a straight forward linear and incremental fashion. Irrespective of the condition of an economy, jobs are always being created and destroyed. Jobs growth occurs when the rates of job creation in a region sufficiently exceed the region's rates of job destruction. In other words, to know the possible ways the Western Sydney regional economy can yield the Metropolitan Strategy's employment targets requires a knowledge and understanding of the region's labour market turnover, or churn.

Prominent national labour market econometricians Mitchell et al (2006) have estimated rates of jobs creation and destruction in the Australian economy for the period 1983 to 2001. We see this period as a very useful, perhaps the best, guide to labour market change in Australia over the next 25 years given it covers the recent past and incorporates a range of economic conditions and cycles over a long period of generally favourable national economic growth and performance. In table 1.1 we show the national rates of job creation and destruction for the 1983-2001 period. The table breaks aggregate job creation and destruction rates into part and full time jobs and into three broad sectors: 'goods production', 'wholesale and retail', and 'other services'.

We have applied the Mitchell et al rates of job creation and job destruction for these sectors based on the reasonable assumption that jobs turnover in the Western Sydney region approximates the equivalent rates of jobs turnover for the nation as a whole.

Our simulation shows that the rate of net job production in the Western Sydney region would fall dramatically short of the target of 235,000 net additional jobs if the economic conditions from 1983 to 2001 are a useful guide to the period 2006 to 2031 and if the sectoral composition of the Western Sydney labour market persists.

We observe that the employment growth rate during the 1983-2001 period (0.8% p.a.) was actually 40.3% less than the growth rate (1.34% p.a.) revealed by the simulation as needed to reach the target in the Metropolitan Strategy of 235,000 net additional jobs for Western Sydney; irrespective of the full time or part time status of these jobs.

In respect of full time and part time mix, our simulation reveals that at 1983-2001 growth rates a total of 600,274 new full time jobs would be created by 2031; but 566,784 full time jobs would be destroyed. Thus the projections from the simulation show a net increase of only 33,489 full time jobs between 2006 and 2031.

One of the major reasons for poor projected jobs growth in the simulation is the input of data showing Western Sydney's over-representation in the goods production sectors (defined as manufacturing, mining and construction). Our simulation yields a net fall in the number of full time jobs in Western Sydney's goods producing sectors over the next 25 years. This would be a disappointing outcome since manufacturing industry with 99,267 jobs in Western Sydney in 2006 is the region's largest employment sector, while construction with 37,423 jobs is its sixth largest sector. A negative outcome in the goods producing sector would place major pressure on the services sectors in Western Sydney to be the major providers of the region's employment growth.

Our simulation attempts to acknowledge the dynamic activity involved in the constitution and operation of labour markets. An important consideration is the growing division in Australian labour markets between part time and full time jobs. If the 1983-2001 rates of net part time job creation persist for the next twenty five years then of the net 129,707 jobs predicted by the simulation to be generated in Western Sydney by 2031, a total of 96,218 would be part time jobs.

Disappointingly, there is no disaggregation of the jobs targets into full time and part time categories in the Metropolitan Strategy or in the subsequent sub-regional plans. These documents refer simply to a target number of additional jobs without any disaggregation. Nor is there reference in the documents to the processes of labour turnover or to differential rates of net job growth (or decline) across the various economic sectors.

Climate change

We also think it important to point out the implications for Western Sydney of the impacts on the labour market of policy responses to climate change. We see that Western Sydney will face adjustments in at least three major domains, each with significant employment implications. One will be the direct impact of a carbon emissions trading scheme (ETS) or a carbon tax on the region's producers. Western Sydney has a high proportion of its firms in the tradeable goods sector. Industry analysis of the possible impacts of the proposed federal government ETS suggests a significant number of Western Sydney industries will be affected by an ETS. These include the construction industry (including lime and cement inputs), steel manufacturing, ceramics, oil and gas refining, and non-metallic minerals manufacturing. So too the region has a major concentration of transport and logistics firms where the basic ways business is transacted will change substantially as responses to the threat of climate change are implemented.

The second domain of change due to response to climate change will involve alterations to the ways goods move in, out and across the region. Western Sydney is the prime destination for Sydney's goods traffic performing the major role in logistics handling, wholesaling and distribution in each of the metropolitan area's international, interstate and NSW regional supply chain linkages. Road freight transport is currently the most significant transport mode in these operations. It is reasonable to expect that this industry will undergo major transformation over time as climate change responses are enacted.

The third domain involves the changes that will be forced on car-based commuters from the region. Western Sydney has an extremely high rate of car-based commuting. Our calculations reveal that the estimated weighted average of time spent currently by all full time Western Sydney workers in daily commuting is 61.6 minutes. Moreover, we estimate that 23% of Western Sydney's full time workers spend more than 100 minutes daily in journey to work, while 39% spend more than 70 minutes daily in commuting.

Alarmingly, 79.7% of commuting for full time work in Western Sydney is undertaken by motor vehicles. Clearly, reduced private vehicle use as part of greenhouse gas reduction initiatives requires substantial changes to commuting patterns for Western Sydney workers.

The fourth area of adjustment will come from induced changes to consumption patterns. The goods producing sectors in Western Sydney cannot avoid the impacts of these shifts even though their precise nature and the impacts involved cannot yet be known.

We also note, though, that jobs generating opportunities will arise from responding positively to global climate change issues; and that there will be opportunities for the generation of cost-saving measures and greater competitiveness among local producers arising from national and global pressures for change.

Executive Summary

Outlook summary

We note that Western Sydney is a complex, robust economy with a history of successful adjustment to national and global change. Its manufacturing sector retains significant size. The region has built thriving new business parks. Parramatta is reaching genuine regional city status. And population growth itself, as we show, provides an ongoing impetus for employment generation. So there are reasons for optimism.

But this doesn't mean the region can rely for its future growth and prosperity on the flow-on effects from the performance of the Sydney city-region economy and the national economy. Our argument is that substantial initiatives are required to re-engineer and steer the Western Sydney economy and labour market towards a sustainable future that meets the region's long term social and economic aspirations. A continuation of the drift of the last decade – remembering that this was the greatest economic growth and wealth creating period in Australian history – will see Western Sydney fall dramatically short of the Metropolitan Strategy jobs targets.

The diagram

Our response to the challenge is captured in our diagram (see figure 1.1). The diagram is a valuable guide to our analysis, our thinking and to the generation of employment strategies.

A central component of the diagram is the box labelled 'composition'. Getting a regional economy, like Western Sydney, to perform successfully requires that we first understand the composition of the regional economy before we can generate new ideas about how this economy might be composed in the future so as to produce the desired directions and outcomes.

Our diagram says that the most important attributes of the composition of the Western Sydney regional economy are 'territorial competence', 'infrastructure' and 'urban structure'. It is important to acknowledge, though, that territorial competence, infrastructure and urban structure are not discrete entities or categories.

Our diagram points to three categories of impetus for the generation of jobs. One is growth itself. Economic growth in Western Sydney *will* come from population growth. The sectors that are naturally stimulated by population growth are key employers in Western Sydney: retailing, construction, certain manufacturing sectors, health services, education services, community services, personal services as well as certain parts of the accommodation and food services sector. So too parts of the wholesaling, transport and logistics industries grow directly as a result of urban expansion due to population growth.

On its own, though, growth from population growth will not build a strong, diverse economy. The Western Sydney regional economy, as it has done historically, needs to sustain a set of specialised competitive industries. These specialisations are crucial to the success of any regional economy. One reason for this is that specialisations generate external income flows, with their higher rates of income and employment generating multipliers. Another is that specialist industries tend to have higher rates of innovation and learning which then become available for local dissemination.

As our diagram shows, the third impetus comes from new business formation which is vital for the success of the Western Sydney regional economy.

Chapter 2 The key understandings that inform and guide the project

The Fagan et al (2004) study for WSROC provides a valuable base for the analysis contained in this report. The Fagan et al study showed that the suburbanisation of manufacturing and services sectors jobs has been substantial since the mid 1980s. As a result (as we note above), whereas in 1981 59% of Western Sydney's residential labour force found work within the region, by 2001 64.3% of the region's labour force worked within the region. Yet we find that this proportion has not improved recently, falling slightly to 63.7% by 2006. This halt coincides with stagnation in the ratio of total Western Sydney jobs to Western Sydney workers. In other words, a two-decade long trend towards labour market regionalisation in favour of Western Sydney seems to have peaked in the mid 1990s. Since then, the proportion of Western Sydney residents working in Western Sydney has changed very little.

A key portion of the suburbanisation of jobs during the 1980s and 1990s was in the manufacturing sector. A net growth of 6.5% in jobs in this sector between 1996 and 2001 entrenched Western Sydney as a leading manufacturing region in Australia. Other suburbanisation of employment occurred in warehousing and producer services activity especially in the rapidly growing Norwest Business Park.

Jobs growth in the 1980s and 1990s in the services sector was related closely to Western Sydney's regional population growth. Growth was observable in retailing, community and personal services, health and community services and in education. In the 1980s and 1990s, though, Western Sydney failed to secure a significant share of employment growth in Australia's fastest growing services sectors: the finance, property and business services sectors.

The Fagan et al study emphasised that the successful placement of Western Sydney's labour force in suitable jobs was not just a question of jobs provision. Successful placement also depended on addressing access inequalities faced by segments of the Western Sydney labour force. Our study reproduces the Fagan et al diagram which demonstrates the ways labour market access is enhanced (or impeded).

Urban structure

We emphasise in chapter 1, and in other parts of the report, that conceptual or imagined maps of urban structure play a key role in steering the actions of governments and formal institutions in building urban form and function. A simple example is the idea of the Sydney orbital road system. The idea of an orbital road system was conceived as early as 1944 before formalisation as a state government policy in the 1962 County of Cumberland planning scheme. Its fruition with the completion of the M7 motorway and then the opening of the Lane Cove tunnel in 2007 represents physically a long series of political, institutional, real estate and property development decisions and actions that were guided fairly unproblematically by this imagined structure of a Sydney roads system.

Our argument in this report is that we may well be in the process of steering the growth of a 21st century metropolitan-wide structure of Sydney through an uncritical adoption of the 'global economic corridor', sometimes called the 'global arc', as the driver of the Sydney basin economy, and, therefore, as the core component of the urban structure in the Sydney region around which other components are structured and function.

In a conceptualisation of Sydney that is based on the global economic corridor or global arc, it becomes 'common sense' for priority to be given to nurturing activities, infrastructure and services within the arc. Moreover, within the conceptualisation, other parts of the city are seen to survive best by playing a supporting role to a thriving global arc, these other parts getting their rewards from flow-on or trickle-down effects from the income and employment generating successes of a prosperous globally-engaged Sydney. The recent expansion of office space density for the redevelopment of the Barangaroo precinct is one illustration of the power of the arc metaphor in driving, in this case, government support and planning approvals.

For Western Sydney, the dominance of the arc in government thinking about Sydney as a whole often relegates the region to shadow and dependent status. We provide a demonstration of this through an analysis of the ways the arc is represented in the Metropolitan Strategy document (2005). We show too that in spite of appearing in its sub-title, the Metropolitan Strategy's representations of Sydney as a 'city of cities' are invariably poorly evidenced and argued for. The city of cities idea remains undeveloped in our view as well as unsupported by properly funded strategies compared to an ongoing consciousness and, therefore, support for land use activity within the global arc.

Our recommendations within the category of urban structure in this report seek to address the disadvantageous nature of the global arc metaphor especially in respect of its limited aspirations for a diverse competitive economy for Western Sydney. In our view, a city of cities conceptualisation of Sydney deserves fuller support.

Infrastructure

Uniquely, infrastructure is a public-capital good. It carries the implication of universal or, at least, non-exclusive access. Infrastructure is designed to integrate a city and its sub-regions, link the city to other places, add cohesion to social and economic communities and provide free positive externalities. Quality infrastructure also counteracts or minimises the negative externalities of economic and social activity in a city – like traffic congestion and slow communications speeds. Infrastructure is vital to a region's economy and critical to the circumstances in which individual enterprises compete successfully; just as it is crucial to broader urban social and cultural life.

Infrastructure for Western Sydney must be thought of as a public good with the potential for making all producers more efficient, of improving Western Sydney householders' access to jobs, of distributing positive externalities as broadly as possible, and as a set of devices that provide life-giving networks and connections across the region and externally.

Chapter 3 International understandings and lessons for Western Sydney

We refer to a range of overseas studies and experiences in our work. We highlight two highly important recent contributions and draw heavily from them. One is the European Commission's 2006 study *Constructing Regional Advantage*. The other is a series of documents developed by the USA's Brookings Institution within its *Metropolitan Policy Program*.

We use the international literature to reinforce our argument for the adoption of a platform approach (rather than, say, a sectoral assistance or a place marketing approach). Underpinning this argument is the understanding that achieving Western Sydney's jobs targets requires an ongoing transformation of the region's productive base alongside a re-engineering of the region's jobs locations, major changes to the ways workers travel to work, and ongoing efforts to raise labour force participation, especially among hard to place groups. Being able to enact a successful transformation now and as required in the future requires the creation and establishment of dynamic efficiencies. These are the capacities held by stakeholders within a region which enable the successful shift away from a redundant set of economic configurations to a newly competitive set. These capacities, sometimes called territorial competencies, are inherently spatial and therefore need to be developed and nurtured *in situ*. We find there are seven elements of an effective territorial platform:

1. Geographical prowess
2. Business and people climate
3. Talented workers
4. Regional knowledge infrastructure
5. SME and entrepreneurship policies
6. Regional innovation systems
7. Effective governance systems.

These are now summarised briefly.

i. Geographical prowess

The geographical prowess of a region is demonstrative of its having reached a successful level of competitiveness. Geographical prowess comes from:

a. Secure access and deployment of resources, labour and capital inputs
b. Confidence in the use of state-of-the-art production techniques
c. Stable participation in supply-chain and marketing relationships.

These traits are acquired by learning and doing and they are normalised by the adoption of best-practice operations across a region.

ii. Business and people climate

An effective regional platform of territorial competence nurtures a supportive business environment. Importantly, this business environment is strengthened by the liveability and sustainability of a region chiefly because the key asset of a competitive business is its staff; and good staff demands quality lifestyles in a sustainable urban setting. These include, it should be noted, the ability to travel to and from work in a reasonable time, seen commonly these days as less than 30 minutes each way, in some sort of comfort and inexpensively.

The role of the regional platform in building a supportive business and people climate includes:

a. Enhancing the region's capacity to produce, attract and retain highly skilled labour. These are the people who play the lead roles in knowledge creation and deployment, and in innovation.

b. Building the region's untraded interdependencies and intangible assets which include knowledge transfers between firms as well as the vibrancies that successful regions build that make them attractive to mobile, talented employees, managers and entrepreneurs. Critical here is a region's social and cultural environment. A region's ability to attract qualified personnel comes from its level of cultural diversity and tolerance, the quality and affordability of its housing stock, and the levels and quality of social infrastructure and urban services that are available.

iii. Talented workers

The development of Western Sydney has been dominated by its role as a supplier of labour rather than other production inputs such as natural resources, new technologies or cheap finance. The future of the Western Sydney sub-regional economies, however, depends on the development of a set of integrated, competitive businesses that maximises the talents of existing labour and develops the conditions for attracting and developing new sources of labour.

iv. Regional knowledge infrastructure

A key task of an effectively functioning regional platform is the creation and transfer of competitive knowledge. This task has a number of components.

i. Tertiary institutions provide both knowledge dissemination and training programs. The role of tertiary institutions is in both the development of new talent and the resuscitation and retraining of existing talent. These ensure the ongoing production of new sources of quality labour as well as the retention and revitalisation of the existing labour force.

ii. Education and training institutions also build regional knowledge infrastructure by direct engagement with the business community. Knowledge engagements here include the creation of knowledge-intensive spin-off companies, the establishment of business parks and incubators, joint research and training initiatives, and the like.

v. SME and entrepreneurship policies

Successful regional economies have a mix of large, medium and small sized enterprises. The small and medium sized enterprise (SME) sector, however, often underpins the level of successful entrepreneurship in a region.

SMEs thrive in regional economies with targeted support platforms. Critical to the success of SMEs are:

1. Access to appropriately structured and supervised financial capital streams
2. Availability of low-entry-cost premises with quality IT support and general amenity

3. Access to learning facilities including appropriately trained and experienced brokers and advisers in production, financing and marketing domains
4. Access to innovation resources to enable pathways to growth and competitiveness.

vi. *Regional innovation systems*

Regions must build regional innovation systems. These are characterised by thick layers of knowledge available through contact with other firms, institutions, government agencies and research organisations.

A regional innovation system emerges when there is an intersection between the operations of collaborating or clustering producers in a region with the region's knowledge generation and circulation systems. Important to such interaction are the role of informal institutions and the development of norms, trust and routines that allow innovation to emerge and be reproduced.

The key parties to a successful regional innovation system are firms and their industries, government and its agencies and the key research and training institutions, especially the university.

vii. *Effective governance systems*

Regions must build strong governance systems. Strong governance has three major characteristics: collectivity, organisational strength and innovative approaches. The three characteristics bind social, political and economic actions with common purpose. Building social capital in communities, therefore, also contributes to better political and business climates. So too, more advanced administrative systems in business organisations help build more efficient and effective public administration systems, and vice versa.

Unfortunately, state bureaucratic systems of governance are rarely characterised by collectivity, organisational strength and innovation. In this report we offer a hybrid, flexible model of regional economic governance that has better potential to embrace the three governance traits of collectivity, organisational strength and innovation.

Chapter 4 Macroeconomic geographies of Sydney

The employment land use targets for the study area are contained in the Department of Planning's draft sub-regional plans. While these provide useful and relevant aggregate information on the sub-regions, we find from our analysis that there are significant differences across the sub-regions. There are also a commonality of issues which transcend these differences.

The population of the two sub-regions was around 1.46 million people in 2007, about 39% of Sydney's total population. The two sub-regions are forecast to accommodate 235,500 new dwellings by 2031 which represents about 40% of the metropolitan area's new dwellings.

The West-Central sub-region

West-Central continues to be a major employment sub-region for metropolitan Sydney despite job losses during the last two decades arising from deindustrialisation and trade liberalisation measures. Manufacturing concentrations remain at Clyde, Silverwater, Milperra and Smithfield-Wetherill Park.

A feature of employment growth in West-Central has been the emergence of Parramatta as a genuine second CBD for Sydney.

Another significant development, and a more recent one, has been the emergence of Sydney Olympic Park as a commercial, business, cultural and retailing precinct.

Westmead is the other recent specialist centre to emerge in West-Central with its specialisations in health services, higher education and medical research.

The West-Central sub-region has higher than average unemployment rates, however, which seem to be associated with the loss of lowly skilled jobs in the area in the last two decades.

The sub-region's employment lands are under pressure for conversion to residential zonings in order to meet the sub-region's residential growth targets.

The draft Department of Planning sub-regional strategy indicates a net jobs target of 54,300 for West-Central. The majority of these jobs is anticipated to be located in the sub-region's strategic centres. Although the sub-regional plans do not indicate a sectoral breakdown for these jobs, the indication of location within the urban centres suggests that the jobs growth is anticipated to be in the services sectors.

The North-West sub-region

The North-West sub-region can be disaggregated into two reasonably distinct districts. The western corridor runs from Blacktown through Penrith to the lower Blue Mountains. It is criss-crossed by the M4 and M7 motorways and includes the Western Sydney Employment Hub and the Western Sydney Employment Lands Investigation Area. The employment generation task for these areas involves the identification of appropriate sectoral concentrations and, accordingly, the equipping of employment lands with appropriate infrastructure including journey to work access.

The other district is the north-west sector which stretches to Hawkesbury from the northern areas of Blacktown and Baulkham Hills. This area has expanded as a commuter belt for white collar workers including higher proportions of professional workers than is typical for Western Sydney more generally. This district is also host to the Norwest Business Park, the site of considerable higher-order employment growth over the last decade.

The North-West sub-region includes the North West growth centre which is targeted as the location for 60,000 new dwellings. The Metropolitan Strategy also anticipates the development of an additional 60,000 dwellings in existing areas in the North-West and a further 20,000 new dwellings in greenfields sites away from the growth centre itself.

The North-West is centred on the strategic centres of Penrith, Blacktown, Castle Hill and Rouse Hill.

Growth drivers

Population growth will be an employment growth driver for the two sub-regions reflected in growing employment in retailing, construction, health and community services, and education. Growth in population and of household consumption also generate the movement and distribution of freight.

The two sub-regions are very significant locations for Sydney's employment lands with the North-West (28.2%) and West-Central (27.3%) contributing a major share of the metropolitan area's current total stock.

Infrastructure is a both an asset and a major need for the sub-regions. The M4, M7 and the Parramatta-Liverpool and North West transitways have emerged as infrastructure magnets for the sub-regions. As chapter 9 argues, however, more needs to be accomplished in infrastructure investments to raise the competitive quality of the employment lands in the sub-regions.

A significant feature of the Western Sydney economy is the presence of the University of Western Sydney which provides the major higher education training role for the region as well as a growing role in commercial knowledge transfer and applied research capacity and development. The university has the potential to contribute in increasingly important ways to the jobs-generating success of enterprises in the sub-regions.

Chapter 5 Industry dynamics

Western Sydney is a large diversified economy containing nearly 250,000 businesses and producing around 9% of the nation's GDP. Employment growth in Western Sydney over the next 25 years will be driven by five major factors:

- Engagement with the global economy
- Capturing benefits of population growth and rising incomes
- Access to supply and distribution chains through quality infrastructure
- Competitively priced and well equipped employment lands
- Investment in knowledge infrastructure and skills training.

Western Sydney has competitive advantages in its major sector, manufacturing. These arise from its services of local markets, especially in processed foods, metals, building materials; and from concentrations in advanced manufacturing activity including in aerospace, defence equipment, motor vehicle components and marine engineering. About 51% of Sydney's manufacturing employment is located in Western Sydney and this share is expected to rise over time.

We identify impediments to growth in Western Sydney. The report rates these as the most significant:

- Insufficient competitive industry clusters
- Transport bottlenecks
- Skills shortages
- Inadequate telecommunications infrastructure
- Cost pressures on households especially in housing and transportation
- Ineffective governance.

West-Central industry dynamics

The West-Central draft sub-regional strategy sets a target of 61,000 new jobs. This modest growth target takes into account the sub-region's older industrial base with an ongoing propensity for job-shedding. Hence job targets are lower in Bankstown and Holroyd but higher in Parramatta and Auburn where significant growth in services jobs is anticipated.

North-West industry dynamics

The North-West has currently about 275,000 jobs and is forecast to grow at the highest rate for all metropolitan sub-regions. Employment growth in the sub-region will be driven by:

- Population and income growth
- Improvements in transport infrastructure especially in improving labour market access
- Growing specialisation in high value adding industries
- Access to lower-cost employment lands
- Quality local labour supply.

The North-West is also Sydney's major producer of agricultural commodities. This land use is under threat, however, with sizeable residential re-zonings and significant agricultural job losses experienced in the last decade.

The North-West plays an increasingly important role as host to transport and logistics industries attracted by lower-cost greenfields sites and easy access to the Sydney orbital via the M4 and M7 motorways.

The success of the Norwest Business Park and the configuration of growth in the North-West over the last decade – including the composition of the labour force and the nature of new businesses – indicate a strong likelihood of success for a new business park development in the sub-region.

Chapter 6 Labour market analysis

The Fagan et al study for WSROC in 2004 noted that the suburbanisation of jobs in Sydney in the 1980s and 1990s was accompanied by:

- Deindustrialisation within the same suburbanising sectors, especially in manufacturing, meaning that these sectors had limited ongoing growth prospects
- Dispersal of employment sites due to poor attention to the provisioning of employment lands and strategic centres
- Inadequate public transport access to Western Sydney jobs.

The study highlighted Western Sydney's failure to secure jobs growth in the banking, finance and business services sectors.

In our analysis of 2006 census labour force data, using comparisons with the 1996 census, we find:

- Strongest labour force growth to be associated with areas of highest population growth (an obvious but often neglected observation)

- Lagging labour force growth in the West-Central sub-region particularly associated with stagnation in the male-dominated labour market segments

- Very little change in the structure of Western Sydney's labour force, either in terms of occupation and industry, such that the area remains over represented in its traditional areas of concentration and under represented in the areas where it was deficient a decade ago

- Western Sydney remains over represented is in the manufacturing; construction; retail; transport and warehousing; and low value adding services segments of the workforce

- Western Sydney remains under represented in the accommodation and food services; information, media and telecommunications; finance and insurance; rental, hiring and real estate services; administrative and support services; managers; and professional, scientific and technical services segments of the workforce.

Chapter 7 Unemployment and problems of labour market access

In our analysis we find that unemployment has fallen consistently across Western Sydney over the last decade with the highest falls occurring in the outer, higher growth LGAs. Yet Western Sydney still records Sydney's (and Australia's) highest rates of unemployment.

In addition, we find complex distribution patterns in male and female unemployment rates and in male and female labour force participation rates across Western Sydney with substantial pockets of poor labour market access especially when high unemployment rates and low labour force participation rates coincide. In brief, unemployment and low labour force participation persist in the sub-regions as highly localised phenomena resistant, it seems, to labour force stimulus generated by persistent national economic growth.

There are important policy implications here. The major insight is that employment participation rates for hard to place groups are improved not just by expanding the demand for labour but also, critically, by improving these groups' access to social infrastructure and by upgrading skills, qualifications and job experiences.

Chapter 8 Population and employment forecasts

In this chapter we evaluate projections for population and employment by the Centre for Transport Planning and Product Development (CTPPD; formerly the Transport and Population Data Centre). Our assessments are confined to examining and adjusting assumptions made within the CTPPD's modelling. Our own projections for Western Sydney based on application of the Mitchell et al modelling techniques have not been repeated at the sub-regional level due data availability and time constraints. The CTPPD targets and our adjusted assessments of these targets, therefore, should be moderated by insights from our comments on the Metropolitan Strategy jobs targets contained in chapter 1.

West-Central

We see the population targets for West-Central as high and the employment targets for the sub-region as low. Existing population targets are based on there being significant opportunities for redevelopment of brownfields sites in West-Central into higher density residential lots. Yet growing demand for suitably configured land for services based activity (such as is occurring at Sydney Olympic Park and in the Parramatta CBD) indicates a tension between diversion of former industrial lands for residential re-development and conversion of these lands into sites for services based activity. We recommend investigations to secure the industrial zonings of existing employment lands with a view to expanding West-Central's employment generating capacities.

North-West

Strong population growth in the North-West drives employment growth. While population growth targets are based on reasonable assumptions, factors that may impede their realisation are:

1. Lower immigration flows capture due to rising living costs and other pressures within the wider Sydney basin

2. Higher out-migration flows especially among older age groups, and in association with higher relative property values

3. Inadequate land release and development rates

4. Successful urban consolidation practices in inner areas.

Employment forecasts for the North-West are seen as ambitious. Positive features of growth are:

- The development of agglomeration economies as critical masses of economic activities are attained
- The emergence of Castle Hill and Rouse Hill as genuine regional centres

- The likely success of new business park investments
- The likelihood of substantial new transport infrastructure investment in the longer term especially a north west rail link of some sort.

Yet there is no historical evidence to support the high rates of employment growth contained in the draft sub-regional plans. We find a more modest employment growth target for the North-West sub-region to be around 100,000 net additional jobs, a somewhat lower figure than the official 130,000 target. On the other hand, we find the West-Central target of 61,000 net additional jobs understates this sub-region's employment capacity by about 10,000 jobs. Of course, the retention of employment lands in West-Central especially along the Parramatta Road corridor is important in the realisation of a higher target figure.

Chapter 9 Infrastructure

The provision of quality infrastructure is a major input in securing a satisfactory level of expanded employment opportunities in the sub-regions. Our recommendations for improved infrastructure provision to the sub-regions are based on regional consultations, and assessments of key documents including the NSW government's infrastructure plans and recent submissions from the region's key agencies.

Transport infrastructure in particular suffers from chronic under-investment with significant congestion and high rates of car dependency. We note in particular the need for the following infrastructure projects:

Public transport

- The South West Rail Link
- The North West Metro
- The West Metro
- The Epping to Parramatta rail link
- A major north south Western Sydney rail link
- A major improvement in public transport operations that service the sub-regions in general

Road transport

- The M4 East extensions
- Improvements to the arterial roads
- Actions to enhance freight movements and transfers

Employment lands

- Enhanced infrastructure services to new employment lands

Telecommunications

- Expediting federal government broadband rollout
- Participation in University of Western Sydney HEEF project

Higher education

- Building stronger business-university links in the region as a core component of the establishment of a regional innovation system.

Chapter 10 Spatial analysis

This chapter explores the spatial directions of the Western Sydney economy in the context of the wider city-region economy as well as implications for the sub-regions. In particular, the argument is made for stronger efforts to secure the vision of an integrated 'city of cities' spatial structure.

The following spatial issues are discussed:

- The need for concerted attention to strengthening the roles of the key strategic centres in West-Central: Parramatta, Bankstown, Bankstown Airport/Milperra, Sydney Olympic Park and Westmead. Key issues to be addressed in these centres include matters relating to public spaces and safety; transport accessibility; residential amenity; urban design; and, of course, effective employment generating strategies.

- Likewise, the need for concerted attention to strengthening the roles of the key strategic centres in North-West: Penrith, Blacktown, Castle Hill, Norwest Business Park and Rouse Hill. The issues to be addressed in strengthening these centres parallel those listed for West-Central though with different emphases and directions.

Chapter 11 The employment strategies

Our approach

Our strategy proposals are interim in that they are designed to be continuously superseded, such is our approach to the employment generation task. Like its constituents, a region must be a place of learning and dynamic adjustment. So too the strategies that drive its composition must be based on effective design and implementation and evaluation so that learning occurs systematically and continuously with the goal of dynamic adjustment ever in sight. It is logical, therefore, that the strategies be seen as temporary, always requiring adjustment and replacement as they fall short in achieving their objectives and as better ways of achieving the targets emerge.

That said, we are confident that our strategies will have an enduring and successful impact. We note particularly the need for some strategies to be ongoing and fulsomely supported.

We divide our strategies into the domains that we argue throughout this report are constitutive of regional economic and labour market composition, hence we propose strategies grouped into platform measures, infrastructure measures and urban structure measures.

Within each of these three domains we propose two types of initiatives. One type we call 'light horse initiatives', named after the M4/M7 Light Horse Interchange, because of its symbolism as an enduring structure for Western Sydney.

We also propose adjoining strategies which we call 'composition initiatives'. In other words these are aimed at building the desired composition of the region.

We were tempted to have a third strategic category called 'measurement and monitoring initiatives'. Yet we have decided to incorporate measurement and monitoring actions into both the light horse and the compositional initiatives, such is where measurement and monitoring actions belong, blended with the processes of change not sitting separate from them.

Finally, we do separate out our specific governance initiatives. Governance is a key part of the implementation process and critical to the success of the initiatives. For these reasons we think it appropriate to discuss governance initiatives as an additional section.

Our territorial competence strategies

As we argue throughout this report, especially in chapters 1, 2 and 3, achieving the desired employment targets for Western Sydney depends on building a regional platform that encourages seven things:

1. Geographical prowess, which is the region's capacity to deliver its competitive advantages, build entrepreneurial confidence and engage in stable ways in supply chain and marketing relationships within the region and with elsewhere

2. Business and people climate, which is the capacity of the region to provide fruitful and rewarding day-to-day experiences for both the business community and the region's residents

3. Talented workers, which are the region's key to ensuring value-adding within all economic engagements and transactions

4. Regional knowledge infrastructure, which is ensuring the ongoing existence of mechanisms and propensities for the creation and transfer of competitive knowledge.

5. SME and entrepreneurship policies, which encourage successful enterprise formation and operation at a variety of scales and operational domains

6. Regional innovation systems, which are the thick layers of distributed knowledge that circulate in a federated way to ensure the efficiencies and competitiveness of firms, institutions, government agencies and research and educational organisations

7. Effective governance systems, which through embracing collectivity, organisational strength and innovation build common purpose and successful outcomes as natural regional occurrences.

We recommend a set of strategies that attempt to achieve these seven interrelated outcomes.

Our urban structure strategies

We have shown in earlier chapters that the development of a successful, jobs-generating Western Sydney regional economy involves the development of an effective, supportive, robust urban structure for the region. We have identified clear advantages of paying attention to urban structure. These involve several things.

1. Enhancing the movement of people and goods into, out of, and across the region.

2. Moving the region forward as an environmentally sustainable territory

3. Improving the liveability of the region especially through reductions in commuting times and distances

4. Providing the benefits of urban concentration through the promotion of the region's key urban centres

5. Improving the region's competitive spaces through the provision of well-provisioned employment lands, business parks and other specialist business and industrial spaces; and thereby build concentrations of successful, jobs generating producers

6. Nurturing the region's moves to build dense networks of co-located and connected enterprises

7. Enlivening the Metropolitan Strategy's City of Cities vision including by the generation of a new spatial diagram for the metropolitan area which captures Western Sydney's aspiration to be a world class regional economy that supplies quality jobs for its residents.

The infrastructure strategies

The infrastructure strategies are drawn from state government priorities as well as from pre-existing submissions and policies of the key regional agencies.

The strategies seek infrastructure enhancement in the following ways:

- Enhanced labour market access both to jobs within the region and to external labour markets
- Enhanced infrastructure provision to employment lands including the sub-regional centres
- Major public transport expansion and upgrades
- Extensions to the orbital motorways systems alongside major upgrades to arterial roads
- Significant new investments in freight handling and interchange infrastructure and facilities.

The governance strategies

Getting the governance mechanisms right for the implementation of the employment strategies could well be the most crucial part of the overall quest to meet the employment creation targets. Of course, the most important quality of an effective governance system is its power to secure the desired achievements. Yet power to get things done is in many ways an intangible quality that is difficult to design for and implement.

Our strongly held view is that the governance system that underpins the employment strategies we propose in this report must acquire and build for itself the very qualities that we urge on the region as a whole. In this sense, then, we see an effective governance system as having these qualities:

- continuously temporary
- operationally and resource efficient
- coalitional
- transparent and engaged
- risk embracing
- broker and facilitator
- flexible.

Executive Summary

Our model for an effective governance system comes from recent thinking on systems management called 'adaptive co-management.' Adaptive co-management is iterative, based, in human systems, on learning through feedback loops between individuals, institutions, policies and practices.

So our starting point for the implementation of the proposed employment strategies is not the appointment of a major body to overseer the implementation process – because as we explain this would be an impeding move – rather it involves the selection and co-option of existing Western Sydney organisations and stakeholders as sets of partnerships to commence the implementation of specific strategies and, critically, involve these organisations and stakeholders in processes which have the potential to broker new partnerships, develop and take-on new ideas and devise simpler, or more complex, governance mechanisms that get the job done more effectively.

The governance system then, like the region itself, becomes a learning system. On the one hand it builds within its members highly valuable expertise and skills in brokering and organising. This equips those involved in the governance process to move progressively with the advances of the region's knowledge and innovation activities and achievements.

1 Introduction

1.1 The nature of the task

This report responds to the employment goal in the NSW government's Metropolitan Strategy which seeks the creation of 280,000 net additional jobs in Western Sydney by 2031. The report is prepared by a consortium led by the Urban Research Centre at the University of Western Sydney. The report generates employment strategies for two of Western Sydney's three sub-regions, North-West and West-Central (figure 1.1). The report is commissioned by the Western Sydney Regional Organisation of Councils and its project partners. The project is funded by the NSW Department of Planning.

The Metropolitan Strategy's target of 280,000 net additional jobs in Western Sydney by 2031 is based on maintaining the early 2000s ratio of jobs self-sufficiency for Western Sydney in a context of ongoing population growth. The jobs targets translate into a net additional 130,000 jobs for North-West sub-region and 61,000 net additional jobs for the West-Central sub-region. The equivalent jobs target for the South-West sub-region is 89,000. On the surface the targets are a simple aspiration seemingly achievable by a continuation of the region's jobs growth trend.

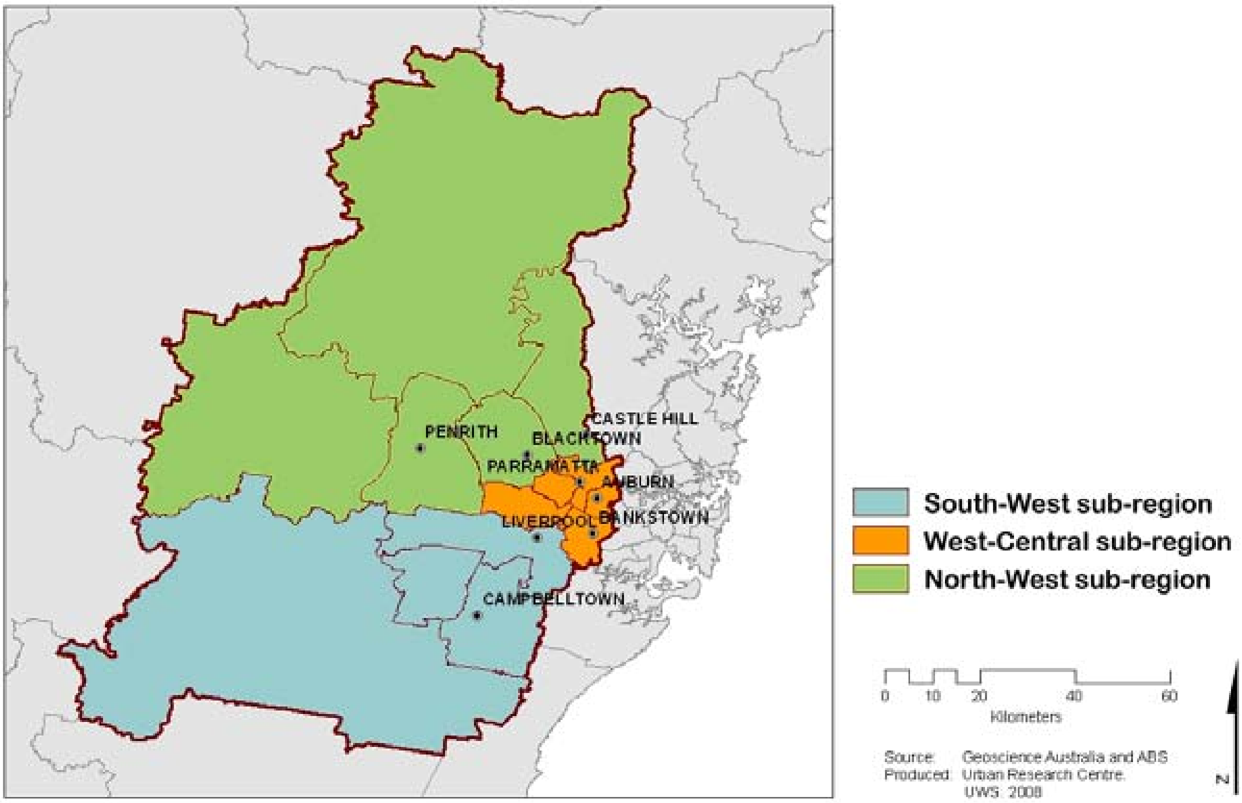
Achieving the targets, however, will be very difficult. As we explain in Box 1.1, achieving a target of 235,000 net additional jobs by 2031 – the extant target at the time of our simulation – is not possible if the rates of jobs creation and jobs destruction experienced between 1983 and 2001 are applied to the next 25 years. Moreover, as we explain in chapter 6 of this report, the economy of Western Sydney and the region's labour force are not as yet structured in ways that maximise the region's employment outcomes.

There is an obvious and widely acknowledged need for the Western Sydney regional economy to diversify. In particular, this should involve a sectoral shift such that the region's economy attains a critical mass of higher value adding professional and business services activities. Some of this activity is growing as the advantages of a Western Sydney location induce back-office developments in the region. However, it is also necessary for the region to develop a significant presence of locally-generated businesses that specialise in high value added services provision. In the finance sector, for instance, while there are obvious advantages in undertaking support functions in Western Sydney for

1 Introduction

Sydney CBD-based firms, there are substantial extra benefits available as a result of the development of an enduring finance sector which is controlled locally and thereby undertakes financial services activity – borrowing, lending, advising etc. – for the local economy as well as for clients external to the region. In other words, the region needs to become a place where financial services are an integral part of the economy, not just a place where services are performed at a competitive price for financial activity elsewhere.

Figure 1.1 Sydney's planning sub-regions



Our work shows that a strongly growing national economy will not on its own be sufficient to generate the targeted number of jobs for Western Sydney. The evidence from the last decade shows that strong national growth and falling unemployment rates, including in Western Sydney, have not been accompanied by the sorts of structural shifts in the Western Sydney economy and its labour force needed to provide the regional economic platform necessary for its next phase of jobs generation.

This transition has become even more important in the context of a world economy that has been shocked by the sub-prime mortgage crisis and subsequent credit and liquidity crises. Western Sydney's narrowly composed economy, with a workforce averaging lower levels of training and skills, has higher levels of vulnerability to external shocks. This vulnerability can be alleviated by attention to implementation of the strategies we urge in this report. The region should not be allowed to experience an amplitude of economic change which sees it suffer disproportionately during economic downturn. Paying attention to re-engineering the Western Sydney economy through attention to building 21st century standards in the region's infrastructure, urban structure and territorial competence has the potential to remove Western Sydney's structural disadvantage.

Moreover, the present economic crisis should not be seen as the time to delay expenditure on the infrastructure, urban structure and territorial competence measures that are urgently needed. Unfortunately, these have been allowed to decay during the economic boom of the last two decades. Further decay during a period of economic downturn will exacerbate Western Sydney's unequal household labour market and income status and diminish severely the region's chances of reaching the employment targets identified in the Metropolitan Strategy.

At the same time, and like the rest of the world, the region cannot avoid confronting the economic challenges and changes required by national and international responses to global warming. Box 1.2 explains the particular vulnerability of the Western Sydney economic region to global warming and society's responses to this global environmental crisis. Of particular importance is the disproportionate impact the region will potentially bear as a result of its economic concentrations in manufacturing and transport industries and because of the high levels of car-based commuting undertaken by the region's workers. Of course, responses to global warming also have the potential to create economic opportunities and Western Sydney must be equipped to take full advantage of these.

Wary and pessimistic views of the future aside, Western Sydney has not been immune from the processes of economic adjustment. The region has been at the front line of adjustments to the liberalisation of the Australian economy over the past three decades. In some cases it has led an embrace of globalisation and has enjoyed the rewards of successful ventures into the global economy.

In a sense, there is no alternative to constructing an optimistic view of the future. Perhaps the intensity of de-industrialisation that hollowed out so much of Western Sydney's manufacturing industry in the 1980s and early 1990s is unlikely to be repeated over the next 25 years. In addition, the surviving firms may well have transformed into a critical mass of producers and there is some evidence of their expressing a gravity-pull effect on industrial and distribution firms from other regions. Moreover, there are encouraging success stories of firms involved in more knowledge intensive production activity with the potential for new growth opportunities for the region.

Not unrelated, Western Sydney now has demonstrated success in establishing and building successful business park environments, notably at Norwest Business Park and Sydney Olympic Park. These parks have been responsible for the generation of a large number of high-end professional and business services employment. As a consequence there are informed calls for the development of new large-scale business park capacity in the region.

Western Sydney's major regional centre, Parramatta, has similarly reached critical mass and appears now to be ready to emerge as an independently growing metropolitan business centre. At last, there is now a model for the development of a successful regional city in Sydney away from the downtown CBD. Western Sydney's other regional centres could well be poised to emulate Parramatta's success as growth intensifies in their environs.

Finally, the imperatives of strong policy reactions to the threats of global climate change may well produce competitive spatial advantages for Western Sydney businesses. Rising energy prices could force a shortening of supply chains creating cost advantages for local producers. In association, government awareness of the need to react decisively to the threat of global climate change could be a significant trigger to increased provision of much needed transport and communications infrastructure, again with the potential for significantly enhanced competitive outcomes for Western Sydney firms.

All this said, the region must now confront an economic world which is ever shifting. New opportunities for competitiveness are less likely to arise from policy measures that focus on production and trading conditions in selected economic sectors, as were the thrust of national economic adjustment and competitiveness strategies in the 1980s and 1990s. As we observe in Chapter 3, successful advanced economies at both urban and regional scales are increasingly those economies which operate from territorial platforms that nurture and build favourable business and living environments, a highly skilled labour force, strong knowledge and innovation systems, and supportive networks across and beyond the region.

These territorial platforms can be nested and adjoining. You don't necessarily compete with your neighbour any longer. Western Sydney enjoys the location advantage of a co-existence with the global Sydney city-region, one of the world's most transformed urban economies of the last two decades – its current malaise notwithstanding – and the major portal into Australia for the flow of new migrants with valuable skills and rich cultures. Western Sydney also enjoys advantageous geographical placement within the Australian national economy, the developed world's standout economic growth economy of the last two decades. The Western Sydney region has not experienced the stagnation and disinvestment that have become problems in some of the nation's capital cities and older industrial regions in recent times.

Knowing that the competitiveness of a region over the next two or three decades and beyond will be territorially based and derived gives clear direction to the employment strategies Western Sydney must pursue. While attention to sectoral competitiveness remains important, the economic planning priorities for Western Sydney must give priority to the construction of an enduring, sustainable, competitive territorial platform.

This report seeks to propel this idea with recommendations for action in three areas:

1. The region's platform of territorial competence
2. The region's infrastructure
3. The region's urban structure.

We explain this three-fold focus via a discussion of 'the diagram' in the section below.

Together, our recommendations in respect of territorial competence, infrastructure and urban structure seek to identify ways to strengthen the assets and operation of Western Sydney's urban economy. Getting the functioning of the region's urban economy right is the key to successful income, employment and wealth generation in the decades ahead. And central to this task is attention to competitiveness, sustainability and quality of life as if they were inseparable. The three must be addressed simultaneously. This is the essence of the successful 21st century urban economy anywhere in the world.

Accordingly, we propose the following seven goals to guide the direction of the Western Sydney regional economy over the next 25 years, in general; and as well as the development of specific strategies for Western Sydney's North-West and West-Central sub-regions.

1.1.1 Key goals of the strategies

1. To ensure the region is composed in ways that enhance its economic development, such that the region functions as an ongoing generator of employment, income and wealth with an enduring capacity for dynamic efficiency, being the capacity to re-engineer from one successful economic configuration to another over time. That is, the region has to be constructed as a springboard – or platform – for growth and prosperity.

The following goals for the strategies stem from this first or prime goal:

2. To build the region's platform of territorial competence

3. To build the region's infrastructure advantages

4. To build the region's urban structure advantages

5. To maximise the diffusion of competitive advantages accruing to individual producers and clusters of producers

6. To create world best practice sustainability outcomes especially in
   a. the adjustment practices of firms in the sectors most affected by policies to address global climate change; and in
   b. commuting to work.

7. To ensure that meeting employment growth targets coincides with enhanced labour market access especially for
   a. those ethnic groups with a history of impeded participation
   b. women
   c. hard-to-place groups.

1.1.2 Principles that guide the report's directions

Our arguments for change are developed systematically through the report. Here we emphasise some features of our thinking. Central to our view is that long term regional development prospects are best served through the encouragement of dynamism, especially though learning, innovation and continuous adjustment. A corollary of this is that a region must consciously avoid perspectives that are naïve, nostalgic and reactionary; and it must vigorously reject the responses that might be propagated by those who hold such perspectives.

We argue that there is a strong case for openness. Western Sydney has embraced international and inter-regional competition throughout its history. The region no longer has significant concentrations of industries that rely for survival on international trade protection or government assistance. A closed region, or one that is propped up by subsidy, becomes reluctant to engage in wider economic integration and becomes subject to circular and cumulative downward economic spirals. On the other hand, inter-regional and international trade generate multiplied improvements in income and employment, as well as skills development and avenues for local innovation through skills transfer.

Our conclusion is that openness and connectedness must accompany strategies that attempt to build local strengths.

In this context, strong local collaborations among producers, both as industry clusters and in innovative territorial formations and agglomerations, are highly desirable. These business formations produce economies of scale for enterprises along a production chain. They enhance innovation rates. And they generate competitiveness.

There is a need, then, to balance the encouragement of intense local linkages with the development of long-distance networks and linkages.

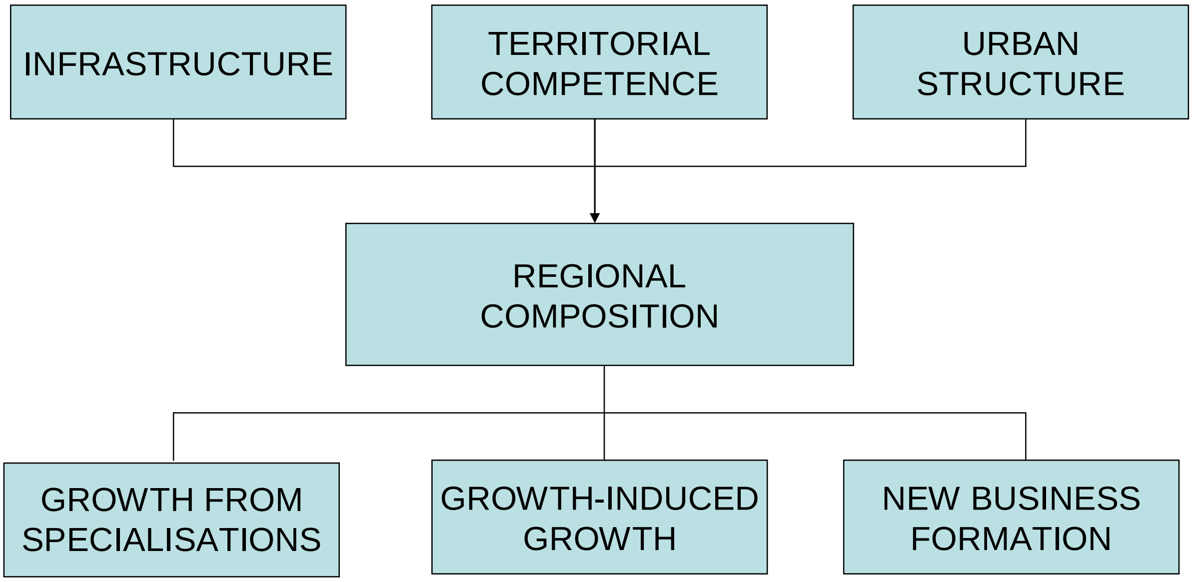
1.2 The diagram

In this section we explain 'the diagram', a major representation of our thinking in both our analysis throughout this report, and in the generation of employment strategies.

1 Introduction

Referring to the ways economies operate, British geographer Doreen Massey famously observed that nothing much happens, bar angels dancing, on the head of a pin. The Western Sydney regional economy is no exception. The diagram in figure 1.2 is our understanding of the way that the Western Sydney regional economy is composed. We now tease out the understandings underpinning our diagram.

Figure 1.2 The diagram



We start with the box labelled 'regional composition'. This box reminds us that economies are not givens; they do not arrive in black boxes with their characteristics intact or pre-ordained. A regional economy, like a book or a piece of music, is composed. It has individual events, sequences, combinations, players, ensembles, orchestrations, rules and regulations, tempos, amplitudes, directions, audiences, critics, histories, variations and imagined future performances. Some of these are deliberately designed; others evolve according to preferences, practices and decisions at different times and by different players or composers.

Getting a regional economy, like Western Sydney, to perform in a way that produces a desired outcome – in this case, the generation of 280,000 net additional jobs by 2031 – requires an understanding of the composition of the regional economy as it currently exists. It then requires the generation of new ideas about how the regional economy might be composed in the future so as to produce the desired directions and outcomes.

1 Introduction

Our diagram says that the most important attributes of the composition of the Western Sydney regional economy are 'territorial competence', 'infrastructure' and 'urban structure'. Together these provide the regional economy with its overall territorial platform. It is important to acknowledge that territorial competence, infrastructure and urban structure are not discrete entities or categories. As we demonstrate in chapter 2, there are elements of the regional economy that could be placed in different categories to the ones we place them in for the purposes of this study. We shouldn't be concerned by any such perceived misplacement, though, as our categorisation is to a large extent arbitrary, being designed in the main to develop a better understanding of the ways the Western Sydney regional economy generates jobs; and how it might generate jobs in the future in order to meet the targets of the Metro Strategy.

Our diagram points to three categories of impetus for the generation of jobs. One is growth itself, a category we find a very much under-used tool in the tool kit of planners and economic development practitioners. Economic growth in Western Sydney will come from population growth. The sectors that are naturally population-growth related also happen to be key employers in Western Sydney: retailing, construction, certain manufacturing sectors, health services, education services, community services, personal services as well as certain parts of the accommodation and food services sector. So too parts of the wholesaling, transport and logistics industries grow directly as a result of urban expansion due to population growth.

On its own, though, growth from population growth will not build a strong, diverse economy. The Western Sydney regional economy, as it has done in its history, needs to sustain a set of specialised competitive industries. These specialisations are crucial to the success of a regional economy. One reason for this is that they generate external income flows, with their higher rates of income and employment generating multipliers. Another is that specialist industries tend to have higher rates of innovation and learning which then become available for local dissemination.

Our approach to this study is to recognise the separate, though complementary, impetuses that can be sourced from both population growth related and specialist economic activity.

Of course, whatever its impetus, new business formation is critical to growth; and so we include this as a separate box in our diagram. While acknowledging recent in back office investments in Western Sydney, new business formation is vital for the development of a diversified, enduring, successful Western Sydney regional economy.

1.3 Outline of the document

Following this introduction we present our thinking, analysis and strategy recommendations. **Chapter 2** shows our thinking and understanding of the issues in a more detailed fashion. We use the diagram to divide our deliberations with separate sections on each of the diagram's elements. In **chapter 3** we draw on international literatures and understandings to support our arguments for a strong concerted construction of a knowledge and innovation based territorial platform as the basis for a sustainable, jobs generating Western Sydney regional economy in the coming decades.

Chapter 4 and **chapter 5** then ground our concepts and understandings through a detailed analysis of the Western Sydney regional economy. Our emphasis here is on the two sub-regions, West-Central and North-West. We show the growing level of intra-regional differentiation that is developing in Western Sydney and the challenges posed by this differentiation for the development of better jobs outcomes for the region.

Chapter 6 is a systematic dissection of the region's labour market performance over the past decade. The first part of the chapter summarises the main findings. The second part is a comprehensive analysis of changes to each industry and occupation sector, sub-divided to metropolitan, regional, sub-regional and local government area (LGA) levels. The analysis is a feature of our report and should be seen as a rich resource for further analysis and policy development over the years ahead.

In **Chapter 7** we explore the issues of unemployment and hard to place labour in the sub-regions as well as for Western Sydney in general. We include this chapter to emphasise that, in spite of recent levels of economic prosperity, there remains an historical entrenchment of social disadvantage and inequality in Western Sydney because of differential labour market access and participation. Our concern is that it is insufficient to pursue an aggregated jobs target without attention to how these jobs are distributed. Obviously, those who are seen to be least productive in a modern knowledge based economy are going to be those with the least skills, the lowest levels of educational achievement and the most limited labour market experiences. Our analysis draws attention to the need to address the impediments faced by the unemployed and the hard to place within the jobs generating strategies.

Chapter 8 presents our evaluations of the Metro Strategy targets and sets the pathway to our development of jobs generating strategies. **Chapter 9** undertakes an analysis of the sub-regions' infrastructure needs, drawing on the NSW government's infrastructure plans in its State Plan. **Chapter 10** shows the critical nature of spatial formations in Western Sydney and the ways these need nurturing into structurally essential components of any future competitive territorial environment for business. **Chapter 11** is a systematic presentation of our employment strategies, again using our diagram to direct and steer our recommendations. **Chapter 12** then translates these strategies into specific sub-regional divisions of responsibility while maintaining a perspective for government action at both state and federal levels. A feature of our work here is a detailed articulation of the Metro Strategy recommendations with our own recommendations for employment strategies for the sub-regions. The chapter also presents a summary map of the strategies.

References and other materials are appended.

It should be noted that the report is also supplemented by a specific report for each LGA. These supplements enable easy access to the bountiful material in the second part of **chapter 6**.

1 Introduction

Box 1.1 Job creation and destruction: a simulation for the Western Sydney regional economy

At one level it is an easy task to devise a scenario for the achievement of the Metropolitan Strategy's initial target of 235,000 net additional jobs for Western Sydney by 2031. Turning 595,000 jobs in Western Sydney in 2006 into 830,000 jobs by 2031 could be seen as requiring an average annual growth rate in the number of jobs of 1.04%. This rate is less than the annual growth rate in the number of Western Sydney jobs for the period 1996-2001 (2.025% p.a.) and for the period 2001-6 (1.05%). The presumption could be made, then, that a continuation of the growth of the past decade would see the jobs target for Western Sydney met.

There are two problems with this simplistic scenario. One is that the last decade is probably not a good guide to the full range of economic conditions to be experienced by Western Sydney over the next 25 years. The last decade was characterised by uninterrupted national economic growth without major external economic shocks and without recession or even economic stagnation. It is reasonable to assume these sorts of less favourable economic conditions will be experienced internationally and by the Western Sydney economy at various stages during the period to 2031. Indeed, there are now strong signs that the next few years will be dominated by low or negative levels of economic growth.

The second problem with a simple extrapolation from the last decade is that such a scenario makes an unrealistic assumption about the constitution and performance of labour markets. Labour markets do not grow in a straightforward linear and incremental fashion. Irrespective of the condition of an economy, jobs are always being created and destroyed. Jobs growth occurs when the rates of job creation in a region exceed the region's rates of job destruction. Hence, to know the possible pathways for the Western Sydney regional economy to yield the Metro Strategy's employment targets requires a knowledge and understanding of the region's labour market turnover, or churn.

Mitchell et al (2005, 2006) have calculated the rates of jobs creation and destruction in the Australian economy for the period 1983 to 2001. We see this period as a reasonable guide to labour market change in Australia over the next 25 years given it covers the recent past, and incorporates a range of economic conditions and cycles; all in a general climate of favourable national economic growth and performance. Indeed, a reproduction of the net growth rates for the period 1983 to 2001 may be seen as a highly favourable outcome for the national and Western Sydney economies over the next 25 years.

Table 1.1 shows the national rates of job creation and destruction for the 1983-2001 period. The table breaks aggregate job creation and destruction rates into part and full time jobs and into three broad sectors: goods production, wholesale and retail, and other services.

Table 1.1 Rates of job creation and destruction in the Australian economy, 1983 to 2001 (percent)

	Goods production		Wholesale and retail		Other services	
	FT	PT	FT	PT	FT	PT
Rate of job creation	1.4	4.8	1.5	2.2	1.4	2.8
Rate of job destruction	1.5	3.9	1.2	1.1	1.0	1.3

Source: extracted from Mitchell et al, 2005

We have applied the Mitchell et al rates of job creation and job destruction in a simulation of growth and churn in the Western Sydney region. This simulation is based on the reasonable assumption that jobs turnover in the Western Sydney region approximates the rates for the nation as a whole.

We use the Mitchell et al rates for each of the 'goods production', 'wholesale and retail' and 'other services' sub-divisions to simulate full time and part time jobs turnover for the Western Sydney region for the 25 year period 2006 to 2031. These are the three broad sectors and jobs divisions used in the Mitchell et al analysis. Our three-sector simulation provides a textured understanding of the ways labour markets are currently evolving under Australian economic conditions. The results are shown in table 1.2.

The simulation alerts us to the possibility that the rate of net job production in the Western Sydney region could fall well short of the target of a net increase of 235,000 jobs if the economic conditions from 1983 to 2001 are a reasonable guide to the period 2006 to 2031.

Aside from our finding of a major shortfall in the aggregate number of jobs to be accumulated by 2031, our analysis also reveals a number of major labour market understandings, trends and conditions that warrant consideration. A primary understanding from our work is that labour markets experience considerable turnover, or churn. The simulation described in table 1.2 shows that a net increase of 33,489 full time jobs by 2031 – as well as 96,218 additional part time jobs – would require in total the creation of 600,274 new full time jobs alongside the destruction of 566,784 old full time jobs. Our simulation shows, then, that the net yield from new full time job creation for the Western Sydney region, then, might not be considerable.

Table 1.2 Simulated job creation and destruction in Western Sydney regional economy, 2006 to 2031 using Mitchell et al job turnover rates

Item	Goods production	Wholesale & retail	Other services	Total
FT employment 2006	123,016	68,446	230,864	422,326
PT employment 2006	20,386	46,934	104,810	172,130
Total employment 2006	143,402	115,380	335,674	594,456
Creation rate FT 1983-2001	0.014	0.015	0.014	
Creation rate PT 1983-2001	0.048	0.022	0.028	
Total created FT 2031	174,145	99,311	326,817	600,274
Total created PT 2031	65,821	80,865	209,041	355,726
Destruction rate FT 1983-2001	0.015	0.012	0.010	
Destruction rate PT 1983-2001	0.039	0.011	0.013	
Total destroyed FT 2031	178,489	92,228	296,067	566,784
Total destroyed PT 2031	53,054	61,697	144,757	259,508
Net additional FT 2031	-4,345	7,084	30,750	33,489
Net additional PT 2031	12,767	19,168	64,284	96,218
Net additional total 2031	8,422	26,251	95,034	129,707
Total FT 2031	118,671	75,530	261,614	455,815
Total PT 2031	33,153	66,102	169,094	268,348
Total employment 2031	151,824	141,632	430,708	724,163
Deficit from target (+235,000)				105,293
Deficit in jobs growth rate				40.3%

Source: Original calculations based on rates in Mitchell et al (2005) applied to ABS labour force and census data

Moreover, Mitchell et al find that in the goods production sector (manufacturing, mining, construction) the national rate of job creation was very slightly less than the national rate of job destruction for the 1983-2001 period. From the simulation, based on rates from this national experience, Western Sydney could well suffer a net fall in the number of jobs in its goods producing sectors over the next 25 years. If realised, this will be a significant labour market issue since manufacturing industry with 99,267 jobs in Western Sydney in 2006 is the region's largest employment sector, while construction with 37,423 jobs is its sixth largest employer. Such a potentially negative outcome places major pressure on the services sectors in Western Sydney to be the major providers of the region's net employment growth.

In addition to these compositional effects, and as noted above, our simulation suggests that a continuation of the economic trends of the past two decades will be insufficient to achieve the employment targets for the region in aggregate. Indeed, we observe that the net employment growth rate during the 1983-2001 period (0.8% p.a.) was 40.3% less than the growth rate (1.34% p.a.) required to reach the Metro Strategy target of 235,000 net additional jobs for Western Sydney, irrespective of the full time or part time status of these jobs.

Yet, as we explain above, these aggregations disguise the multitude of things that go on in labour markets in the real world. One is the growing division of the labour market between part time and full time jobs. As table 1.2 shows there are substantial differences in job creation and destruction rates across the groups of sectors according to full time or part time status. For example, the rate of part time job creation (2.2% p.a.) nationally in the retail and wholesale sectors 1983-2001 was nearly 50% higher than the rate of full time job creation (1.5% p.a.) in these sectors for this period, while the rate of full time job destruction was almost identical to the rate for part time job destruction. In the 'other services' groups part time job creation (2.8% p.a.) outstripped full time job creation (1.4% p.a.) by 100% with, again, comparable rates in full time and part time jobs destruction.

Disappointingly, the full time/part time disaggregation is ignored in the Metropolitan Strategy and in the subsequent sub-regional plans. These documents refer simply to a target number of additional jobs. There is no reference in the documents to the processes of labour turnover or to differential rates of net job growth (or decline) across the various economic sectors, nor are targets broken into the basic full time and part time sub-categories.

Two implications of this analysis are drawn. First, the process of achieving the jobs target will be very difficult. As is shown in chapter 6, the compositional structure of the Western Sydney labour market has not shifted sufficiently over the last decade in ways that would make the region better situated to take advantage of national economic growth cycles in the coming decades. In other words, we cannot expect the full quota of required Western Sydney jobs to be achieved simply by a reliance on sustained national economic growth.

Second, the nature of the composition of the Western Sydney labour market sees it likely to experience a disproportionately high growth in part time employment and a disproportionately low growth in full time employment. An implicit assumption in the initial jobs targets for Western Sydney in the Metro Strategy documents is that the target of 235,000 net additional jobs for the region would at the very least reproduce the region's existing full time/part time jobs ratios, being currently at 72 full time jobs per 100. This assumption builds on a community expectation that jobs growth for the region is for the purposes of building Western Sydney's regional self sufficiency in employment and income as the region absorbs a high share of Greater Sydney's population growth over the next two decades. Yet our simulation shows that of the net 129,707 jobs growth generated (using 1983-2001 growth rates) only 33,489 of these jobs would be full time, while net part time jobs growth would be much higher at 96,218. In other words, based on insights from the simulation, the likely direction of labour market change in Western Sydney over the next 25 years based on the region's existing economic and labour market composition would not meet the reasonable full time jobs growth expectations of the community unless a major reconfiguration of the region's economy takes place.

Box 1.2 Responses to climate change policies

Western Sydney will face adjustments to climate change policies in at least four major domains, each with significant employment implications. One will be the direct impact of carbon permits or taxes on the region's producers. Western Sydney is arguably Australia's largest manufacturing region with a high proportion of firms in the tradeable goods sector of the economy. We suspect many of these firms have significant carbon emissions profiles. So too the region has a major concentration of transport and logistics firms where the basic ways business is transacted will change substantially as climate change response programs are implemented. An emissions trading scheme or a carbon tax is designed explicitly to change the way carbon polluters produce; or to diminish the size of their respective sectors. Western Sydney carbon polluters in the manufacturing and transport sectors cannot expect immunity from these impacts.

The second will be the changes that will take place to the ways goods move in, out and across the region. Western Sydney is the prime destination for Sydney's goods traffic performing the major role in logistics handling, wholesaling and distribution in each of the metropolitan area's international, interstate and NSW regional supply chain linkages. Road freight transport is the most significant transport mode in these operations. It is reasonable to expect that this industry will undergo major transformation as climate change responses are enacted, requiring considerable changes to the ways goods are moved and handled in the Western Sydney region.

The third will be changes that are forced on car-based commuters from the region. Currently, based on work by the Urban Research Centre (2008) for the NSW Department of Planning, Western Sydney has an extremely high rate of car-base commuting. Table 1.3 shows the time currently spent daily by 361,011 full time Western Sydney workers in commuting to places of employment. Table 1.4 shows the distance travelled by these full time workers. Table 1.5 shows the mode of transport used by Western Sydney's full time workers in their daily journeys to their place of employment.

Calculations based on table 1.3 show that the estimated weighted average of time spent by full time Western Sydney workers in daily commuting daily was 61.6 minutes. Moreover, 23% of Western Sydney's full time workers spend more than 100 minutes daily in journey to work while 39% spend more than 70 minutes daily in commuting.

Table 1.3 Duration of travel to work in GWS for full time workers, per journey

Duration (mins)	Total Commuters	% Commuters
up to 15	104,010	28.81
>15-20	29,982	8.31
>20-35	88,036	24.39
>35-50	54,769	15.17
> 50	84,214	23.33
Total	**361,011**	**100.00**

Source: Urban Research Centre 2008

Table 1.4 Distance of travel to work in GWS for full time workers, per journey

Distance (km)	Total Commuters	% Commuters
<5	47,695	13.22
>5-10	60,112	16.66
>10-15	50,706	14.05
>15-25	84,388	23.39
>25	117,942	32.69
Total	**360,843**	**100.00**

Source: Urban Research Centre 2008

Table 1.5 Mode of transport in GWS for full time workers, per journey

Modes	Total Commuters	% Commuters
Bike	1,454	0.40
Bus	6,371	1.74
Ferry	143	0.04
Taxi	8,168	2.23
Train	57,873	15.82
Vehicle driver	261,046	71.37
Vehicle passenger	22,173	6.06
Walk	8,541	2.34
Total	**365,769**	**100.00**

Source: Urban Research Centre 2008

Alarmingly, 79.7% of commuting for full time work in Western Sydney is undertaken by motor vehicles, consisting of 71.4% as drivers, 6.1% as passengers and 2.2% in taxis. Clearly, moves to lower private vehicle use as part of greenhouse gas reduction initiatives will only be successful if they involve substantial changes to commuting patterns for Western Sydney workers.

The fourth area of adjustment will come from induced changes to consumption patterns. As noted in the Garnaut report on climate change,

> "Market-based approaches seek to alter price relativities in a way that reflects the externality embedded in goods and services - that is, direct and indirect emissions arising from the production and distribution process. Consumers are left to choose whether, when and how to substitute from high to low carbon intensive products. As they do so, firms begin responding to new consumption patterns by investing in alternative technologies and new products." (Garnaut 2008, p. 342)

Garnaut insists, then, that we should expect significant shifts in the goods producing sectors as a result of responses to climate change. It is reasonable to expect that the introduction of an emissions trading scheme or a carbon tax will generate considerable change in the Western Sydney regional economy due to the region's heavy involvement in the good producing sectors.

That said, we also refer to the jobs generating opportunities that arise from responding positively to global climate change mitigation measures. Hatfield-Dodds et al (2008, for CSIRO) note that achieving a transition to a low carbon sustainable economy "will require a massive mobilisation of skills and training" (p. 1) but that a successful response to the climate change issues will deliver a "triple dividend of greater wellbeing, cost-saving and greater competitiveness" (p. 2). Responding positively to global climate change, then, may well provide a major stimulus and positive changes in the good producing sectors in which the Western Sydney regional economy specialises. The chances of a positive outcome, though, depend critically on policy consciousness that positive sectoral outcomes have to be steered into the regions, in this case to Western Sydney, where the costs of adjustment will be concentrated.

Box 1.3 The benefits of local agglomerations

There is no single formula for competitiveness. Successful enterprises rarely emerge when they are isolated industrially or territorially. This is one of the major understandings from the regional development literature over the last two decades. The benefits from being part of a local agglomeration of producers arise in ten ways.

1. An agglomeration provides easy access to valuable information. Some of this information is specialist, relating, for example, to a production process or a design trend. It could also be place-based information enabling producers easy access to information about regulatory processes, labour market conditions and consumer market trends.

2. The presence of this atmosphere of information, as it was famously called by British economist Alfred Marshall in the late nineteenth century, comes at low or nil costs, a critical production consideration in an era when few production environments are detached from the effects of global competition.

3. Successful neighbouring enterprises become readily available benchmarks. Even where adjoining enterprises are from other economic sectors, they provide readily observable best practices in generic areas such as human resources management, accounting and IT systems, and marketing techniques.

4. The presence of successful enterprises nearby brings a perspective about future competitiveness that encourages managers to resist hyperbolic discounting – that is, the tendency to opt for smaller dividends or rewards in the present and thereby forgo opportunities for larger gains in the future. Being able to observe the ways that firms reap the rewards of innovation and investment for the future encourages similar practices in otherwise conservative or inward-looking enterprises. In other words, in successfully agglomerated productive communities, the future is embraced in the present.

5. Agglomerations raise the level of concentrated transactions in transport and logistics, finance, information and telecommunications technologies, labour hire, office supplies and so on, being the transactional domains engaged in by all firms. Such concentrations, of course, provide even the smallest of firms with opportunities to access economies of scale. Perhaps as importantly,

though, being engaged in these transactions provides access to all the information flows that are embedded in them: information about supply chains, market access, sources of finance, developments in information technology and so on.

6. A critical mass of local producers can build internationally competitive advantages that would otherwise be beyond the reach of an individual enterprise. Hence, what might otherwise be an import-competing industry, one that jealously guards a local market, can emerge as a successful exporting sector.

7. The labour market advantages of local agglomerations can be very important. A successful agglomeration will attract a long term stable labour pool, where the ongoing enhancement of skills development is normal and, thereby, becomes institutionalised; and where recruitment becomes a local exercise freed from the need to search other regions for suitable talent.

8. Even though local agglomerations also experience raised levels of competition between firms for local labour, the movement of workers between firms becomes extremely beneficial in the transfer of knowledge and skills as well as in building strategic knowledge of external markets.

9. The persistence of a critical mass of successful enterprises encourages the development of supportive institutions including employer associations, research and innovation centres, and labour training colleges and services.

Together, the positive habits engendered by agglomeration become the prerequisites for a region's dynamic efficiencies, being the capacity of a region to engineer its economic transition through time thus avoiding the development of negative industrial and regional path dependencies. Path dependent economies are characterised during times of economic restructuring by high levels of sunk costs, socially unacceptable levels of labour dislocation and, very often, regional stagnation or decline.

2 The key understandings that inform and guide the project

2.1 The context

This chapter situates the study within the key dimensions of the Western Sydney regional economy relevant to the generation of jobs for the region over the next twenty five years. The chapter commences with the Fagan et al study of labour market conditions in Western Sydney in the early 2000s, a key document for commencing our work in this project. The chapter then interrogates the key elements that compose the Western Sydney regional economy. We start with urban structure, drawing attention to the ways that the Metropolitan Strategy has conceived Sydney's urban structure – particularly its configuration of Sydney's urban centres and their roles in generating successful economic activity – and how a different configuration might enliven the pace of job creation in Western Sydney. We then turn to infrastructure to emphasise the crucial role urban infrastructure plays in urban economic success in general and thereby in the specific case of Western Sydney. We conclude with an introduction to the issue of what we call 'hard to place' labour, groups that are marginally attached or impeded from entering the active, fully engaged workforce. We return to specific matters to do with hard to place labour, consequences and alleviation measures in chapter 7.

2.2 The employment profile study 2004

This development of employment strategies for the North-West and West-Central sub-regions in this study is based on detailed analysis of the contemporary outer suburban economy and also informed by key understandings from previous WSROC-funded research on the employment profile of Western Sydney (Fagan et al., 2004). The earlier WSROC study demonstrated that Western Sydney is a distinctive Australian suburban region for five reasons.

1. With a population close to 2 million in 2006, Greater Western Sydney (GWS) ranks among Australia's largest urbanised regions.

2. Seventy per cent of net population growth in the Sydney Metropolitan Area (SMA) between 2001 and 2006 took place in GWS, a trend which will continue over the next 20 years despite policies promoting urban consolidation in 'established Sydney' and the widespread

misunderstanding that urban consolidation in Sydney will involve increased residential densities inside older inner suburban neighbourhoods.

3. Western Sydney forms an integral part of Sydney's urban economy, the outer suburbs linked to inner parts of the city through daily economic, social and cultural flows plus longer-term movements of people and businesses around the city.

4. While the Metropolitan Strategy recognises GWS as a crucial part of the future urban economy, this complex outer suburban region still competes for the NSW government's urban planning attentions and infrastructure investments against inner parts of the metropolis, especially the Sydney CBD and the city's so-called 'global economic corridor', also knows as the 'global arc'. This area is identified by the Strategy as extending from Macquarie Park in the inner north-west, through North Sydney and the Sydney CBD to Botany Bay with its port and international airport precincts. The 'arc' has become an important feature of Sydney's contemporary urban structure (especially in the language of urban structure), linking high concentrations of knowledge-intensive financial and business service jobs and clusters of regional headquarters for globally-linked firms surrounded by concentrations of high-status, high-income residential areas. Sub-regions along the 'arc' recorded the strongest employment growth of all metropolitan sub-regions (1996 to 2001).

5. A focus on global Sydney and the arc, however, can produce a mindset which overlooks the importance of GWS to the daily workings of the global city or, worse, fosters a belief that somehow outer suburban areas are marginal to or absent from it. The Fagan et al (2004) study points to the urgency of developing new understandings about the geography of Sydney's urban economy based on accurate observations of the way it is composed; and which reposition and elevate Western Sydney in the mindsets of decision-makers and opinion leaders in both public and private sectors.

No urban region in Australia of comparable size to GWS exhibits these characteristics. While being a crucial part of a dynamic global city economy, Western Sydney lags in a range of knowledge-based activities, social infrastructures and urban governance mechanisms present in cities like Adelaide or Perth which have much smaller populations.

2.2.1 Regional jobs self-sufficiency

The 2003 study showed that the suburbanisation of manufacturing and service sector jobs has been substantial since the mid 1980s. As a result, whereas in 1981 59% of Greater Western Sydney's residential labour force found work within the region, by 2001 64.3% of GWS residents worked regionally. Based on estimates from the NSW Transport Data Centre's Household Travel Survey, this proportion had stayed virtually constant at 63.7% by 2006. This stagnation concurs with a stagnation in the ratio of total Western Sydney jobs to Western Sydney workers, an issue we describe in more detail below.

On one hand, then, a trend over two decades towards labour market regionalisation, and some reduction of longer-distance commuting from suburbs to centre, can be seen as a promising outcome given future inevitable rises in the costs of commuting in private motor vehicles and, in 2008, the beginnings of a national policy framework to curb emissions of greenhouse gases where Australia's outer suburban regions will be called on to play a significant role in climate change mitigation measures.

On the other hand, though, the regionalisation process was clearly concentrated between 1981 and 1996. Since then the proportion of residents working in GWS has changed very little. Yet the increasing regionalisation of the outer suburban labour market in the 1980s and 1990s, coupled with inadequacies in provision of rail and bus services within the western suburbs, has produced voluminous daily cross-hauling of workers in Western Sydney largely in private motor vehicles.

Despite whatever regionalisation of employment was observable at the time, however, the 2003 study warned us not to lose sight of the one-third of resident workers in GWS commuting to jobs outside the region especially from inner western LGAs of Auburn, Bankstown and Parramatta but also from Baulkham Hills. As well as working in adjacent LGAs to their east and south, resident workers from these LGAs now commute in significant numbers to jobs in the Sydney CBD and other employment zones such as Macquarie Park (Ryde), especially professional and managerial workers in business service jobs. In addition, significant numbers of workers commute each day from eastern Sydney to jobs in Western Sydney, particularly into job-surplus LGAs of Auburn, Bankstown and Parramatta, mostly from adjacent eastern LGAs but also from Sydney's north shore, especially in the case of Parramatta's business service jobs. Flows of workers from outside GWS into outer LGAs like Blue Mountains, Hawkesbury and Camden were very small.

Despite the growing complexity of commuting trips, especially by motor vehicle (see chapter 1, box 1.2), the largest daily outflow from GWS in 2001 remained to the Sydney CBD especially of workers from the West-Central LGAs of Auburn, Parramatta and Bankstown but also of managers and professionals living in Baulkham Hills in the North-West despite poor transport connections to the Sydney CBD from that LGA. Commuting flows out of and into GWS are inevitable in an open metropolitan economy especially where a significant proportion of younger, often better-educated residents, seek higher wages and better career paths available in eastern parts of the city, including the Sydney CBD. Such income opportunities help ease household impacts of high mortgage repayments but also, crucially, help build skills and experience within Western Sydney, an important part of regional competitiveness for future growth of knowledge-intensive jobs.

The 2003 study highlighted the importance of creating sufficient net employment growth in Western Sydney to serve its growing residential populations over the next 30 years – even if simply to maintain current levels of regionalisation. The study found that in 1971 GWS hosted only 67 jobs for every 100 workers resident in the region. Given the large numbers of workers from eastern Sydney commuting into then job-rich manufacturing zones around the head of Parramatta River and in Bankstown, suburban areas further west remained what urban analysts used to call 'dormitory suburbs'. This stereotypical view of the outer suburbs was buried, however, by suburbanisation of jobs after 1980.

Suburbanisation of large numbers of jobs towards available industrial lands, growing markets and expanding labour forces of Sydney's west affected both manufacturing and service industries. By 1991, 78 jobs were located in GWS for every 100 resident workers, a dramatic change over 20 years. A significant finding of the 2003 study, however, was that after a decade of further suburbanisation and, in LGAs like Parramatta and Baulkham Hills stronger growth of business service jobs than in most parts of the 'global arc', by 2001 employment 'self-sufficiency' had fallen to 76 jobs per 100 resident workers in GWS overall. Moreover, this ratio was unchanged by 2006. Such a stagnation in jobs self-sufficiency since the early 1990s, despite an unprecedented period of economic growth both nationally and in the metropolitan economy, now presents planners with a major challenge for developing future employment in Western Sydney given the growth in the region's domiciled labour force that we know will occur over the next 30 years.

2.2.2 Manufacturing industry

The net growth of 6.5% in manufacturing jobs between 1996 and 2001 further entrenched GWS as one of Australia's principal manufacturing regions. The supply of industrial land was a major feature of Sydney's urban structure by 2001 when GWS held about 75% of Sydney's potential industrial land. Development of this land in relation to transport and other infrastructure, and against pressures from demands for future residential estates, had become a significant issue made more complex by a blurring of the distinction between industrial activity and producer services. This tendency has increased as manufacturing, computerised warehousing and producer services have sought to converge in mixed use employment zones, notably the Norwest Business Park in Baulkham Hills.

Hence in the two decades prior to 2001, manufacturing was a net driver of employment growth in GWS taking into account both net employment created in factories and growth of jobs in local linked service industries, especially business services for whom regional manufacturing firms remain the most important market. Yet net growth of manufacturing jobs across GWS from 1996 to 2001 resulted from the complex patterns of job-creation and job-shedding discussed in chapter 1 (box 1.1). The employment profile was already de-industrialising by 1991 in the West-Central sub-region with job-shedding concentrated in larger branch plants in metal trades industries, transport and industrial equipment. This shedding often involved workers whose skill levels and wages were above average for those blue collar jobs remaining in manufacturing. By contrast, new manufacturing jobs grew more often in small and medium-sized enterprises (SMEs). In outer areas much new manufacturing directly served demand from the growing outer suburban markets, notably in processed foods and residential construction materials. The fastest growth-rates of manufacturing jobs from 1996 to 2001 were recorded in outer LGAs like Camden and Hawkesbury, admittedly from small bases, while manufacturing employment also grew in Baulkham Hills because of the significant impact of Norwest. By 2006 job shedding trends in manufacturing in the inner LGAs had once again overhauled job creation in these outer areas and, overall, manufacturing jobs in GWS experienced a net fall of 8.3% between 2001 and 2006.

2.2.3 Services

Service industries also suburbanised their employment after the mid 1980s, driven by growth in demand from both a growing regional population base and from a growing regional SMEs sector including those in manufacturing. The 2003 study showed that for across-the-counter services, including retailing, community and personal services, the share of total metropolitan employment in GWS had clearly begun to converge on the proportion of the city's population resident in GWS (47% by 2006). We can expect future population growth will continue as a jobs driver in these sectors, as per our argument in the discussion of our diagram of regional economic composition in chapter 1.

Compared with eastern Sydney, however, and especially the global economic corridor, jobs in information-based services remained underdeveloped in GWS. By 2001 only 17% of metropolitan financial and business service jobs were located in GWS compared with 51% of Sydney's total manufacturing employment. Clearly, GWS was continuing to lag well behind inner parts of Sydney in one of the most dynamic components of the metropolitan labour market. Alone among the 14 LGAs in GWS, Parramatta LGA, hosting Sydney's second CBD, had developed a strong focus on business service jobs by 2001. It also remained a leader in retailing employment and hosted the SMA's largest single concentration of health sector jobs, notably around Westmead hospital complex. A detailed account of these concentrations and deficits is contained in chapter 6 of this report.

Yet the 2003 study also made three important observations about employment in the services sectors.

1. Despite Parramatta's important role as a retail centre, Blacktown LGA had emerged with the largest number of retailing jobs in GWS by 2001, reflecting its growing regional role in the supply of consumer goods and services as well as the provision of wholesaling services. Blacktown also showed an emerging concentration of public sector jobs as its major activity centres delivered public services of various kinds especially to populations growing in its immediate environs and to its west.

2. Largely because of Norwest, Baulkham Hills showed faster growth of knowledge-intensive business service jobs than Parramatta – indeed, one of the SMA's fastest growth rates from 1996 to 2001 notwithstanding concentrations of such employment in the 'global arc'.

3. The inner western LGA of Auburn developed a distinctive new retailing structure emerging as a metropolitan centre for retailing motor vehicles, domestic appliances and home wares. Yet the LGA also showed substantial growth in business services including computer-related

activities and security firms. The central administrative and distributive role of areas around Homebush and Auburn, including the newer employment concentrations at Sydney Olympic Park, will be an important dimension of Sydney's future urban structure.

One important message from the 2003 study, therefore, is that processes of employment growth and decline – job creation and destruction – operate simultaneously and, by the mid 1990s, their interplay had begun to reduce the ability of the Western Sydney regional economy overall to continue to generate net employment growth faster than growth of the region's residential labour force. This trend is apparent again between 2001 and 2006. As we explain by reference to our diagram, the composition of GWS's economy has been a key reason for this inadequacy.

2.2.4 The labour market experience

The 2003 study also showed that labour market experiences of residents in GWS reflect the region's overall employment profile. Compared with the rest of the metropolis, higher proportions of resident workers in GWS held jobs in manufacturing and construction. Retail workers were important in all LGAs while only Baulkham Hills and Parramatta LGAs even approached metropolitan averages for workers in the finance and business services; which, as we note in chapter 6, have been a key national driver of both GDP and employment growth over the past two decades. Workers in the finance and business sectors have been significantly under-represented in all other LGAs in GWS. By 2001, tradespeople, production workers and lower-skill clerical and service workers were significantly over-represented in the GWS workforce compared with metropolitan averages, except in Baulkham Hills, while professional workers, managers and administrators were significantly under-represented everywhere except, again, Baulkham Hills.

Our analysis in chapter 6 shows a continuation of these under and over sectoral representations over the decade from 1996 to 2006. Despite anticipating these clear trends, however, the 2003 study also revealed substantial changes over time with the proportion of residents working in manufacturing continuing to fall steadily throughout GWS except in the least industrialised outer LGAs. Auburn, on the inner fringes of Western Sydney, experienced the most significant fall. Overall, the residential labour force of GWS de-industrialised faster than the region's employment profile – being the actual number of jobs located in the region – between 1991 and 2001.

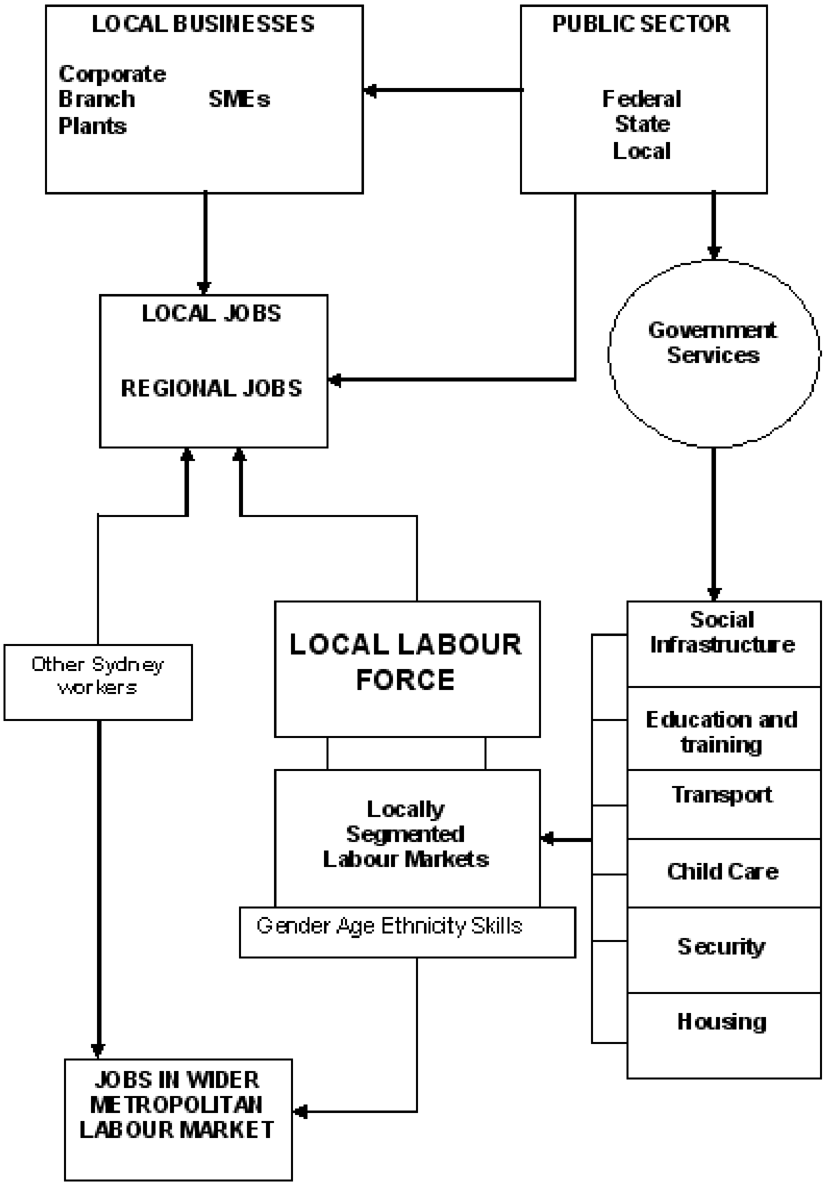
2.2.5 The model of labour market access

By 2001, employment opportunities for Western Sydney residents were affected strongly by their age, gender, ethnicity and levels of qualification and experience. For example, poor access to social infrastructure such as childcare seemed to significantly reduce job opportunities of primary carers, still mostly women by 2003. For a significant number of women in GWS, entry to waged work still comes through localised, casual employment where part time work has to be preferred over full time work because of domestic responsibilities despite some resurgence of growth in full time jobs in the region. Further, in combination with gender and age, people from some ethnic – culturally and linguistically diverse – groups were clearly encountering problems of gaining access to jobs growing within either their local area or within adjacent parts of GWS. In 2001, there was perhaps no clearer example of this than Auburn LGA which showed some of the highest levels of metropolitan unemployment and lowest participation rates, despite being surrounded by LGAs with job-surpluses and experiencing employment growth. Finally, lower than average levels of formal qualifications and technical skills and limited job experience among specific population sub-groups (see section below on hard to place labour) exerted a strong limiting influence on the accessibility of employment opportunities to many residents of GWS.

Projected rates of population growth for outer areas of GWS over the next two decades mean very significant employment growth will be needed to maintain even the present degree of labour market regionalisation which, as we note above, fell slightly between 2001 and 2006. This disappointing trend reminds us of an important qualification made by the 2003 study being that access to employment opportunities for Western Sydney's residential labour force depends on a complex mix of factors, only one of which is creation of sufficient jobs. Transport infrastructure is highly significant in this equation along with a range of social services such as education, training and child care. Poor access to these access and facilitation services contributes to shutting some groups of people in some localities out of growing labour market opportunities both regionally and in the wider SMA.

The 2003 study developed a model of access to employment (figure 2.1). The model provides a map of how to understand the importance not only of building an effective platform of systems and measures to develop regional creative capacity and competitiveness but also of developing both physical and social infrastructure. The 2003 study concluded there was a strong role for coordinated regional and sub-regional strategies for developing the infrastructure that will be so important to future employment prospects for residents of GWS. This is an important reminder as we build additional strategies for the decades ahead.

Figure 2.1 A model of access to employment in local labour markets



Source: Fagan et al (2004 p. 76).

2.3 Urban structure

As we emphasise in chapter 1, urban structure is too often neglected as a core contributor to the economic composition of a region. Yet when it is poised in our diagram alongside territorial competence and infrastructure, its lead role in the composition of a region's economy is readily exposed.

2 The key understandings that inform and guide the project

In one sense, the role of urban structure in the generation of desirable economic outcomes is easily observed. Cities around the world have common, identifiable and labelled structures: the central business district, the commercial zones, industrial districts, residential areas with differentiated characteristics, recreational sites, entertainment precincts and so on. Beyond such basic landuse zones, though, urban structure can be used as a device to engineer desired economic and labour market outcomes.

Historically, urban structure evolved as an interaction between commercially developing spaces and the tendency for economic enterprises to take advantage of clustering generally for ease of access to urban-based pools of labour and for access to critical masses of consumers. The ideal-type or classic pattern suggests that towns and cities developed a hierarchy of interdependent centres. At the top of the hierarchy were large, higher-order centres which offered the most expensive goods and at the bottom were the smallest centres which concentrated on the provision of convenience goods. The distribution of production activities followed a similar pattern with larger scale enterprises located in the largest centres where access to highly skilled labour, sophisticated capital funding flows, quality management capacity and supportive business services were more likely to be found.

As the processes of urbanisation have become more complex, however, the role of government in engineering urban structures and networks has become more pronounced. The nature and provision of infrastructure, for instance, have profound impacts on urban structure. So too do the nature and intensity of broadband communications access, the quality of education and training services, intersections with international and internal migration flows, the operation and affordability of housing markets and so on. The behaviour of government and other formal institutions have significant effects on all these domains and therefore on urban structures.

We emphasise here the role that conceptual or imagined maps of urban structure play in steering the actions of governments and formal institutions in building the urban form and function. A simple example is the idea of the Sydney orbital road system. The idea of an orbital road system was conceived as early as 1944 before its formalisation as a state government policy in the 1962 County of Cumberland planning scheme. Its fruition with the completion of the M7 motorway and then opening of the Lane Cove tunnel in 2007 represents physically, then, a long series of political, institutional, real estate and property development decisions and actions that were guided fairly unproblematically by this imagined structure of a Sydney roads system.

2 The key understandings that inform and guide the project

Our argument in this report is that we may well be in the process of steering the growth of a 21st century metropolitan-wide structure of Sydney through an uncritical adoption of the 'global arc' as the driver of the Sydney basin economy, and, therefore, as the core component of the Sydney region urban structure around which other components are structured and function.

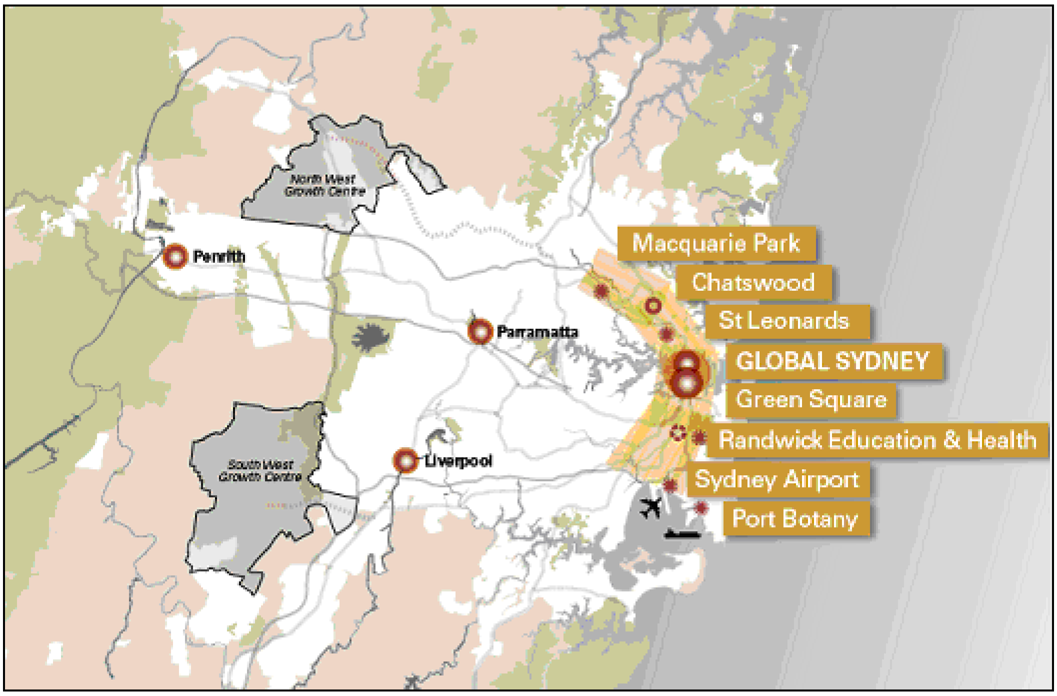
In this conceptualisation of Sydney, it becomes common sense for priority to be given to nurturing activities, infrastructure and services within the global arc. Moreover, within the conceptualisation, other parts of the city are seen to survive best by playing a supporting role to a thriving global arc, these other parts getting their rewards from flow-on or trickle-down effects from the income and employment generating successes of a prosperous globally-engaged Sydney – located, of course, in the Botany Bay to Macquarie Park arc. The recent expansion of office space density for the redevelopment of the Barangaroo precinct is one illustration of the power of the arc metaphor in driving, in this case, government planning approvals.

For western Sydney, then, the dominance of the arc in government thinking about Sydney as a whole has the potential to relegate the region to shadow and dependent status. A clear demonstration of the way the conception of the arc produces a limited view and, therefore, role for western Sydney is provided by the maps of urban structure drawn from the Metropolitan Strategy document (2005). The sequence of figures from figure 2.2 to figure 2.6 show the way the global arc produces a particular economic and spatial configuration for Sydney with a concentration of high value added professional, financial and business services in the eastern and inner suburbs becoming a natural feature of the city's economic landscape rather than something produced by the political and institutional decisions of the city's more powerful stakeholders. Quite ridiculously, the images show a sequence from concentrations of high value added services activity in the arc to a stretch of manufacturing and logistics to the west. Here western Sydney is presumed not just to have a concentration of manufacturing and logistics activities but is shown as having no economic specialisations or concentrations other than manufacturing and logistics. The representation of Sydney as a city of cities in figure 2.6 is obviously thin, undeveloped and unrelated to the more powerful representations based on the dominance and worth of activity within the global arc.

An observer of these maps might find it bemusing that 'city of cities' is the headline title of the Metropolitan Strategy. A city of cities view of Sydney requires the aspiration for a set of independently viable and thriving regional cities and major centres performing distinctive and complementary roes in the Sydney basin economy. We support this aspiration. A city of cities view of Sydney, supported by concerted government strategies for its enactment, gives prominence to the central role of urban structure in driving successful, desirable economic composition. As such, we see a city of cities aspiration as conflicting in many ways with the global economic corridor/global arc representation. Choosing a city of cities pathway involves a deliberate decentralisation of the globalised sectors into western Sydney.

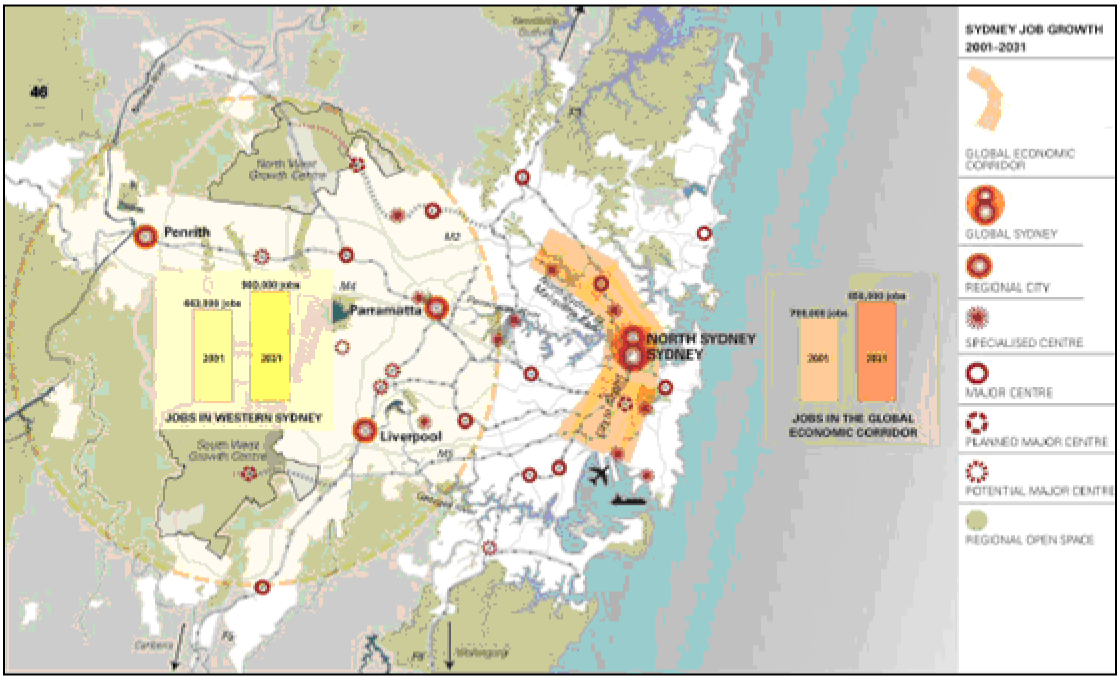
Our recommendations within the category of urban structure in chapters 11 and 12 of this report seek to address the disadvantageous nature of the global arc metaphor especially in respect of its limited aspirations for a diverse competitive economy for Western Sydney.

Figure 2.2 The Metropolitan Strategy's representation of Sydney's global economic corridor (a)



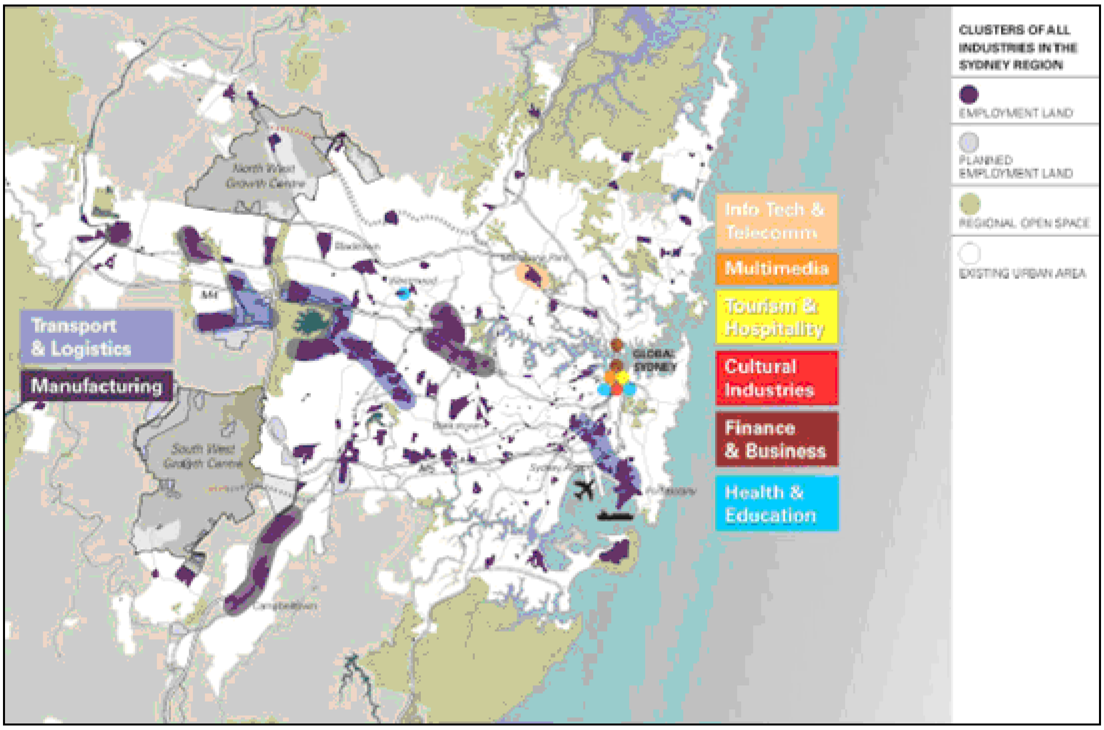
Source: NSW Department of Planning (2005b p. 108)

Figure 2.3 The Metropolitan Strategy's representation of Sydney's global economic corridor (b)



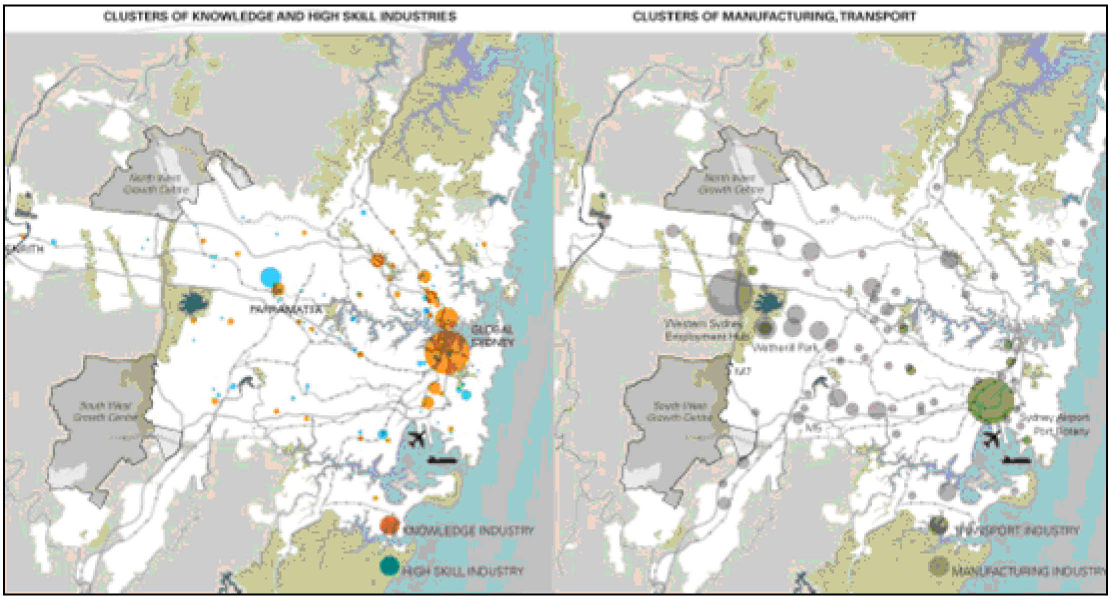
Source: NSW Department of Planning (2005c, p46)

Figure 2.4 The Metropolitan Strategy's representation of Western Sydney



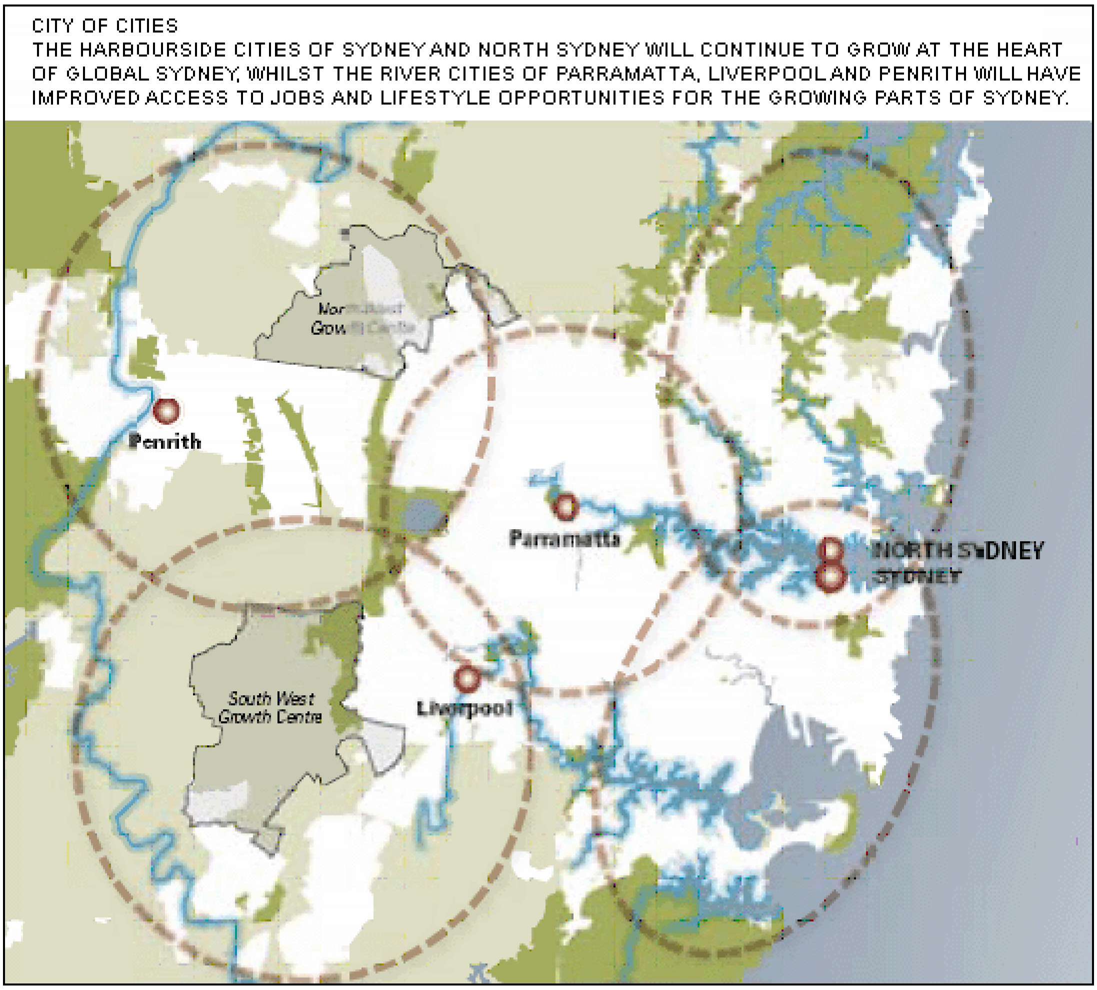
Source: NSW Department of Planning (2005c, p48)

Figure 2.5 The Metropolitan Strategy's allocation of roles arising from its global arc fixation



Source: NSW Department of Planning (2005c, p49)

Figure 2.6 The Metropolitan Strategy's representation of Sydney's global economic corridor (c)



Source: NSW Department of Planning (2005a, p8)

2.4 Infrastructure

As we have argued, the successful composition of a Western Sydney regional economy depends on the quality of its infrastructure.

A way of thinking about cities is to think about them as an infrastructure network. People, companies and institutions are attracted to cities by the density and efficiency of this infrastructure network.

In the case of Sydney, the infrastructure network has grown from the traditional centre of the city. Invariably, though, the density of the infrastructure network decreases as you proceed in any direction from the Sydney CBD. This is associated with the historical pattern of growth which focused in the east of the city first, the withdrawal of government from the provision of infrastructure in the most recent periods of Sydney's suburban expansion and an arguably inner Sydney focus of decision-makers.

While this pattern of behaviour may now be changing, it is clear that the lack of appropriate infrastructure provides a barrier to the effective economic development of the two sub-regions under consideration. While metropolitan planning in Sydney, including through its most recent strategy, has generated some excellent blueprints for the development of Western Sydney, the inability of the plans to deliver appropriate infrastructure has limited their ability to deliver their visions. There is no reason to suggest that the current strategy is any different: without the delivery of appropriate infrastructure the regional employment targets are unlikely to be realised. This is particularly the case in the context of increasing oil prices and an era of concern about climate change where the traditional reliance on the motor vehicle will not provide efficient, effective or sustainable urban outcomes.

Given this framework the study attempts to identify some key elements of the infrastructure network that need to be provided in Western Sydney to build a platform for economic development.

Chapter 9 provides a detailed assessment of the infrastructure needs of Western Sydney in respect of its employment generating role. Here we conclude our discussion with some thoughts on the nature of infrastructure itself and its relationship to the importance of constructing a platform of territorial economic competence.

2 The key understandings that inform and guide the project

There is much that is indeterminate about the idea of 'territorial competence' which could explain its growing popularity in the how-to manuals of international regional development literature. Our goal here is to talk about territorial competence measures in the composition of regional economy as something of substance. Much of this substance comes from the co-existence in a successful region of strong territorial competence measures alongside efficient, supportive hard infrastructure. Infrastructure plays a vital role in the economic success of any territory, large or small.

Uniquely, infrastructure is a public-capital good which gives it the quality of universality. Infrastructure thus carries the implication of universal or, at least, non-exclusive access. Infrastructure is designed to integrate a city and its sub-regions, link the city to other places, add cohesion to social and economic communities and provide positive externalities, ideally free of charge. Quality infrastructure also counteracts or minimises the negative externalities of economic and social activity in a city – like traffic congestion, excess demand for water and energy, and slow communications speeds. Infrastructure, then, is vital to a region's economy and critical to the circumstances in which individual enterprises compete successfully, just as it is crucial to broader urban social and cultural life.

A central characteristic of successful infrastructure in a region is the extent to which it is appropriately bundled. Bundling refers to the delivery of items of infrastructure in braided channels so that access to any infrastructure item guarantees access to others, and so that all infrastructure items can deliver publicly in complementary fashion.

Together, universality and bundling produce and enforce the principle of access. Together, universality, bundling and access produce an efficient, reproducible rhythm in daily economic life for enterprises and workers. In contrast, when infrastructure lacks universality, bundling and reasonable access, the economic system labours. In particular, the things that we label as 'territorial competence' measures of the region become impeded in their functioning.

On the other hand, when infrastructure functions effectively in a bundled manner, positive externalities are generated. These are the benefits that flow to those outside the parties involved directly in accessing infrastructure at any point in time or space. In the case of infrastructure, positive externalities can flow across the wider economic and social community. A quality water and sewerage system, for example, produces a safe, hygienic city and a healthy population and workforce. A functioning electricity grid simultaneously lights and heats homes, just as it provides vast access to industrial power for manufacturers. A road system with appropriate capacity in conjunction with an efficient public transport system means arterial roads are free from congestion for both freight movements and householder journeys not catered to by the rail or bus network.

Infrastructure, then, for Western Sydney must be thought of as a public good with the potential for making all producers more efficient, of improving access to Western Sydney householders to jobs, of distributing positive externalities as broadly as possible, and for providing active functional networks and connections across the region and externally. Chapter 9 makes these ideas more explicit while chapters 11 and 12 deliver detailed initiatives specific to the infrastructure sector.

2.5 The platform of territorial competence

We place 'territorial competence' at the centre of our analysis in order to stress the critically important ways in which the territorial characteristics of a region build its economic competitiveness and hence its economic and labour market composition. We see the following as critical characteristics of a successful platform of territorial competence for Western Sydney:

1. It produces intensive rates of innovation
2. It facilitates enterprise formation
3. It makes finance available in appropriate forms and amounts
4. It nurtures an effective skills development and training regime
5. It ensures access, opportunity and equity in labour markets
6. It builds strong engaged relationships between the business and non-business communities
7. It supports a lively creative arts presence
8. It enhances the region's liveability, including in the availability of appropriate affordable housing
9. It has efficient, sustainable transport and telecommunications connections across the region and externally
10. It mobilises diversity as an asset
11. It promotes dynamic efficiencies through maximising positive externalities of doing business in the region and minimising both individual enterprise and collective sunk costs.

An appropriate platform of territorial competence for Western Sydney, then, encompasses a raft of initiatives that support successful enterprise. These initiatives will affect the region's economic activity through the following groups:

1. Business formations. These are critical to territorial competence. Business formations must include critical masses of networked firms, in strong value-adding configurations with shared participation in materials flows, labour and product markets, and in knowledge development and sharing

2. Business spaces. The platform of territorial competence must incorporate a range of appropriate enterprise spaces including regional centres, business parks, specialist precincts and dedicated employment lands

3. Participants. Territorial competence, in the end, is the sum total of the competencies of a region's participants: its firms, workers, customers, government and other formal institutions, non-government institutions and the region's communities themselves. The platform of territorial competence gives common purpose to these participants

4. Operational environment. The platform of territorial competence brings together the region's economic participants and its operational environment to produce successful enterprise. The operational environment is a complex formation. It includes the region's historically assembled assets – you have to start from where you are.

   Obviously the operational environment also includes hard infrastructure, which we separate into a category – 'infrastructure' – which have we dealt with above and elsewhere.

   The operational environment also includes soft infrastructure especially health, education, community and relational services. Attention to soft infrastructure is very important since, as we argue elsewhere, the business conditions of a successful 21st century economic region cannot be separated from the quality living conditions of the region's inhabitants.

   It includes, too, the region's population character: its ethnicity, demographic structure, income distribution and diversity.

Finally, the operational environment includes the region's institutions and its policy development frameworks. No enterprise is capable of successful operation without the supporting mechanisms that come from the institutional and policy settings that build the economic world in which the enterprise functions

5. Context. Like location in the housing sector, context for an economic region is everything. Here Western Sydney is strategically located to receive positive growth and development benefits from its geographical circumstances These are its position within a rapidly growing metropolitan area, its intersection with urban growth along Australia's eastern seaboard, its insertion into an ongoing international migration stream and its location within one of a small number of genuine global cities in the Asia Pacific region rivalling Singapore, Hong Kong, Shanghai, San Francisco and Vancouver as a key node for processing global flows of information, ideas, people, finance and cultural activity.

2.6 Hard to place labour

The Australian economy faces growth constraints due, to a significant degree, to capacity constraints in the form of inadequate infrastructure and tight labour markets, especially for skilled workers. At the same time there are over 450,000 unemployed Australians and a larger number still who could be said to be underemployed. This is a fundamental conundrum that vexes those grappling with economic and labour market policy.

While the Australian government remains officially committed to full employment, full employment is no longer regarded as zero unemployment (see Hughes 2008). While the Reserve Bank Act s10.2 retains the maintenance of full employment within the RBA's Charter, the focus of monetary policy is almost exclusively on targeting inflation and maintaining financial stability. In this context, policy makers have tended to accept some degree of unemployment as being a 'natural' feature of a functioning economy. Just what the 'natural rate' of unemployment should be is difficult to tie down. In June 2008 Reserve Bank Governor, Glenn Stevens, commented that the "economy is pretty fully employed" (Stevens 2008). This was at a time when the there were 470,000 persons (or 4.2%) unemployed nationally with a 65.4% labour force participation rate.

2 The key understandings that inform and guide the project

The medium-term prospect is for policies that tolerate a higher level of unemployment to 2010 and possibly beyond. At the same time, the 2008-09 budget papers indicate that the government's emphasis is squarely on increasing productive capacity rather than any further soaking up of spare capacity[1].

Given, then, that certain groups within Western Sydney which have not gained ongoing employment in the recent decade of record national economic growth are not likely to benefit from further growth in the economy, in the event it is forthcoming, attention needs to be given to strategies targeted at those whom we describe here as 'hard to place' in the labour market.

For some years the framework for economic growth adopted by successive Australian governments has been characterised as the three Ps: population, productivity and participation. In addressing those whom we might regard as being 'hard to place' in the labour market, the approach to participation becomes the critical question.

Labour underutilisation is the combination of those who are available to work but are either unemployed or underemployed. In effect this underutilised workforce represents an untapped pool of workers, what some refer to as 'spare capacity'. ABS reporting indicates, perhaps unsurprisingly, that fluctuations in the labour force underutilisation rate are closely associated with the economic cycle, although the data suggest that the unemployment rate is in fact more sensitive to variations in the economic cycle than is the underemployment rate which behaves more obstinately (Australian Bureau of Statistics 2008). Clearly, reducing the underemployment rate requires attention to more than just national aggregate economic growth rates. In May 2008 labour underutilisation nationally stood at just over 10% of the workforce nationally, being 4.2% unemployed and 6.0% underemployed. The NSW rate of 10.9% was higher than the national average.

The data on labour underutilisation highlights two groups within the workforce facing particular difficulty. First, the underutilisation rate has been consistently higher for women than for men. The trend rate for men has ranged between a high of 12.8% in August 2001 and a low of 8.4% in May 2008. The rate for women, on the other hand, varied between a high of 16.1% in November 2001 and a low of 12.3% in May 2008. This is largely due to the fact that the female trend quarterly

[1] "..the economy is now pushing up against its 'full capacity' levels of production and employment and this has been associated with an acceleration in inflation and more rapid wages growth in some regions and industries. Sustaining the economy's growth rate in the future will depend on increasing its productive capacity, rather than any further soaking up of spare capacity" (Commonwealth of Australia 2008 p. 4-3)

underemployment rate has been considerably higher than the male rate. In fact, while the trend quarterly unemployment rates for males and females have been relatively similar, the female underemployment rate has consistently been between 3.4 and 4.7 percentage points higher than the male rate.

Second, the evidence shows that younger Australians also experience disproportionately high rates of underemployment. The trend for those aged 15 to 24 shows that their rate of labour underutilisation from May 2001 to May 2008 was more than twice that for other age groups.

There is an additional perspective which focuses on the importance of educational attainment and skills among those experiencing difficulty finding a secure place in the workforce. Treasury analysis, focused on those over 25, shows that variations in educational attainment provide the most powerful explanation for variations in employment rates, an observation which remains consistent across all ages and for both men and women (Kennedy 2007).

This situation, though, is even starker for young Australians. For almost two decades, in any given year, between 14% and 16% of 15 to 19 year olds have not been in full time learning or full time work. In spite of improvements in recent years, the figure stood at 13.8% (196,200 teenagers) in May 2008. For young adults this rises to around 22% (Dusseldorp Skills Forum annual series). This means that some 526,000 (or 18%) of 15 to 24 year olds are not fully engaged. Of these, it is estimated that 306,000 (or 11%) of 15 to 24 year olds are unemployed, underemployed or only marginally attached to work.

The strong correlation between the level of educational attainment and significantly reduced labour market participation is manifest in these ways:

- Between 45,000 and 50,000 early school leavers each year are not fully engaged 6 months after leaving school
- 45% of year 11 leavers and 49% of year 10 leavers are not fully engaged
- One in three year 11 leavers and two in five year 10 leavers are not fully engaged as young adults
- 107,000 young adults without year 12 or certificate III qualifications are not in the labour force, unemployed, or working part-time and not studying.

A 2005 cost-benefit study on early schooling by Access Economics found that as pressures on economic resources, particularly the availability of skilled labour, increase in coming decades, it is crucial that the economic potential represented by early school leavers is not wasted (Access Economics 2005). More generally, there is agreement – and substantial evidence – that raising the levels of educational attainment delivers higher productivity, higher participation, lower unemployment and increased incomes and living standards.

For those facing disadvantage the focus on education will necessitate complementary support. As a senior Treasury official puts it:

> "There is strong evidence of the positive labour market effects of improving educational outcomes…this will require more than simply 'insisting' people stay at school for longer. It will require a range of policies designed to address sustained disadvantage."
>
> Kennedy (2007)

While placing the underemployed in secure, productive work is an economic benefit, Treasury acknowledges that due account needs to be taken of social returns in assessing the appropriate level of, and allocation of public funding, for education and physical infrastructure. This is the basis for proper investment in education and in skills development (ibid). We return to the issue of the hard to place labour in chapter 7.

2.7 Synthesis

This chapter has explored the components of our diagram. The lesson we draw from this exploration is not just that issues relating to territorial competence measures, infrastructure and urban structure need serious acknowledgement and attention in their own right, but that they are incapable of existence let alone success in the absence of each other.

The point, therefore, for economic and urban planners is that the three domains – territorial competence measures, infrastructure and urban structure – must be addressed in concert. Lapsed attention to one of the domains can only have the effect of diminishing the effectiveness of strategies in other domains. An effective labour training scheme, for instance, will have little impact on an isolated suburb's labour force participation rate if that suburb is isolated from job opportunities by severe traffic congestion and inadequate public transport facilities. Likewise the development of resources and facilities to promote knowledge dissemination and innovation will have inadequate flow-on effects to regional centres if they are located exclusively in centres with pre-existing competitive dominance in other parts of the city.

The following chapter explores the international understandings relating to this project. The report then turns to the empirical findings from our grounded investigations of Western Sydney and its West-Central and North-West sub-regions.

3 International understandings and lessons for Western Sydney

3.1 International understandings

3.1.1 A platform approach

As we argue in previous chapters, growth and innovation are dependent on the territorial competence, infrastructure and urban structure conditions of a region. Here we use the term 'platform approach' as shorthand for all three components of our trilogy.

Building a successful, appropriate regional platform is emphasised by the European Commission's report *Constructing Regional Advantage* (European Commission 2006) and we use a significant portion of the Commissions terminology and argument in our work here. We also draw on the recent work of the Brookings Institution particularly its *Metropolitan Policy Program*. This work is described briefly in box 3.1.

A key understanding which we emphasise in this report is also argued for strongly in the European Commission's report. This is that platform approaches have distinct advantages over sectoral approaches. The Commission (2006) identifies three major risks in adopting sectoral policies:

1. Sectors are readily displaced by capital shifts especially to low-wage nations leaving a sectoral policy in disarray

2. Inter-regional divisions of production within a sector can mean that innovation and knowledge transfers favour other regions over the local region, whereas local knowledge spillovers are limited

3. Sector-based planning often fails to recognise the emergence of new sectors or new cross-sectoral activities.

While, as ever, deciding what sector to pick to provide advantage – and, therefore, deciding what sectors not to promote – is a fraught process. In contrast, a platform approach enables a region to build scope and flexibility. Intrinsic to the platform approach is the nurturing of competitive production systems, integrated innovation systems and the development of connectivity. A platform approach also encourages the development of multi-purpose and generic technologies capable of translation into a wide variety of production settings.

Like the European Commission, we emphasise innovation and creative capacity as essential to the generation of jobs, income and wealth. Likewise, we emphasise that the long term viability of firms in Western Sydney – including manufacturing firms but also the range of services firms and agencies – requires a strengthening of innovation capacity through enhanced knowledge creation, absorptive and diffusion capacity, knowledge-based entrepreneurship and talent attraction.

3.1.1.1 Networks, connections and territorial competence

Achieving these advances requires a keen understanding of the unique geographies of production in Western Sydney. There are certainly important localised concentrations of economic activity that provide valuable local support and nurturing roles to participating producers. There are also firms that attach themselves to networks of production that extend beyond the region, often internationally. These firms secure competitive advantages through their participation in differently-scaled economic processes and activities. Our concern is not to argue that one type of business formation and networking (local, national, global, whatever) is superior. Rather, we acknowledge that there are many ways that firms secure competitive advantages. The important observation is that it is the qualities of the host region that determine the ways firms engage with the networks and, in turn, the ways that competitive advantages are secured. When the region fails to provide a platform for the successful operation of its local firms then both the operational and transformational success of firms are impeded.

In brief, then, innovation, talent-formation and entrepreneurship have to be developed in intertwined ways involving regional, national and global connectedness, to construct regional advantage. But critical to this development and interaction is the territorial competence of the host region.

3.1.1.2 A related variety approach

The issue of specialisation or differentiation is seen by the European Commission as an unnecessary choice for regions. Rather, according to the Commission, the best way forward is 'related variety'. Related variety is seen to encourage greater 'absorptive capacity' – the local adoption of innovations, ideas and skills – and the occurrence of knowledge spillovers as a normal day-to-day event. Related variety is also seen as responsible for a "more rapid diffusion of innovations among related user-producer communities" (European Commission 2006, p. 14).

Choosing related variety as a preferred way to construct the composition of the region's economy contrasts with what the European Commission calls the 'portfolio approach'. Here the variety of economic activity in a region is pretty much unrelated internally. There are limited advantages of building a portfolio of unrelated activity. One advantage, a valuable one, is that the impacts on a region of external economic shocks can be limited. This is the classic logic of building a portfolio of safe investments. The major limitation to a portfolio approach, though, is that the effect of the economic shock is to narrow the range of prosperous economic activity in a region. In contrast, a region with related variety is able to use economic shocks to adjust, transform and build new varieties of competitive advantage. The European Commission (2006 p. 45) summarises this advantage in this way: "Related variety…combines the strength of localisation economies and the diversity of urbanisation economies."

The adoption of a related variety approach also acknowledges the very open nature of the Western Sydney regional economy where there are limited numbers of regionally-based industry clusters. The related variety approach enables a simultaneous nurturing of specialised clusters as well as the assembly of distributed yet federated knowledge networks, capable of intersecting with open and globally oriented networks as well as inducing generic knowledge transfers from locally based sources.

Thus related variety encourages the building of regional competences, most of them generic, that are transferable between industries, firms and government institutions.

3.1.1.3 Knowledge transfer and regional advantage

Understanding this process of knowledge transfer, one that is facilitated by a related variety approach to regional economic composition, requires an understanding of the types of knowledge that are important in a modern regional economy.

Knowledge can be seen as having three forms:

1. Analytical

2. Synthetic
3. Symbolic. (European Commission 2006, p. 15)

These knowledge forms are used in various ways across industries and across the diversity of professional and occupational groups (see figure 2 p. 49, European Commission 2006). Moving between these types of knowledge, and crossing the boundaries between the forms of these knowledges – their tacit and codified forms, as well as the skills and qualifications of individuals and institutions that use them – is the key to building regional connectivity (European Commission 2006, p. 15).

Regional advantages depend on the construction and use of the region's knowledge bases. Often these arise from local formations. They can also arise from distributed knowledge networks, often resulting from active engagement along the value chains organised by large corporations.

Regional advantages also depend on the generation of regional carriers of knowledge. These might be for the cross-regional translation and transfer of:

a. Competences including embodied workforce skills
b. SME and entrepreneurship facilitation measures
c. Governance dimensions involved with upgrading and building regional innovation systems and creative knowledge environments.

This platform measures target the region rather than the firm, although not exclusively. Platform measures emphasise and demand an allocation of resources for learning how to innovate rather than for innovation itself.

3.2 Components of territorial competence for Western Sydney

Arising from our understanding of these foundational issues, we now propose what we see as the essential elements of territorial competence for Western Sydney. There are seven elements:

1. Geographical prowess
2. Business and people climate
3. Talented workers

4. Regional knowledge infrastructure
5. SME and entrepreneurship policies
6. Regional innovation systems
7. Effective governance systems.

We now deal with each if these in turn.

3.2.1 Geographical prowess

The geographical prowess of a region is demonstrative of its having reached a successful level of competitiveness. Geographical prowess comes from:

a. Secure access and deployment of resources, labour and capital inputs
b. Confidence in the use of state-of-the-art production techniques
c. Stable participation in supply-chain and marketing relationships.

These traits are acquired by learning and doing, and they are normalised by the adoption of best-practice operations across a region.

On its own, though, geographical prowess is insufficient to ensure a region's dynamic efficiencies; that is, its capacity to move from one set of economic circumstances to another. Successful adaptive capacity comes from having access to the full range of platform advantages.

3.2.2 Business and people climate

Territorial competence demands a supportive business environment. Importantly, this business environment is strengthened by the liveability and sustainability of a region chiefly because the key asset of a competitive business is its staff; and good staff demands quality lifestyles in a sustainable urban setting. This includes, it should be noted, the ability to travel to and from work in a reasonable time, seen commonly these days as less than 30 minutes each way, in some sort of comfort, and inexpensively.

The role of the regional platform in building a supportive business and people climate includes:

a. Enhancing the region's capacity to produce, attract and retain highly skilled labour. These are the people who play the lead roles in knowledge creation and deployment, and in innovation

b. Building the region's untraded interdependencies and intangible assets (Storper 1997) which include the knowledge transfers between firms as well as the vibrancies that successful regions build that make them attractive to mobile, talented employees, managers and entrepreneurs. Critical here is a region's social and cultural environment. A region's ability to attract qualified personnel comes from its level of cultural diversity and tolerance, the quality and affordability of its housing stock, and the levels and quality of social infrastructure and urban services – from both public and private sources – that are available.

3.2.3 Talented workers

The historical development of Western Sydney has been dominated by its role as a supplier of labour rather than other production inputs such as natural resources, new technologies or cheap finance. The future of the Western Sydney sub-regional economies, however, depends on the development of a set of integrated, competitive businesses that maximises the talents of existing labour and develops the conditions for attracting and developing new sources of labour.

3.2.4 Regional knowledge infrastructure

A key task of an effectively functioning regional platform is the creation and transfer of competitive knowledge. This role has a number of components.

a. Tertiary institutions provide both codified knowledge and the training programmes for people to access and deploy knowledge. Their role is in both the development of new talent and the resuscitation and retraining of existing talent. These ensure the ongoing production of new sources of quality labour as well as the retention and revitalisation of the existing labour force

b. Education and training institutions also build regional knowledge infrastructure by direct engagement the business community. Knowledge engagements here include the creation of knowledge-intensive spin-off companies, the establishment of science parks and incubators, joint research and training initiatives, and the like. We develop the university-business relationship in more detail in our discussion of infrastructure in chapter 9.

We emphasise that a regional knowledge infrastructure is a pre-requisite to a regional innovation system, which is discussed below.

3.2.5 SME and entrepreneurship policies

Successful regional economies have a mix of large, medium and small sized enterprises. The small and medium sized enterprise (SME) sector, however, seems increasingly to underpin the level of successful entrepreneurship in a region.

SMEs thrive in regional economies with support platforms that specifically nurture them. Critical to the success of SMEs are:

a. Access to appropriately structured and supervised financial capital streams
b. Availability of low-entry-cost premises with quality IT support and general amenity
c. Access to learning facilities including appropriately trained and experienced brokers and advisers in production, financing and marketing domains
d. Access to innovation resources to enable pathways to growth and competitiveness.

3.2.6 Regional innovation systems

Regions must build regional innovation systems. These are characterised by thick layers of distributed knowledge available through contact with other firms, institutions, government agencies and research organisations.

A regional innovation system emerges when there is an intersection between the operations of collaborating or clustering producers in a region with the region's knowledge generation and circulation systems, consisting of its public and private research laboratories, universities and colleges. Important to such interaction are the role of informal institutions and the development of norms, trust and routines that allow innovation to emerge and be reproduced.

Thus it is necessary to recognise the hybrid nature of regional innovation systems. Investment in formal research and training produces primarily a top-down model of innovation. This is important in establishing the infrastructure requirements for innovative activity and outcomes. That said, alongside formal or top-down innovation structures, successful regional innovation systems must encourage the development of bottom-up interactive innovation systems.

A hybrid regional innovation system allows the region to benefit from the interaction of both top-down and bottom-up systems. A successful regional innovation system goes hand-in-hand with the concept of a learning region. Here the regional innovation system becomes territorially embedded in the region such that otherwise rigid boundaries of formal institutions become increasingly porous while the ad hoc nature of bottom-up initiatives become reproducible and codified, and thus accessible to a wider regional audience.

The key parties to a successful regional innovation system, then, are firms and their industries, government and its agencies and the key research and training institutions, especially the university. The European Commission (2006) calls these the region's "triple-helix." The triple-helix plays a critical role in assembling and nurturing innovation processes and development through both formal and flexible means. We allocate a major role to the triple-helix formation in the development of employment strategies as detailed in chapters 11 and 12 although we adopt friendlier terms like coalitions and partnerships to capture the same organisational construct.

3.2.7 Effective governance systems

Regions must build strong governance systems. Strong governance has three major characteristics: collectivity, organisational strength and innovative approaches. The three characteristics bind social, political and economic actions with common purpose. Building social capital in communities, therefore, also contributes to better political and business climates. So too, more advanced administrative systems in business organisations help build more efficient and effective public administration systems, and vice versa.

Unfortunately, state bureaucratic systems of governance are rarely characterised by collectivity, organisational strength and innovation. In this report we offer a hybrid, flexible model of regional economic governance that embraces these three governance traits. Our model for an effective governance system comes from recent thinking on systems management called 'adaptive co-management.' Adaptive co-management is iterative, based, in human systems, on learning through feedback loops between individuals, institutions, policies and practices. Adaptive co-management systems are flexible, open, multi-scaled and complex, hence:

> "[a]daptive co-management relies on the collaboration of a diverse set of stakeholders operating at different levels, often in networks, from local users, to municipalities, to regional and national organizations, and also to international bodies"
>
> Olsson et al (2004, pp. 75-76)

In discussing adaptive co-management of natural resources, Olsson et al provide an overview of the institutional implications and factors contributing to systemic resilience. These include:

> "vision, leadership, and trust; enabling legislation that creates social space for ecosystem management; funds for responding to environmental change and for remedial action; capacity for monitoring and responding to environmental feedback; information flow through social networks; the combination of various sources of information and knowledge; and sense-making and arenas of collaborative learning for ecosystem management"
>
> Olsson et al (2004, p. 75)

This focus on the involvement of multiple stakeholders rests on an understanding of the need for knowledge drawn from a variety of perceptions and scales, whereby,

> "essential sources of resilience lie in the variety of functional groups and the accumulated experience and memory that provides for reorganization following disturbances."
>
> Folke et al (2002, p. 20)

This reflects a move away from an assumption of balance, stasis and order, to an engagement with the realities of uncertainty, and change. Further, resilience hinges on multiple sources of knowledge being in communication through collaborative arenas in which new and unforeseen knowledge can emerge from a latent state in response to systemic stress or surprise. In this context, governance and management shift from a focus on the provision of key deliverables, to a combination of this with, first, the generation and support of decision-making processes and structures that enable genuine multi-stakeholder communication and agency; and, second, an ability and willingness to allow informed change in the face of uncertainty.

So our starting point for the implementation of the proposed employment strategies is not the appointment of a major body to overseer the implementation process – because as we explain this would be an impeding move – rather it involves the selection and co-option of existing Western Sydney organisations and stakeholders as sets of partnerships to commence the implementation of specific strategies and, critically, involve these organisations and stakeholders in processes which have the potential to broker new partnerships, develop and take-on new ideas and devise simpler, or more complex, governance mechanisms that get the job done more effectively.

The governance system then, like the region itself, becomes a learning system. On the one hand it builds within its members highly valuable expertise and skills in brokering and organising. This equips those involved in the governance process to move progressively with the advances of the region's knowledge and innovation activities and achievements. A governance system based on a centralised command model may have initial success in making prompt decisions, providing salient advice and delivering useful services. But as its detachment from the region's day-to-day events and operations lengthens the quality of its decisions, advice and services necessarily deteriorates.

In contrast, an adaptive co-management system is explicitly designed to remain both engaged and relevant. The following initiatives are designed to build such a system as integral to Western Sydney's employment strategies.

Box 3.1 The Brookings Institution's metro policy

The recently released Brookings Institution's *Metropolitan Policy Program* (2008) is a major step in the US in the adoption of development strategies that are both urban based and innovation-based; strategies, until this move, that were predominantly European in their use and propagation.

Brookings emphasises the following:

1. The assets that drive national prosperity are overwhelmingly concentrated in large metropolitan areas.

2. Metropolitan areas are he host to the four drivers of prosperity: innovation, human capital, infrastructure and quality living environments.

3. The forces that metropolitan areas have to respond to are common: the global movement of talent; the global movement of capital; the cross-boundary nature of infrastructure networks; and the growth and drift of carbon emissions across city state and national boundaries.

4. Federal and state governments must act strategically, flexibly and in accountable ways to enhance the opportunities for leaders in metropolitan areas to realise their places' full potential.

5. Policymakers must realise that metropolitan areas are the key to solving national problems.

4 Macroeconomic geographies of Sydney

The Sydney Metropolitan Strategy divides the metropolitan area into 10 sub-regions. The rationale this division is to improve planning and economic development initiatives below the metropolitan level. The Department of Planning, in consultation with councils, has released draft sub-regional plans for most of the sub-regions including for the West-Central and North-West sub-regions. These plans provide employment and dwelling targets for both sub-regions[2]. The sub-regional boundaries were chosen because of a geographical proximity of localities and common challenges faced. In practice, however, there are significant differences within the sub-regions and a commonality of issues confronting all localities across Greater Western Sydney and the metropolitan area which transcend individual sub-regions.

4.1 The role of the sub-regions

The metropolitan economy experienced a long economic boom from the mid 1980s to 2006, punctuated by recession in the early 1990s. Since the early 1990s prosperity has been broadly shared by other advanced western economies and emerging economies such as India and China. The period has been underpinned by macroeconomic stability, globalisation and technological innovation, with high growth rates generating vigorous demand for supply inputs. The economic cycle may now be moving towards slower growth or recession which will create major economic and social challenges for Greater Western Sydney and its sub-regions.

A number of studies designate Sydney as Australia's global city, although all Australian metropolitan cities are increasing their global orientation (e.g., Searle 1996; National Economics 2001). Sydney's global status is based on the premise that the city's links with the global economy generate wealth creation and employment growth. These links include capital flows, airline services, international tourist flows, business interactions and global flows of knowledge and information. Over half of all international visitors come to Sydney (Tourism Australia 2008). Sydney is a popular location for the regional offices of Australian-based foreign companies (NSW Department of Planning 2005c, pp.

[2] The draft sub-regional strategies are based on forecasts provided by the Transport (Population) Data Centre. The draft strategies use the term 'employment capacity target' rather than 'employment forecast'. At a sub-regional level, we can assume they are the same. At a local government area, however, a higher target may be set for a strategic centre compared to the surrounding local government area, which might be set lower than the forecast. This reflects the "desire to concentrate jobs in the locations to strengthen their economic role and promote public transport use" (NSW Department of Planning, 2007, p. 29).

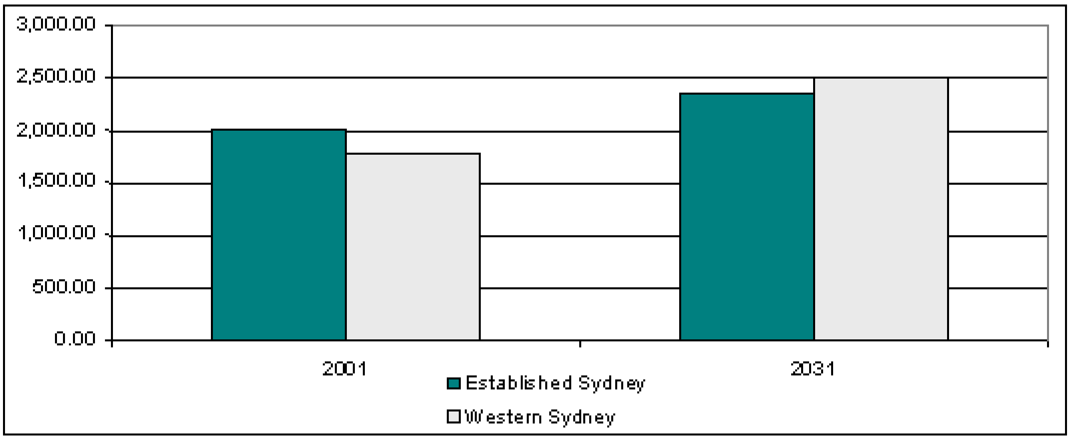
43-44). The relationship between Sydney and the global economy, particularly the growth nodes of East and South Asia, provide businesses with unique locational advantages. As the urban economy evolves it is becoming more specialised around a grouping of higher value adding industry clusters such as finance and business services, administration, and tourism and recreation.

Greater Western Sydney (GWS) shared positive outcomes from the economic boom and from Sydney's growing status as a global city. These benefits included good jobs growth, lower unemployment, high consumer demand for goods and services, and increasing real incomes. Statistical averages, however, conceal a more complex underlying story. Some areas, such as Baulkham Hills, experienced growth in employment and real incomes well above the metropolitan average while some neighbourhoods experience chronic poverty and high unemployment. There are concentrations too of areas with an over-dependence on casual and part-time work and shortages of employable skills.

Sydney is a complex city demographically. In terms of population growth, Sydney remains the preferred destination for migrants arriving in Australia and there has been a recent increase in birth rates. Yet metropolitan population growth has moderated slightly; due partially to higher housing prices, slower economic growth and the out-migration of retirees and some professionals. Sydney's total population grew from 3,948,015 in 2001 to 4,119,190 in 2006, with net growth around 660 persons per week.

The Department of Planning forecasts that metropolitan Sydney's population will increase to 5.3 million in 2031. The population of Greater Western Sydney in 2006 was 1.8 million people, which represents around 47% of the population of Sydney metropolitan area (excluding the Central Coast). A higher proportion of Sydney's population is shifting to the sub-regions of GWS compared to the more eastern areas of Sydney, which we can term, for purposes of comparison, 'established Sydney'. The population of Sydney (excluding the Central Coast) is forecast to increase from 3,792,000 in 2001 to 4,842,000 in 2031; or by 1,050,000. Of this total, 725,000 more people are forecast to reside in Western Sydney, or 69% of the total population increase. By 2031, the population of Western Sydney will exceed 2,500,000, larger than the total population forecast for established Sydney (2,339,000). With the development of the North West and South West growth centres, and other greenfields sites in Western Sydney, the growth of Sydney's population living in Western Sydney is predicted to be ongoing. Figure 4.1 outlines the magnitude of the challenge.

Figure 4.1 Population forecasts 2001-2031 ('000)



Source: NSW Department of Planning (2005d, pp. 18-21)

Western Sydney was transformed from a semi-rural region into a significant region within the Australian economy over the second half of the 20th century. The growth of Sydney continues to drive the population and employment growth in the west, however, with jobs lagging population growth. The pattern for the growth of Sydney, predominantly in Western Sydney, was outlined by the Sydney Region Outline Plan (SROP) in 1968. The SROP envisaged and planned for growth along three corridors: western – from Parramatta to Penrith; south-western – from Bankstown to Liverpool and Campbelltown; and north-western – from Parramatta to Baulkham Hills and towards Windsor. This planning framework worked well for Sydney with substantial growth occurring sequentially in the western corridor from the 1960s, in the south-west from the 1970s and in the north-west sector from the 1980s. Subsequent metropolitan strategies in 1988 and 1995 focused on urban consolidation around established areas. Yet, as with outlying areas of most large cities, population growth in Western Sydney has always outstripped employment growth. This has resulted in high economic, social and environmental costs.

The 2005 Metropolitan Strategy, cognisant of high population growth and growing demand for housing, high housing prices, and limited land resources in some inner areas, established a framework to accommodate more residential growth in Sydney's south west and north west. The Metropolitan Strategy anticipates that greenfields residential areas will develop around strong sub-regional economies, characterised by strengthening employment self-containment with more jobs for local residents (NSW Department of Planning 2005a; 2005e, pp. 8-9). The Department of Planning has embarked on a partnership with groups of councils to undertake sub-regional planning to determine the structure and future distribution of zones to accommodate housing and employment growth.

4.2 The composition of the sub-regions

The Metropolitan Strategy divides Western Sydney and its 14 LGAs into three sub-regions: North-West, West-Central and South-West. The West-Central sub-region comprises the local government areas of Parramatta, Auburn, Holroyd, Bankstown and Fairfield. The North-West sub-region comprises the local government areas of Baulkham Hills, Blacktown, Hawkesbury, Penrith and Blue Mountains. The 10 LGAs in the two sub-regions are members of WSROC, as is Liverpool, which has been included in South-West Sydney for the purposes of the development of the sub-regional plans.

The population of the two sub-regions was around 1.46 million people in 2007, or around 39% of Sydney's total population. The two sub-regions are forecast to accommodate 235,500 new dwellings by 2031, which is around 40% of all new dwellings in the metropolitan area.

4.2.1 West-Central sub-region

The West-Central sub-region is comprised of the localities of Auburn, Parramatta, Holroyd, Bankstown and Fairfield. It is centrally located in metropolitan Sydney and is the most well developed sub-region of GWS. West-Central is characterised by older homes and established industries, centres and employment lands. It is traversed by a number of important rail and road transport corridors. Parts of the sub-region, specifically Auburn and Parramatta, are very accessible to the Sydney CBD. The proximity to Sydney CBD is driving demographic change in these areas, with more younger and professional people living close to public transport connections in the sub-region. Notably, Bankstown and Fairfield are not as centrally located and have lower skilled resident populations.

West-Central is a major employment area for metropolitan Sydney. As the metropolitan area expanded in the post war period, West-Central, with large industrial estates and relatively competitive land for housing for workers, evolved as a significant industrial area. As outlined below, a significant portion of Sydney's manufacturing industries are located in this sub-region – including concentrations of petroleum and chemicals, machinery and equipment, metals and engineering, and processed foods.

Relatively affordable housing, including public housing, attracted an ethnically diverse resident population to newly developed suburbs of West-Central in the post-war period. De-industrialisation and trade liberalisation drove economic change in the sub-region in later decades, resulting in substantial job losses in traditional manufacturing industries. Ongoing industrial restructuring in traditional industries makes it more difficult for the sub-region to create net additional employment.

West-Central is the geographical centre of Sydney. Its economy has a strong manufacturing base in large industrial belts such as Clyde, Silverwater, Milperra and Smithfield-Wetherill Park. The sub-region retains competitive manufacturing industries. These industries are not experiencing employment growth, although, driven by competitiveness pressures, they are becoming more skill-intensive.

Parramatta has the status of Sydney's second CBD. It is West-Central's regional city with an increasingly metropolitan role. Parramatta was designated as Sydney's major regional centre in 1968 (see chapter 10). Supported by public sector initiatives including agency relocations, support for performing arts, investments in road and rail infrastructure and protection of heritage assets, Parramatta has performed strongly as a regional city with strengths in commercial office, cultural and retail activities.

The development of the Homebush Bay area during the Sydney Olympics provided a boost for the West-Central economy, with Sydney Olympic Park now emerging as a successful business park and activity centre. Other centres of West-Central such as Bankstown and Fairfield are developing strategies to encourage higher density urban renewal to stimulate local growth. The Metropolitan Strategy designates Westmead a specialised centre based on strategies to develop a world class health, bio-technology and research and development centre, expected to accommodate up to 25,000 jobs and 6,000 dwellings by 2031.

West-Central has been designated as an important sub-region for urban renewal. The shortage of large surplus industrial sites for urban renewal in some inner city areas, as well as political resistance to urban consolidation in inner suburbs, has focused attention on the Central West as a sub-region with potential for urban renewal. However, these pressures have the potential to erode West-Central's valuable employment lands.

4.2.2 Employment distribution in West-Central

Employment in West-Central is divided into the following locations:

1. Strategic centres with more than 8,000 jobs, including the regional city of Parramatta, the major centre of Bankstown, and the specialised centres of Sydney Olympic Park, Bankstown Airport/Milperra and Westmead

2. Employment lands accommodating manufacturing, freight and distribution and urban services

3. Dispersed jobs located in smaller centres, corridors, special use areas and in home-based work settings.

The Metropolitan Strategy and other government policies have a strong focus on new jobs in the growing areas of Western Sydney based on three elements (NSW Department of Planning 2005a; 2005e, p. 38): first, a competitive, innovative and adaptable economy capable of engaging with the global economy; second, economic spaces to strengthen industry networks and clusters; and, third, advanced infrastructure networks to support the flow of ideas, people and products.

Actions to encourage employment growth in strategic centres in West-Central include: major public investment in transport and social infrastructure, office relocations (e.g. NSW Police, Sydney Water relocations to Parramatta), major infrastructure commitments (such as the North West and Parramatta-Liverpool Transitways and the redevelopment of Parramatta Station) and detailed centre plans designed to encourage investment and diversification of these centres.

Table 4.1 sets out employment capacity targets for the strategic centres of West-Central. The figure indicates that around 54,300 net jobs in West-Central (89%) are forecast to be accommodated in strategic centres identified in the Metropolitan Strategy. This forecast incorporates assumptions of a growing shift to a service based economy, continuing loss of industrial jobs, and government policies to steer new jobs to the strategic centres.

The Metropolitan Strategy notes that Sydney has a shortage of employment lands. West-Central and the North-West sub-regions have the largest concentration of employment lands in metropolitan Sydney, with around 55% of all zoned employment lands. West-Central has major employment lands in Bankstown, Auburn-Parramatta and Fairfield (NSW Department of Planning 2007c). Most new industrial investments are occurring in greenfields areas of the north-west and south-west with the exception of a small parcel in Fairfield which is part of the Western Sydney Employment Hub (NSW Employment Lands Task Force 2006). Some employment lands - including lands for industrial and military purposes - have been rezoned for other uses, including for residential use in Homebush and Newington in West-Central (CB Richard Ellis 2003, p. 47).

Table 4.1 Employment capacity targets for strategic centres of West-Central sub-region

Strategic centre	2001	2031	Change 2001-31
Parramatta	41,500	69,100	27,600
Westmead	13,200	20,100	6,900
Sydney Olympic Park	7,900	19,900	12,000
Bankstown	10,100	14,200	4,100
Bankstown Airport/Milperra	16,300	20,000	3,700
West-Central (89% of new net WC jobs)	**89,000**	**143,300**	**54,300**

Source: Transport Population Data Centre 2008

New strategies are required to encourage economic regeneration of brownfields employment areas in the West-Central sub-region. These may include rezonings to encourage redevelopment, incentives for subdivision, amalgamations and remediation, and improvements in transport access and amenities such as childcare centres.

4.2.3 The North-West sub-region

The North-West sub-region has five LGAs: Baulkham Hills, Hawkesbury, Blacktown, Penrith and Blue Mountains. The North-West sub-region is diverse and can be disaggregated into distinct districts and places.

- The western corridor, from Blacktown through Penrith to the lower Blue Mountains, developed around the western railway line and the Great Western Highway
- Penrith centre, with its large retail catchment and distinguished natural attributes including proximity to the Nepean River and the Blue Mountains

- Western Sydney Employment Hub and the Western Sydney Employment Lands Investigation Area
- The north west sector, which stretches to Hawkesbury, predominantly concentrated around Baulkham Hills and northern areas of Blacktown
- Norwest Business Park.

The North-West is represented on global arc images of Sydney as having links to the global Sydney economy through the Macquarie Park precinct and via the M2 motorway. The North-West sub-region includes the North West growth centre with plans to accommodate 60,000 additional dwellings within its boundaries. There are plans as well for 60,000 new dwellings in existing areas of the North-West and 20,000 new dwellings in greenfields areas outside of the growth centre.

Blacktown is the largest LGA within North-West as well as the most populated local government area in New South Wales. Blacktown's economy developed around manufacturing in the 1970s and 1980s, and more recently has captured investments in the logistics sector.

Penrith is another outer area. The Penrith area has experienced strong growth in the past, but actually experienced a decline in population between 2001 and 2006. The Penrith LGA contains important agricultural industries and an increasing number of higher income residents. Penrith centre has been designated as a regional city, and is a focal point for increased public and private sector investment in office and retail jobs.

The Blue Mountains LGA is geographically constrained for housing. On the other hand, the area contains a mix of opportunities for lower income earners as well as providing lifestyle opportunities for an increasing number of long distance commuters. Hawkesbury remains a predominantly agricultural area with local service centres.

Companies located in the North-West have been attracted by relatively cheap land, the area's strategic location and reasonably supportive transport infrastructure, particularly around Blacktown and Penrith. Examples include Sony and Sharp at Huntingwood. Despite consistent employment growth in the North-West over the last two decades, unemployment in this area remains relatively high. Chapter 7 provides a detailed analysis of this issue.

Industry and occupation trends for the North-West sub-region and its LGAs are presented in detail in Chapter 6. Table 4.2 lists employment capacity targets for strategic centres in the North-West sub-region taken from the Metropolitan Strategy documents. The table suggests that 41.2% of new net jobs in the North-West will be located in five strategic centres. Discussion of these estimates is contained in chapter 10.

4.3 The key drivers

A number of external and endogenous forces is driving economic and employment change in the sub-regions. Globalisation accompanied by market-based economic policies (including trade liberalisation, financial de-regulation, privatisation, and fiscal constraints on government expenditure) and innovations in communications and transport have driven major economic and social transformations at a national and metropolitan level in Australia.

High economic growth rates and a growing knowledge base have expanded opportunities for retailing, community services, personal services, tourism and recreation, knowledge based industries and business services. Yet a high proportion of growth in knowledge-based employment particularly in finance and business services, education, multi-media and cultural industries has been concentrated in the Sydney CBD, northern Sydney and inner city areas.

On the other hand, increased exposure of the Australian economy to global competition has resulted in de-industrialisation with substantial job losses in manufacturing. At the same time, though, there has been a suburbanisation of manufacturing employment in Sydney associated with higher inner city land prices and restrictive zoning policies. This suburbanisation has produced employment growth in Western Sydney.

These larger forces create the context for growth and change in Western Sydney and the North-West and West-Central sub-regions. Western Sydney has shared in many of the benefits of the recent period of prosperous growth especially in the 1990s when Sydney's economic growth rates exceeded national rates.

The 1990s economic growth also gave impetus to Sydney's population growth rates. Sydney's high rates of population growth spilled over to Western Sydney. The population of Western Sydney increased by 4.5% between 2001 and 2006, compared to 4.0% for Sydney as a whole. Higher rates of population growth in Western Sydney are driven by higher fertility rates in a relatively younger population, more affordable housing compared to established Sydney, a greater supply of new housing stock, and improved amenities and lifestyle opportunities in some areas with good access to Sydney's major employment centres.

Table 4.2 Employment capacity targets for strategic centres of North-West Sydney

Strategic centre	2001	2031	Change 2001-31
Penrith	19,000	30,300	11,300
Blacktown	10,200	15,400	5,200
Norwest	4,600	30,100	25,500
Castle Hill	9,100	12,100	3,000
Rouse Hill	100	9,000	8,900
North-West (41.2% of new net NW jobs)	**43,000**	**96,900**	**53,900**

Source: Transport Population Data Centre (2006)

However, not all areas of Western Sydney shared the population growth of recent years. The outlying local government areas of Penrith, Blue Mountains and Hawkesbury experienced a decline in population between 2001 and 2006, reflecting an older population base and a relative lack of new housing supply opportunities. In West-Central Fairfield also experienced population decline.

In general, though, population growth stimulates economic growth in Western Sydney and induces new economic activities. In particular, population growth has been a major driver of employment growth in retailing, construction, health, education and community services sectors.

The retailing sector is a major employer in Western Sydney. Retailing involves businesses selling goods and services to consumers for personal and household uses. Most major retail investments in Western Sydney in the last two decades have occurred in suburban retail complexes. The key drivers for retail employment include economic growth rates, higher disposable incomes, new retailing and distribution technologies, the availability of part time and casual labour, consumer preferences and the availability of credit. Growth segments in retailing include supermarkets and grocery stores, liquor retail, domestic appliances and clothing retailing.

Western Sydney's retailing centres have become more competitive with the Sydney CBD and North Sydney. Retail rents in Western Sydney are typically less than half of the rates in those centres. Transport access and parking constraints, lack of available commercial space (particularly in North

Sydney) and enhanced amenities in the suburban centres have also attracted suburban-based commercial office investment. Specifically, centres such as Parramatta and Norwest continue to attract new commercial office projects with apparently sound business plans, a stark contrast to the situation twenty years ago.

Population growth also drives investment in social infrastructure including hospitals, educational institutions and community and cultural facilities. Employment in these sectors is largely driven by government policy and budgetary commitments. Significantly, there is a formulaic element to its provision which converts the changing economic and demographic circumstances of Western Sydney automatically into services sector growth.

With a population twice the size of Brisbane, Western Sydney has become a nationally significant production and distribution centre and consumer market. This reinforces the region's prospects for growth induced industries. Population growth creates the critical mass for agglomeration economies, the economic advantages associated with concentrating people and production in urban areas. In 2004, the region contained 241,000 businesses (Greater Western Sydney Economic Development Board 2006, p. 17). Growth creates opportunities for industry clusters to emerge and develop around these businesses.

Large sites, competitively priced land and upgraded infrastructure have attracted investments in the sub-regions from large corporations notably in processed foods, electronics, building materials, engineering and distribution. The NSW government, along with local councils, has increased the supply of employment lands to accommodate growth into the future, particularly in the Western Sydney Employment Hub. Around 70% of Sydney's employment lands are located in Western Sydney, with the North-West and West-Central sub-regions contributing 28.2% and 27.3% of the Sydney total respectively. Most new greenfields sites will be developed in the North-West sub-region building on the Western Sydney Employment Hub. As noted above, the West-Central sub-region has an opportunity to encourage the regeneration of brownfields sites.

Globalisation, improvements in transport infrastructure and greenfields employment lands have spurred growth of transport, distribution and logistics in the sub-regions[3]. The Western Sydney Employment Hub and the Western Sydney Employment Lands Investigation Area have the

[3] This was a finding of a workshop conducted with Western Sydney businesses convened by the Greater Western Sydney Economic Development Board and the Department of Planning in September 2006. The finding, along with others, was submitted to the Minister for Planning and considered in the NSW Employment Lands Task Force (2006).

potential to evolve as nationally significant production and distribution sites. The two sub-regions have an ongoing role to play in providing growth in manufacturing, transport and logistics jobs, as well as in higher order jobs sectors, especially in their key centres and in future business parks.

Infrastructure improvements are major drivers for growth. Significant infrastructure investments in particular are capable of generating enduring growth. The Metropolitan Strategy calls these 'magnet infrastructure'. The Sydney orbital, despite problems including peak hour congestion and on- and off-ramp access difficulties, has linked and improved access between major areas of Sydney. The orbital is inducing investment in a broader range of locations especially in Sydney's outer west.

Major investments in transport infrastructure including the M4, M7, the Parramatta to Liverpool and North West Transitways, as well as education infrastructure – including University of Western Sydney campuses at Werrington, Nepean, Hawkesbury and Rydalmere, as well as TAFE campuses at Granville, Blacktown, Werrington, Nirimba and Blacktown – have induced further investments in a number of value adding industries.

In addition to infrastructure improvements, rising real energy prices and carbon polluting mitigation measures have the potential to reinforce the Metropolitan Strategy's city of cities strategy with businesses placing more emphasis on clustering activities closer to each other and in proximity to rapidly growing areas. Higher energy prices and carbon pollution mitigation schemes also have the potential to boost public transport investment and demand, which may reinforce the attractiveness of existing centres to both firms and households while limiting opportunities for more dispersed centres poorly served by public transport.

Improvements in regional amenities, lifestyle opportunities and social infrastructure are important drivers for job opportunities. Improvements in cultural and entertainment facilities, parks, heritage buildings, access to natural environments such as the Nepean-Hawkesbury river systems and the Blue Mountains encourage people to live and stay in Western Sydney.

The quality and diversity of the housing stock also impacts the growth path of the region, particularly with the emergence of a knowledge-based economy. A close relationship exists between knowledge-based jobs and quality housing throughout metropolitan Sydney. As noted in chapters 2 and 3, regional development theories stress the close relationship between the creation of quality housing, amenities and the growth of high income jobs (Florida 2002).

The growing innovative capacity of Western Sydney firms and an increasingly sophisticated skills base are also important drivers of employment growth. New economic spaces around universities and in business parks drive new job opportunities across Sydney. Western Sydney is sharing in some of these opportunities. Business parks have become the most rapidly growing employment precincts in Sydney over the past 15 years. These are premium employment areas accommodating technology-based firms integrating research, light industry, distribution, administration and sales activities. Business parks provide denser employment ratios and a range of high skilled jobs. They attract higher rental and land prices than traditional industrial zones and offer a range of additional amenities such as childcare, recreation services and shopping.

Between 1996 and 2001, employment in Sydney's major business parks (Macquarie Park, Norwest, Sydney Olympic Park/Rhodes) grew at 6.6% per annum, compared with Sydney's traditional strategic employment centres which grew at 2.0% per annum (SGS Economics and Planning 2004, p. 93). Currently there are around 100,000 jobs in Sydney's business parks (see chapter 8). If growth rates are sustained, more business parks will be required to support demand in outlying areas. Increasingly business parks compete with major centres such as the CBD and North Sydney.

4.4 The role of innovation, knowledge transfer and creativity

As noted in chapter 3, the economic prosperity of regions is closely associated with innovation. Regional firms that have low innovative capacity become less competitive and are locked out of growth opportunities. Key factors driving innovation include access to global knowledge flows, regional knowledge infrastructure and skills, entrepreneurship and the strengths of research and industry linkages. Knowledge exchange and the introduction of new techniques and skills are increasingly associated with the movement of ideas, technologies and people between regions. Knowledge use and creative competencies drive growth in many occupational categories. These skills need to be continually upgraded to sustain regional competitiveness.

Globalisation and the digital revolution have resulted in an explosion of new products and services, particularly with digitally-based production techniques and applications. Innovation based on technological change tends to cluster in geographical locations. In turn, the spatial clustering of firms leads to increased efficiencies due to reductions in transaction costs, improved innovative capacity, and organisational flexibility. Further,

> "creativity and innovation within the production system are much enhanced, in part because of the variety of different skills, sensibilities, and experiences embodied in the labour force, and in part because the agglomeration of interdependent producers in one place increases the probability of encounters in which novel insights and/or economically useful knowledge are engendered."
>
> Scott et. al. (2001, p. 17)

The North-West and West-Central sub-regions are developing a growing concentration of knowledge infrastructure. The University of Western Sydney makes a significant contribution to the Western Sydney regional economy through its contribution to the development of human capital in knowledge occupations. Around 65% of UWS students are residents of Greater Western Sydney. The University is making major investments in teaching and learning programmes and research centres. TAFE, through the South West and Western Institutes of TAFE, has 17 campuses and 121,000 student enrolments across Western Sydney. In addition, the region has a growing network of research organisations and registered training organisations. Residents and regional firms can also take advantage of leading national universities and technical colleges across metropolitan Sydney.

Households have made increasingly significant investments in higher education and training skills over the past decade. The change in the number of residents with technical and higher education qualifications is summarised in figures 4.2 and 4.3 for West-Central and North-West respectively. The number of residents with technical and higher educational qualifications in the sub-regions increased from 121,000 to 171,000 in West-Central and from 151,000 to 231,000 in the North-West during this period. In percentage terms, the proportion of qualified residents increased from 28% to 36% in West-Central, and from 35% to 45% in the North-West sub-region.

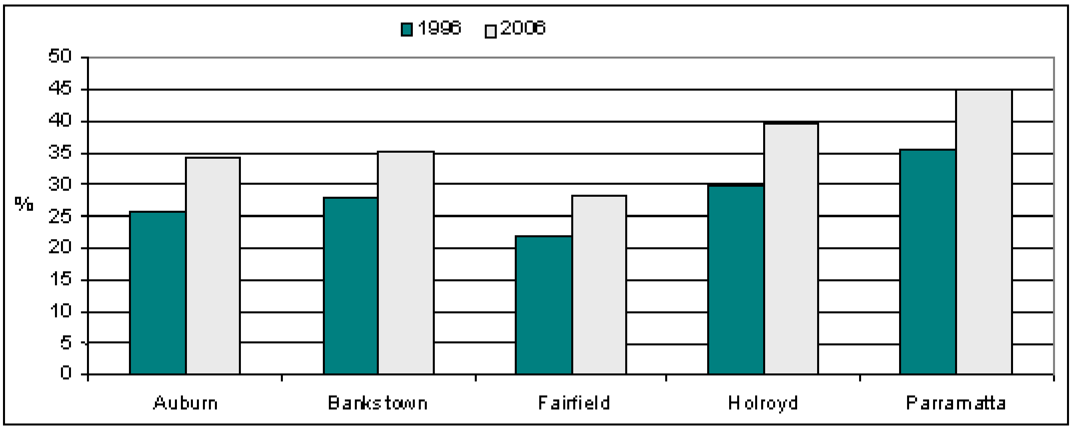
4.5 Conclusion

Western economies have been increasingly driven by market-based governance systems. In this context the investment behaviour of the enterprise sector becomes the critical driver of a region's capacity to generate wealth, income and employment. The following chapter examines the enterprise sector for the sub-regions as well as for Western Sydney as a whole.

This chapter has outlined the changing geography of Sydney and the growing importance of both sub-regions. Western Sydney is forecast to accommodate 69% of Sydney's population growth and

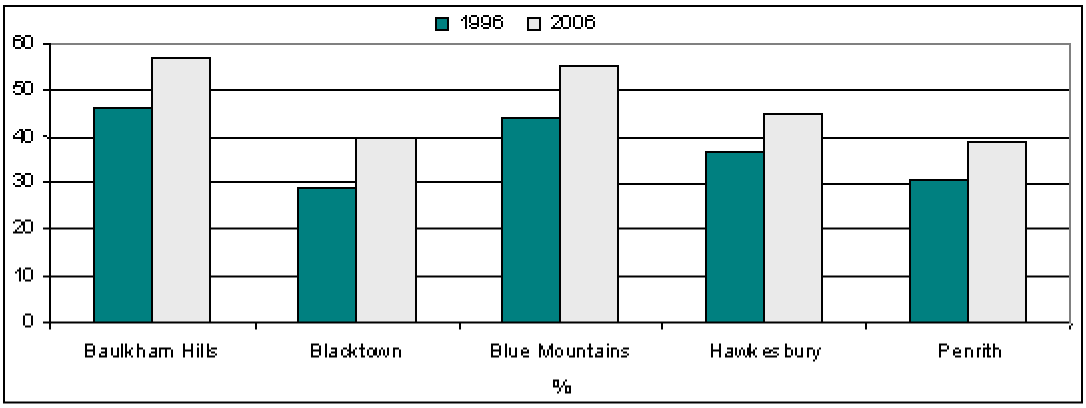
56% of net new jobs to 2031. The sub-regions are undergoing major transformations, driven by growth and an improved connectedness with the rest of Sydney. Significant changes are occurring in the region's labour force with significant investments in education and training and a growing proportion of managers and professionals in the local workforce. Areas of marginalisation remain, however, where residents are not benefiting from the substantial economic growth that has occurred over the past 25 years.

Figure 4.2 Percentage of adult population (>20) in West-Central with technical and higher education qualifications



Source: ABS Census of Population and Housing 2006

Figure 4.3 Percentage of adult population (>20) in North-West with technical and higher education qualifications



Source: ABS Census of Population and Housing 2006

5 Industry dynamics

5.1 Industry prospects for Western Sydney

Western Sydney has developed a large, robust, diversified and dynamic economy over the past 25 years. As noted in chapter 4, the region contained 241,000 businesses in 2004 (Greater Western Sydney Economic Development Board, 2006, p. 17). Gross regional product was estimated at $80 billion in 2005-06, which represented around 9% of national GDP (Greater Western Sydney Economic Development Board, 2007, p. 2). The sub-regions of Western Sydney retain a strong production and distribution base with strengths in manufacturing and transport and logistics, and a growing number of jobs in population-growth-related service industries such as health, education, retail and community services. The region maintains a significant presence, too, in finance and business services, as well as high technology industries including bio-medical, aerospace and advanced manufacturing.

As discussed in chapter 4, employment growth in Western Sydney is driven by a number of factors:

1. Global and macro-economic parameters, prolonged economic growth, industry competitiveness and the region's capacity to attract and retain skilled workers

2. Population size and growth rates, and rising real incomes

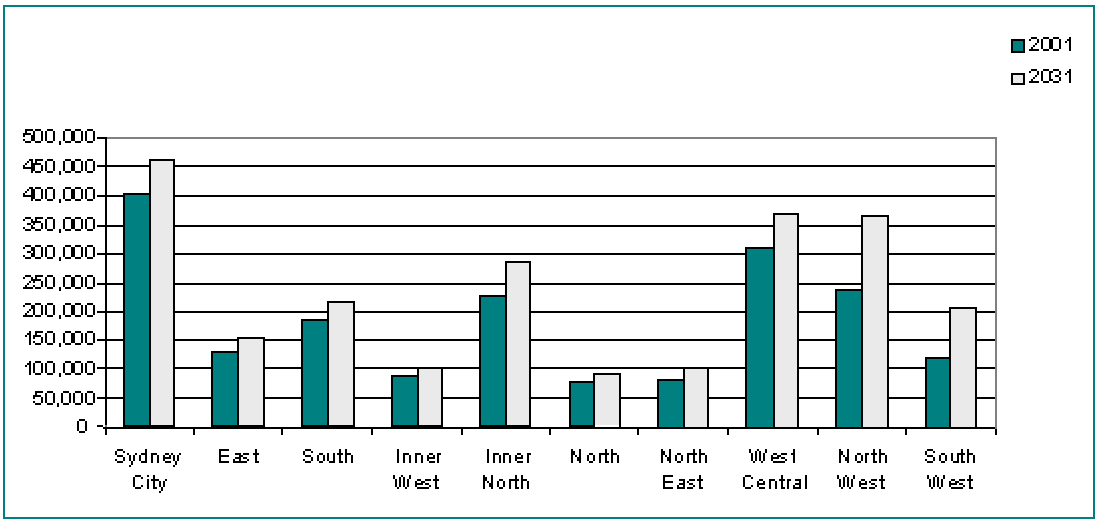
3. Access to local and global suppliers and customers as a result of investment in the M7 Westlink Motorway and improved connections across metropolitan Sydney

4. Competitively priced and available employment lands including large sites well located for metropolitan and national distribution

5. Growth in knowledge infrastructure and a growing skills base within a rapidly growing regional labour force.

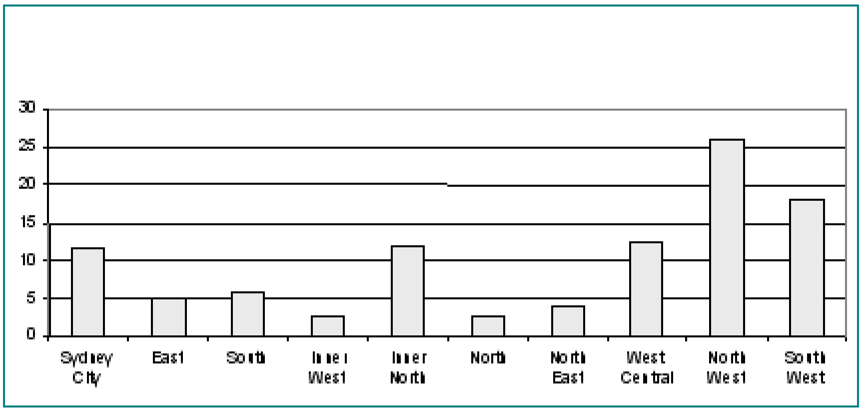
Figure 5.1 shows that West-Central and North-West sub-regions host the second and third largest number of jobs in metropolitan Sydney, with 330,000 jobs and 273,000 jobs respectively. Further, figure 5.2 indicates that the three Western Sydney sub-regions have the highest share of forecast metropolitan jobs growth to 2031, with the North-West accounting for 26.1% of forecast metropolitan job growth, and West-Central accounting for 12.3% of forecast metropolitan job growth to 2031.

Figure 5.1 Employment forecasts for established Sydney and Western Sydney 2001 to 2031



Source: Transport Population Data Centre (2006)

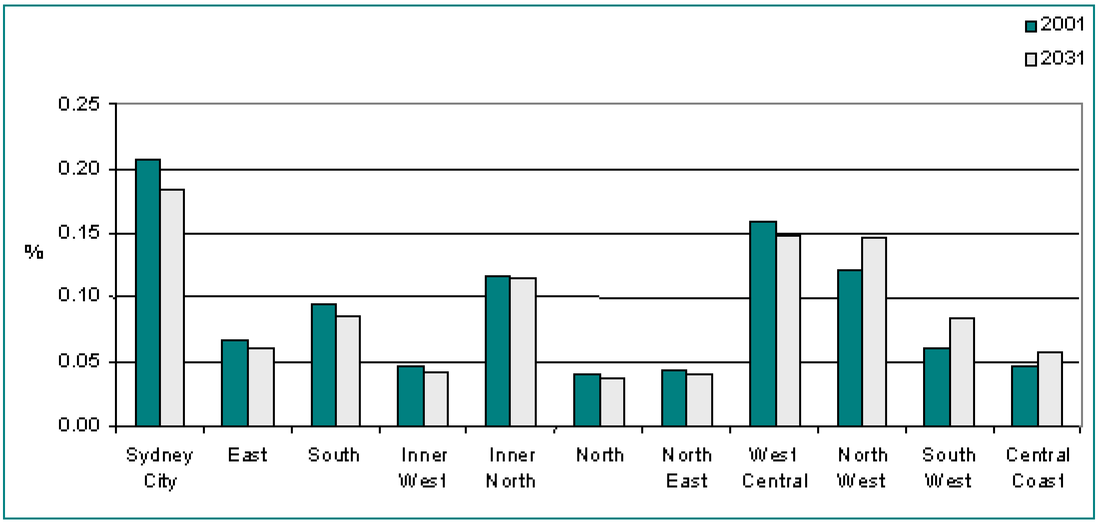
Figure 5.2 Sub-regional share of Sydney's forecast job growth 2001 to 2031(%)



Source: Transport Population Data Centre (2006)

Figure 5.3 shows the forecast changing share of jobs in the metropolitan area to 2031 (including Central Coast). The forecasts anticipate that the share of jobs in the three GWS sub-regions and Central Coast will increase and, correspondingly, that the share of all sub-regions of established Sydney will decline.

Figure 5.3 Sub-regional share (%) of metropolitan jobs 2001 to 2031



Source: Transport Data Centre (2006)

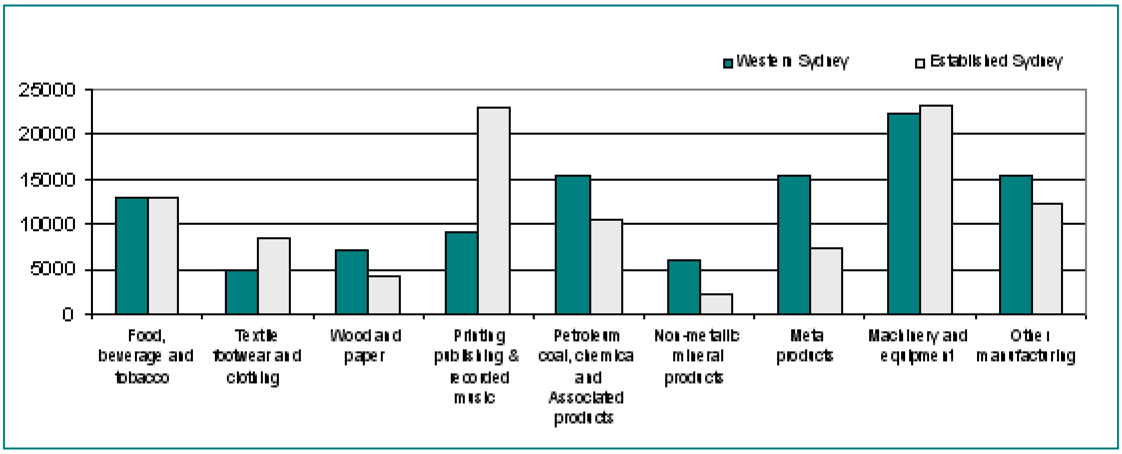
Assuming the presence of global and national macro-economic stability, the Western Sydney economy has good economic growth prospects. The size and diversity of the economy, growth of a skilled and professional labour force, and substantial land resources in proximity to developing transport infrastructure provide good foundations for the region's future economic growth. As noted, economic growth will be driven by both growth induced activities and increasing specialisation in value adding industries. Growth induced activities are predominantly associated with population growth and change and integration into the larger metropolitan economy, while specialisations are concerned with competitive advantages of regional firms.

Growth induced activities can be divided into those driven by household expenditure and those associated with government policy. Industries driven by household expenditure include retail, residential construction, consumer durables (such as appliance, furniture, audio-visual and data processing equipment) and business services directed at households and personal services. Retail is a large regional employer with employment distributed in major regional and suburban centres. The drivers for regional retail employment growth include population size and growth, real disposable incomes, consumption by visitors and demographically sourced impetuses related to ethnicity and ageing, and workplace changes including extended trading hours and electronic trading (Leyshon Consulting 2003). The dispersal of retail employment to growing suburbs has been a long standing trend in Sydney. Building and construction, including residential construction and renovation and infrastructure projects, is largely driven by population growth. The industry is constituted by a small group of large developers and engineering firms while incorporating numerous self-employed tradespeople such as carpenters and joiners, bricklayers, plumbers and electricians, all heavily concentrated in Western Sydney.

As noted, public sector expenditure for infrastructure and community services is also determined by population growth. Strong employment growth is forecast by the Transport Data Centre in health and community services sectors to service the growing population, specialised services for ageing and disabilities, and investment in education.

Western Sydney has competitive advantages in manufacturing. Prominent sectors include industries serving local markets such as in processed foods, metals and building materials. Potential growth might be generated in advanced manufacturing such as aerospace, defence, automobile components and marine engineering, OEM (Original Engineering Manufacturing) and MPO (Maintenance Repair & Overhaul) (Greater Western Sydney Economic Development Board 2008). Around 51% of Sydney's manufacturing jobs are located in Western Sydney; and while this share is expected to increase over time (figure 5.4), the fall in the actual number of manufacturing jobs in the region will continue.

Figure 5.4 Manufacturing jobs: established Sydney and Western Sydney 2001



Source: ABS Australian New Zealand Standard Industrial Classification

The transformation to a sustainable economy will create significant opportunities for Western Sydney. Higher energy and food prices may generate new investment in local intensive agriculture and food processing due to higher costs of transport. New opportunities are emerging for sustainable building materials and energy systems, as well as water recycling and management, packaging and waste minimization (Workplace Research Centre, Strategic Economics and Energy

Strategies 2006). New opportunities for information and communications technologies are also available.

One of the high growth areas in global cities is finance and advanced business services. As noted in chapter 4, these industries concentrate in the Sydney CBD, hence limiting opportunities for dispersal to Western Sydney. Yet Parramatta is emerging as an important business centre for Western Sydney, and is attracting finance and business services back-office activities from the Sydney CBD. The relocation by the Commonwealth Bank of major finance services from Sydney CBD to Parramatta is a recent example. Parramatta has competitive rents compared with the Sydney CBD and good CBD access. Finance and business service companies are also attracted to business parks, with Norwest and Sydney Olympic Park attracting financial institutions. Business parks are also increasingly attractive to smaller specialised business service firms, particularly when they can offer small strata office suites to the growing number of professionals.

5.2 Impediments to growth

On its own, population driven growth is insufficient to drive long term growth. Moreover, if economic growth in Western Sydney lags, then the region's ongoing rate of population growth would also be expected to slow. The region, therefore, needs to address a number of impediments to growth. These include:

1. Insufficient competitive industry clusters
2. Transport bottlenecks
3. Skills shortages
4. Inadequate communications infrastructure
5. Housing infrastructure and other cost pressures
6. Ineffective governance.

These impediments are now dealt with in turn.

5.2.1 Insufficient globally competitive industry clusters

Most globally successful regions sustain competitiveness through industry clusters and networks. Networks are groupings of firms and organisations including training institutions, not necessarily geographically based, that constantly exchange knowledge and information with each other, and promote learning. Clusters are concentrations of competitive and complementary firms, usually geographically based, where constant interaction and learning from each other drive competitiveness (Cooke 2002).

Successful industry clusters attract highly skilled residents to live in locations accessible to these clusters. Western Sydney and its constituent sub-regions have established industry clusters in some manufacturing sub-sectors such as processed foods, metals, chemicals, machinery and transport equipment. Potential clusters include the aerospace, bio-medical and pharmaceuticals sectors, although as yet these are of insufficient scale to be self-sustaining. Supporting strategies are required to support the growth of networks and clusters in Western Sydney.

5.2.2 Transport bottlenecks

Despite the completion of the orbital network, transport infrastructure remains a major concern for Western Sydney. Bottlenecks exist on both east-west (e.g., M4) and north-south (e.g., Cumberland Highway) road networks and across the entire rail network. Poor transport planning and delivery of new infrastructure is costly for the region. Sydney's public transport lacks the key attributes of a world class public transport system: convenience, high frequency, cost effectiveness and reach into major residential areas (Glazebrook 2008).

Increasing fuel costs are a major challenge, not only to vehicle dependent households and firms in Western Sydney, but also to the regional economy (Streat 2008). Despite recent clustering of freight intensive activities around the M4 and M7 motorways, there are delays in investing for intermodal facilities, and new freight rail infrastructure. The proposed new investment in intermodal facilities at Moorebank in the South-West will not alleviate the congestion experienced by the rapidly growing freight user areas in the North-West sub-region.

5.2.3 Skills shortages

Skill shortages are impeding growth. More investment in human capital is required as the basis for knowledge based and trades jobs. Firms and households need to continually upgrade skills to sustain competitiveness. Western Sydney is experiencing skills shortages of both professional and tradespeople. There is evidence of rising demand for knowledge workers - skilled individuals with a range of problem identification and solving, IT literacy and communications skills (Strategic

Economics 2007). More needs to be done to drive new knowledge based employment opportunities and the availability of highly qualified local resident workers.

Significant job increases have occurred in the region for computing professionals, accountants, general managers, doctors, lawyers, designers and illustrators, human resource, marketing and advertising professionals, and financial dealers (ibid). Yet, as we show in chapter 6, the region continues to underperform in these jobs categories compared with Sydney as a whole. Skill shortages in trade skills are also a major problem. This is due to lack of investment and financial support for apprentices, the stigmatisation of traditional trades and the ageing of the labour force segment with trade skills.

Reflecting low levels of training and qualifications, the region has little trouble filling low skilled positions such as sales assistants, check out operators, receptionists, bar attendants, waiters and sales representatives.

5.2.4 Communications

High speed internet access is essential for competitive businesses to provide for e-business, data storage and transfer, and teleconferencing (Brennan 2008). Broadband communications access is inadequate in the region.

5.2.5 Housing infrastructure and other cost pressures

Although Sydney's housing boom is faltering with significant levels of mortgage distress across many Western Sydney suburbs, house prices remain high compared to other capital cities and unaffordable for many residents (Australian Property Monitors 2008). The cost of housing and the cost of living force many workers to live long distances from job opportunities. Travel times, escalating fuel costs and car dependence put pressure on household budgets and relationships. These problems are compounded by shortages of rental accommodation and under-investment in community and public housing stock.

5.2.6 Governance

Poor coordination between government agencies in relation to economic development and employment generation impedes growth in Western Sydney. Local economic development initiatives have improved with more resources for economic development practitioners at the local government level. The sub-regional plans provide a foundation for greater cooperation between councils within their respective sub-regions in relation to economic development. WSROC and other regional bodies such as the Greater Western Sydney Economic Development Board are key organisations for propelling regional economic development but they remain under-resourced. Local and regional economic policy needs to be strengthened with greater resources and focus on innovation and industry cluster policy, workforce development, and infrastructure planning and delivery. Government initiatives such as the NSW Innovation Strategy need to be applied to specific sub-regions of Western Sydney. WSROC also has a continuing and important role in setting a new economic policy direction linked to relevant Commonwealth agendas including the National Innovation Review, Regional Development Australia, Infrastructure Australia, and the Regional and Local Community Infrastructure program.

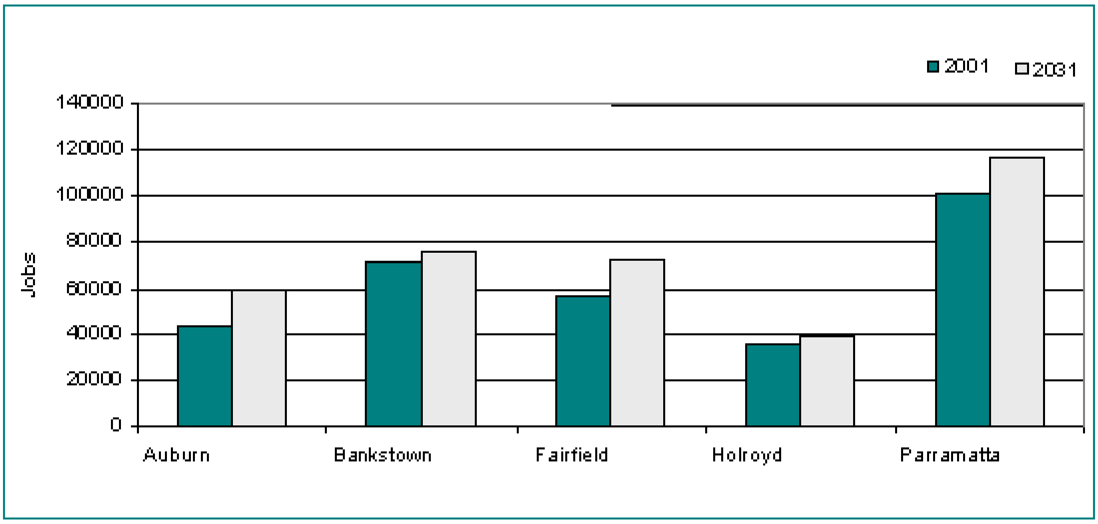
5.3 West-Central sub-region industry dynamics

The West-Central sub-region is one of Sydney's most important employment destinations. Most of the sub-region's major employment centres (Parramatta, Bankstown, Westmead and Sydney Olympic Park) are accessible from a wide labour market catchment. They are located on major rail lines or, in the case of Sydney Olympic Park, connected by a spur line to a major rail line. Major transport corridors traverse the sub-region.

The West-Central draft sub-regional strategy sets a target of 61,000 new jobs and 95,500 new dwellings (between 2001 and 2031). The sub-region is expected to accommodate more new dwellings in established areas than any other sub-region, with almost double the forecast increase in dwellings of the next largest sub-region, the City of Sydney. The rationale for the high dwelling target is the redevelopment potential of West-Central. This sub-region has a high proportion of old low density housing stock located close to transport networks. It also seems to have fewer development constraints than Sydney's inner suburbs, which have been the focus of urban consolidation strategies over the past 25 years. The jobs target is more modest in West-Central because older industries, particularly manufacturing, will continue to restructure and shed jobs, and hence net job creation is anticipated to be lower.

The Transport Data Centre estimates the sub-region contained around 330,000 jobs in 2006. Figure 5.5 sets out TDC employment estimates for 2006 and employment forecasts to 2031. Parramatta, Auburn and Fairfield are forecast to experience a net increase of more than 15,000 jobs each, with jobs increases of 36%, 29% and 16% respectively. Low employment growth is forecast for Bankstown and Holroyd, around 6% and 11% respectively. The sub-region has strong employment self-containment, with its labour force drawn from a wide catchment area.

Figure 5.5 West Central employment forecasts 2001 to 2031



Source: Transport Population Data Centre (2006)

The sub-region has a strong economy undergoing transformation. Figure 5.6 shows industry employment distribution in the West-Central based on TDC estimates. Key features and trends include:

1. A large manufacturing base, accounting for over 65,000 jobs, or about 3 in every 10 manufacturing jobs in Sydney

2. A relatively important sub-region for property and business services to service growing industry and household demand; and for public administration services

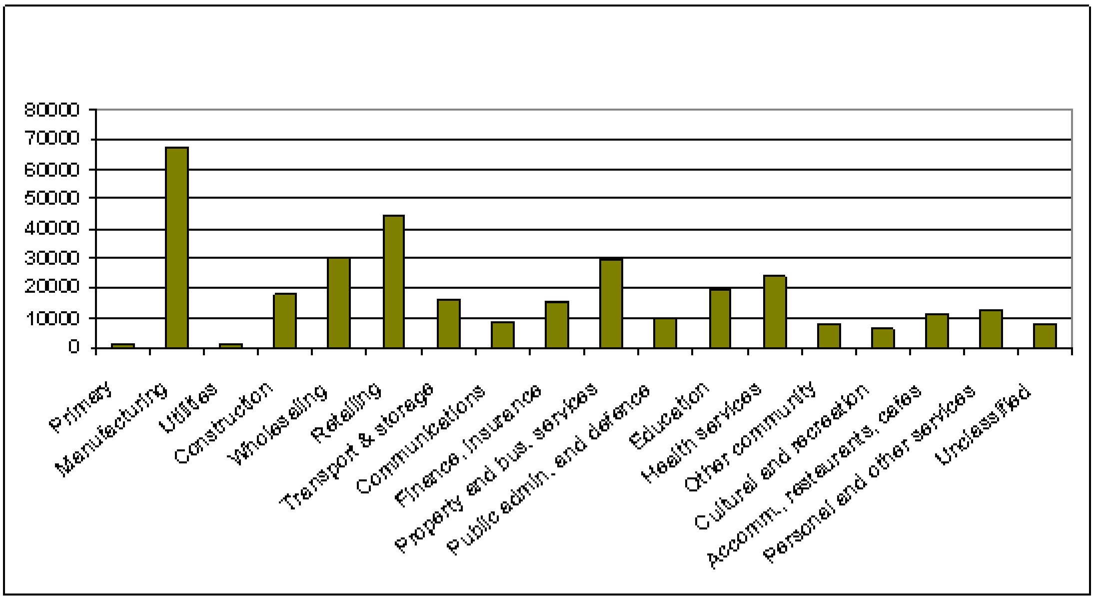
3. An increasing shift to population driven services, including retail, health and education and other community services.

Major industry groupings include:

- Manufacturing
- Transport and logistics (including wholesaling)

- Building and construction
- Retailing
- Population related public services
- Finance insurance, property and business services.

Figure 5.6 West-Central employment by industry

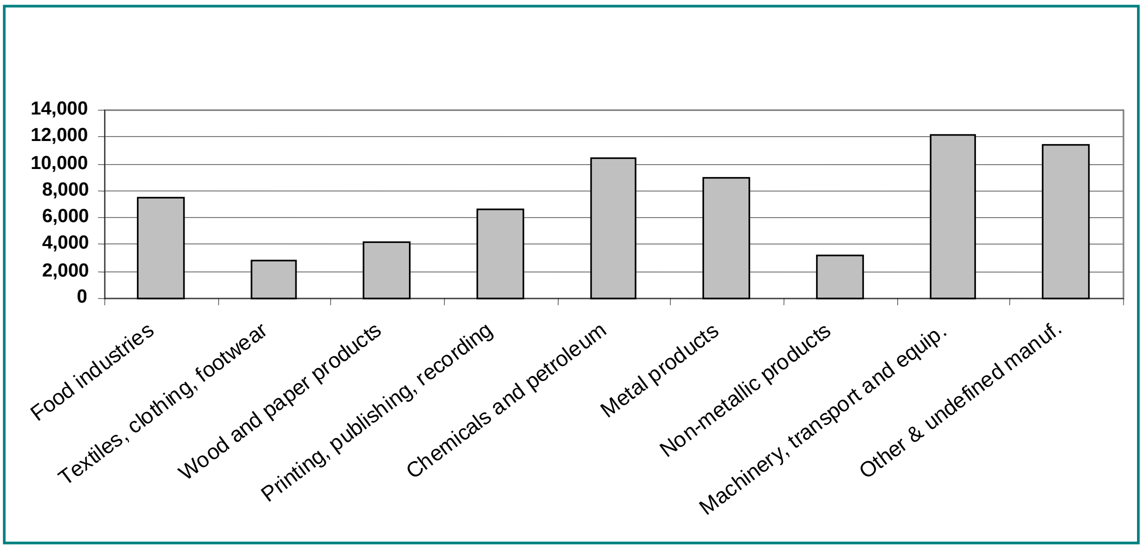


Source: Transport Population Data Centre (2006)

5.3.1 Manufacturing

While manufacturing employment has declined over a 30 year period it remains central to the sub-region. The sub-region has strengths in chemicals and petroleum – based predominantly around the Clyde oil refinery – machinery equipment and metal products. (see figure 5.7 and examples below). Manufacturing industries were vulnerable to tariff reductions in areas such as textile, clothing and footwear, as well as metals and engineering. These resulted in substantial job losses in specific industrial localities including Fairfield, Bankstown and Auburn. A number of corporations have rationalised higher cost Australian based operations and out-sourced from low cost countries. Innovation and automation have reduced labour inputs per unit of output. Many manufacturing firms outsource inputs such as human resources, design services and financial management. The Transport Population Data Centre forecasts that manufacturing employment in West-Central may decline by more than 20% between 2006 and 2031 (Transport Population Data Centre 2006).

Figure 5.7 West-Central manufacturing employment (2006 est.)



Source: Transport Population Data Centre (2006)

Important manufacturing concentrations in West-Central include the following:

1. Aerospace and defence. A number of aviation businesses involved in the maintenance and overhaul of civilian and military aircraft is clustered on and around Bankstown Airport and Milperra (Greater Western Sydney Economic Development Board n.d.a., pp. 1-2). Key companies include Hawker Pacific, Turbomeca, Byron, Boeing Hawker de Havilland, Eurocopters and Thomas Electronics

2. Chemicals and plastics. The sub-region has a substantial concentration of chemicals and plastics firms (Greater Western Sydney Economic Development Board n.d.b., pp. 1-2). Major operators include Shell, Selleys, Barloworld Coatings, BOC Gases, and Colgate Palmolive. Water access has traditionally been important to the industry with a cluster of businesses located along the Parramatta River at Meadowbank, Silverwater, Rydalmere and Parramatta. Other concentrations are located in Padstow, Seven Hills, Villawood and Wetherill Park

3. Machinery. Machinery and engineering companies are engaged in the fabrication of metals products and the manufacture of tooling and factory equipment, automated machinery and engineered metal components. Major sub-regional firms include Ajax, Fidax, Heatcraft, Intercast and Forge (Greater Western Sydney Economic Development Board n.d.c., pp. 1-2)

5.3.2 Transport and logistics (including wholesaling)

Transport and logistics, involving movement of people and goods, are important activities in West-Central. Globalisation has increased trade dependence with local companies sourcing more inputs from national and global sources, which drives demand for transport, wholesaling and logistics activities. Many firms are engaged in global trade, and, as they become more specialised, they outsource activities that were traditionally undertaken in-house. Efficient supply chains, where goods and materials flow promptly between suppliers, producers and customers, increase demand for transport and logistics. The growth of e-commerce and the reduction in inventories also drive demand for transport and logistics. Many local companies have ceased manufacturing but retain their premises for storage and distribution of imports. The completion of the Sydney orbital has increased the attractiveness of sites close to the motorways for transport and logistics investments, such as at Wetherill Park and Milperra, while congestion on arterial roads such as Parramatta Road is reducing demand in areas around Silverwater.

5.3.3 Building and construction

According to 2006 census around 14,500 workers are employed in the West-Central building and construction industry. The Transport Data Centre forecasts that building and construction industries will sustain strong growth to 2031 throughout West-Central and Western Sydney in general. Substantial growth in retail, factories and commercial office and infrastructure investment will also stimulate construction activity growth. Employment in this sector tends to be relatively dispersed because of the large number of self-employed tradespeople including plumbers, electricians and carpenters (Pearson 2008).

5.3.4 Retailing

Retail activities are located in a range of activity centres in the sub-region, including strategic centres and suburban centres, as well as in new retail formats such as bulky goods centres. Retail is the second largest employer in West-Central after manufacturing, with over 26,100 employed workers. Retail caters predominantly for the local residential market, although the trade area for Parramatta, the dominant retail centre, is much wider. Retail employment in Sydney has suburbanised alongside population growth and real incomes manifest in the rise of large retail complexes often in competition with traditional retailing centres. Growth in the retailing sector includes supermarkets and grocery stores, liquor retail, domestic appliances, clothing retailing and take away foods (Strategic Economics 2007).

5.3.5 Population related public services

These activities cover public administration and safety, education, health care and community services assistance. Employment is largely driven by government policy and budgetary commitments, as well as the changing economic and demographic context. These activities provide more than 60,000, or 20% of all jobs in West-Central.

Successive state governments have given priority to relocating jobs and services to the west. The Metropolitan Strategy and *Priority E5 – Jobs closer to home* of the State Plan (NSW Department of Planning 2007a, p. 7) give priority to establishing educational, health and community facilities close to where people live.

5.3.6 Finance insurance, property and business services

Office based employment includes finance and insurance and property and business services, as well as public administration. Currently, the West-Central economy employs around 45,000 workers in these industries. Importantly, the TDC forecasts that these industries will be the fastest growing in West-Central to 2031, with more than two thirds of all employment growth emanating from these industries.

In global cities, finance and advanced business services tend to concentrate around central business districts, while local business services tend to disperse to suburban centres. Parramatta has further growth potential in finance and business services. The centre is attracting back office activities and has developed a number of higher order functions serving broader Western Sydney and metropolitan markets. The relocation of Commonwealth Bank functions to Parramatta and Sydney Olympic Park will further spur growth.

The major non-retailing services industries in West-Central are banks, general insurance, real estate agencies, engineering consulting, accountancy, legal services, employment placement services and cleaning. Parramatta is the dominant centre in regard to all of these industries, with the exception of cleaning, which is broadly dispersed (Transport Population Data Centre 2006).

5.3.7 Cultural industries

West-Central is under-represented in arts and recreational industries compared to city centre locations. Cultural industries with some presence in Western Sydney include film, radio and television; libraries, museums and the arts; and recreation services which include sports, casinos and gambling. Significant facilities in Western Sydney include Sydney Olympic Park, Parramatta Stadium and Park, cultural venues such as Riverside Theatre, as well as a variety of smaller scale cultural and recreational assets. The sub-region contains prominent ethnic communities including the Vietnamese at Cabramatta, and Arabic communities in Auburn and Bankstown. WSROC (2005) and local councils actively promote cultural industries including artists' studios at Parramatta, the Auburn Festival Main Stage, Cabramatta Moon Festival and the Western Sydney Dance Action at Holroyd. An arts hub is proposed as part of the Bankstown CBD Renewal Project (see Parramatta City Council 2008; Bankstown City Council 2008; Auburn Council 2007).

Increasingly, creative and cultural content has economic value in many industries. Hence, there are good reasons for strengthening and integrating the links between culture and the economy including the development and marketing of cultural infrastructure.

5.4 North-West sub-region industry dynamics

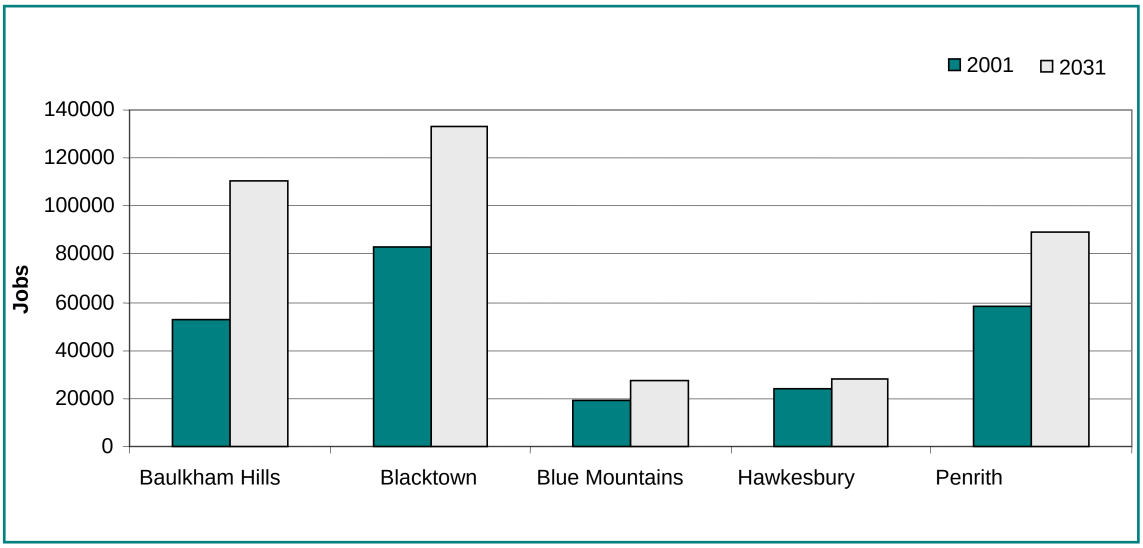
The North-West, which currently has around 275,000 jobs, is forecast to grow more jobs and at a faster rate than other metropolitan sub-regions by 2031; although we see that this is an ambitious target for an outlying sub-region of the metropolitan area.

Employment growth in the North-West will be driven by a combination of population induced growth of services, increased investment due to improvements in transport infrastructure (including motorways and proposed rail infrastructure), and growing specialisation in value added manufacturing and knowledge based and services industries. Figure 5.8 shows forecasts of employment doubling in Baulkham Hills and also large job increases in Penrith and Blacktown.

A number of factors are continuing to drive employment growth in the sub-region. First, Sydney's population has been dispersing to the North-West sub-region over a number of decades, particularly since the Sydney Region Outline Plan 1968 with expansion along the western corridor from Parramatta to Penrith; and more recently with new release residential areas around Baulkham Hills.

A growing labour pool is generating employment growth particularly in retail, health and community services, education and the construction industries.

Figure 5.8 North West employment forecasts 2001 to 2031



Source: Transport Population Data Centre (2006)

Second, some of the state's largest employment lands are located in the North-West sub-region. These include the Western Sydney Employment Hub and major industrial estates including Dunheved, North Penrith and South Penrith. Large sites, competitively priced land and upgraded infrastructure have attracted investments by large corporations including in processed foods, electronics, building materials and engineering. The NSW government, along with local councils, has increased the supply of employment lands to accommodate growth into the future, particularly the Western Sydney Employment Hub. The government has released 2,200 hectares around this area and has recently added an Employment Lands Investigation Area for further releases. The NSW Employment Lands Task Force (2006) report states that of the 125,000 new jobs to be located in Sydney's employment lands to 2031, most are anticipated to be concentrated around the North-West sub-region.

The North-West sub-region has the highest share of zoned employment lands in metropolitan Sydney, comprising more than 28% of Sydney's zoned employment lands (NSW Department of Planning 2007b). The sub-region is emerging as a central area for new manufacturing and logistics jobs. Major recent projects include new warehouse and distribution centres for Coles, Woolworths, LG, CSR and Kimberly-Clark. New manufacturing investment is also occurring in the North-West including the relocation of Goodman Fielder and Bluescope to Erskine Park.

Third, large education institutions in the sub-region are adding to the stock of human capital including the University of Western Sydney at Kingswood, Werrington and Nepean, as well as TAFE campuses at Kingswood, Mt. Druitt, Blacktown, Blue Mountains and Richmond.

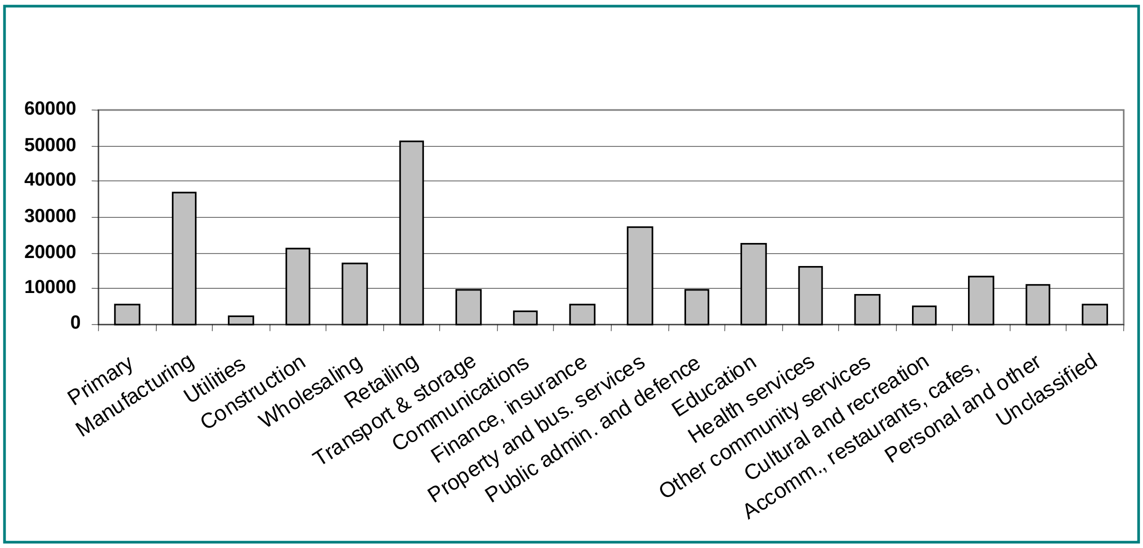
Finally, as the knowledge and skills base of the region strengthens, an increasing number of large firms is attracted to the region. Norwest Business Park has consolidated as one of Australia's more successful business parks. A new business park has recently been established at Greystanes. Most proposals for new business parks in Sydney target sites in the North-West, including Marsden Park, Box Hill, Riverstone and Seven Hills.

The occupational dynamics of residents in the North-West sub-region reflect a growing professionalisation of the labour force, improvements in infrastructure, an integration of the region into the metropolitan economy, and the growth of population-led occupations in retailing and community services. The largest employment growth increases in the North-West are among specialist managers, business and information professionals, educational professionals, other associate professionals, intermediate service workers and elementary sales workers (Strategic Economics 2007).

The interrelated nature of quality residential development, amenities and job growth is illustrated by developments in the North-West sub-region. Until the early 1980s, North-West Sydney largely comprised semi-rural properties. High income earners were attracted to rural residential areas such as Dural, Arcadia and Galston in the Hornsby area. The North West Sector Regional Environmental Plan established a framework for future urban development in the area. This created an opportunity for residential development stretching from Castle Hill to Rouse Hill. Despite poor infrastructure, many young higher income families have been attracted into the area chiefly by housing market opportunities (UNSW City Futures Research Centre 2007, p. 5). In 1996, there were 25,629 managers and professional resident workers in Baulkham Hills, or 40% of the resident workforce. By 2006, this had increased to 36,079, or 43.4% of the resident workforce. One in two new resident workers over the decade has been either a professional or a manager.

The Transport Data Centre employment estimates by industry in 2006 are set out in figure 5.9. The sub-regional economy has strengths in retail, property and business services, manufacturing, and community services such as education and health. The sub-region also has strategically important agricultural industries, which, due to rising fuel prices and restrictions on carbon emissions, may become more important in future.

Figure 5.9 North-West sub-region: employment by industry (2006)



Source: Transport Population Data Centre (2006)

The TDC forecasts that new jobs are expected to be accommodated in the sub-region's strategic centres including the regional city of Penrith, and rapidly growing centres such as Castle Hill and the newly created centre of Rouse Hill.

5.4.1 Primary industries

The sub-region is an important producer of Sydney's agricultural commodities. Key activities include mushrooms, orchards, market gardens, cut flowers, nurseries, turf and poultry. According to the 2006 census, around 3,000 people are employed in agricultural activities although, as we show in chapter 6, this number has declined significantly in recent years.

There are a number of reasons for the protection of agricultural lands on the urban fringes of the North-West sub-region.

- Agricultural output makes a significant economic contribution to the smaller localities on Sydney fringes, including those with diverse ethnic populations

- Growing sensitivity to sustainability issues, such as the need to contain 'food miles', raises the possibility of increased demand for agricultural land in the Sydney basin in future years

- A rural landscape on Sydney's perimeter is part of the basin's cultural and landscape heritage and deserves protection.

5.4.2 Manufacturing

A number of manufacturing industries is concentrated in the North-West sub-region, although the Transport Data Centre estimates there are only about half the number of manufacturing jobs in North-West compared to West-Central. Almost half of the North-West's manufacturing industries are located in employment lands in Blacktown, including Arndell Park, Huntingwood and Glendenning. Major industries include iron and steel manufacturing and fabrication, industrial machinery and equipment, processed foods, pre-fabricated building materials and non-metallic products. Penrith also has a significant manufacturing base, including for the production of aluminium foil, concrete, building materials, plastics, textiles, pharmaceutical, engineering and electrical products. The Baulkham Hills economy emerged later than Blacktown and Penrith, and is less dependent on manufacturing, although it does have significant manufacturing concentrations in machinery, transport and equipment, chemicals, and small companies supplying the building industry. Hawkesbury has a spread of manufacturing activities in wood and wood products, printing, publishing and recording and metal products. Blue Mountains, due to physical constraints and small population, has a small manufacturing base though with modest concentrations in printing, publishing and recording.

5.4.3 Transport, wholesale and logistics

Sydney's transport and logistics industries are increasingly attracted to the North-West sub-region as a result of abundant and competitively priced greenfields sites, population growth, and access to the Sydney orbital. The most significant cluster is located in Blacktown, where 17 of Sydney's top 25 transport companies have their corporate headquarters or main facility. Around 56% of the sub-region's transport and storage, and 44% of wholesaling jobs, are located in Blacktown. The intersection of M4 and M7 is emerging as a central distribution point on Australia's east coast. Many manufacturing companies use Blacktown as a location to store and distribute product both nationally and internationally. Major companies include Coles Myer, Woolworths, Fujitsu, TollAust and Mayne Logistics. Penrith is increasing opportunities for transport and logistics investments in areas such as

Erskine Park. Further, much of the Western Sydney Employment Lands Industrial Area is based in Penrith. Baulkham Hills, now traversed by the M2 and M7, is also picking up its share of transport and logistics activities.

5.4.4 Retailing

Retailing is the largest employer in the North-West, and has experienced strong growth. According to 2006 census data, retailing employs around 32,500 persons, accounting for 15% of all sub-regional jobs. The TDC forecasts that retailing will accommodate around 24% of sub-regional job growth by 2031. Key factors driving retailing are population growth, high per capita incomes particularly in the Hills district, and relatively large catchment areas. Employment is divided across a sub-regional urban hierarchy encompassing strategic centres, towns, villages and bulky goods outlets. Retailing is the core activity in the strategic and emerging activity centres of the North-West, including Blacktown, Castle Hill, Penrith and Rouse Hill, with smaller town centres serving local markets in Windsor, Richmond, St Marys, Mt Druitt, Katoomba and Springwood.

5.4.5 Finance, property and business services

As we argue elsewhere, finance and business services are under-represented in the sub-regional economy with the exception of the Norwest Business Park. According to the 2006 census these industries provide an estimated 25,300 local jobs, or around 12% of total jobs. Historically, outer Sydney sub-regions contain a relatively low share of jobs in this sector. The growth of jobs in finance and business services in the North-West sub-region is limited largely to jobs in real estate, suburban banks, cleaning and security services. But, as noted, the establishment of Norwest Business Park, with a special zoning which encourages commercial office jobs, has been an important factor in attracting business services employment. For example, the Australian headquarters of Capital Finance is located at Norwest, and the construction of strata office suites is attracting local business service professionals. Around 43.4% of workers in Baulkham Hills are employed as managers and professionals (compared to 36.9% for metropolitan Sydney).

The Transport Data Centre forecasts strong employment growth for the North-West. The North-West sub-region is a strong candidate for future business park investment. Given the success of Macquarie Park and Norwest business parks, and with Norwest inevitably growing to capacity, a commitment is required to develop new business parks in outer Western Sydney. Most of the prospective sites are in the North-West sub-region including Marsden Park, Box Hill, Riverstone and the Western Sydney Employment Lands Investigation Area. Most of the industry growth prospects outlined by the Greater Western Sydney Economic Development Board could be accommodated in a business park environment. These include:

1. Advanced building design and materials
2. Corporate distribution and logistics headquarters and facilities
3. Advanced manufacturing and services – including bio-technology, information technology and communications, tooling and machining
4. Environmental management products and services
5. Aerospace and transport technologies
6. Production based business services
7. Sporting and recreational goods and services.

5.4.6 Population related public services

According to 2006 census data around 56,100 people are employed in population related public services in the North-West, predominantly in education and health. Population growth, government policy and demographic change drive employment in these industries. Although public administration employment for the sub-region is comparable with the metropolitan average, the North-West lags in higher order public administration jobs including state agencies with metropolitan wide functions. The departure of the RTA from Blacktown has exacerbated this under-representation. Sub-regional jobs in public administration are focused on provision of services to the local population in areas such as local government, housing, disabilities and community services. The North-West network of education institutions includes UWS university campuses at Werrington, Kingswood and Hawkesbury, and TAFE colleges in Penrith, Blacktown, Mt. Druitt, Hawkesbury and the Blue Mountains. Sub-regional hospitals are located at Blacktown, Nepean, Windsor, Mt Druitt and Katoomba, while general medical practices and dental services are dispersed throughout the sub-region. Childcare and community health services are also important.

5.4.7 Tourism, culture, recreation and personal services

These industries are relatively undeveloped, with the important exception of the Blue Mountains, where tourism is a major industry. Based on 2006 census data, the sub-region employed around 14,000 people in accommodation and food services, around 2,500 people in arts and recreation, and around 9,300 people in other services. Major activities include accommodation, cafes and restaurants, sports grounds and facilities and hairdressing. As the sub-region grows, more employment opportunities will be generated in these activities.

Important opportunities for the future include eco-tourism, lifestyle products and cultural industries. Major cultural and recreational facilities include the Joan Sutherland Performing Art Centre, Panthers Club and the Blacktown Arts Centre.

5.5 Conclusion

This chapter has emphasised the importance of the two sub-regional economies to the Sydney metropolitan economy. The sub-regions are expected to play a significant role in Sydney's employment future, with the North-West forecast to experience the largest net increase in jobs of any sub-region in the metropolitan economy, and West-Central forecast to experience the third largest increase of Sydney's ten sub-regions. The two sub-regions are distinctive and they face different challenges. Most of West-Central's net employment growth is forecast to be accommodated in five strategic centres, based on the premise that the sub-regions will successfully undergo a transition to an important service-based economy. West-Central is also Sydney's most significant manufacturing area though employment in this sector is forecast to continue to decline. This decline contributed to an expectation for a relatively lower net job forecast increase of 61,000 jobs. The strong employment forecasts for the North-West (130,000 net increase by 2031) are largely based on population induced growth as well as high employment growth in existing and proposed business parks. It is important to emphasise that no outlying sub-region in the metropolitan area has experienced employment increases in the past as significant as forecast for the North-West sub-region to 2031. Both sub-regions confront a number of impediments to growth including higher energy prices, infrastructure provision, skills shortages, and insufficient competitive industry clusters.

Chapter 8 explores alternative scenarios for employment futures for the two sub-regions, suggesting that other future employment outcomes should be considered.

We now turn to a detailed analysis of industry and occupational shifts in the Western Sydney economy. These are presented in the following chapter.

6 Labour market analysis

6.1 Chapter outline

This chapter presents the detailed analysis of labour market changes in Western Sydney. The analysis concentrates on the 1996 to 2006 period coinciding with the national censuses. Due to data availability at the time of analysis, much of the presentation is based on household labour market data rather than work locations or destination data. However some destination (or actual jobs) data have been processed. This distinction is clear in the titles to tables and figures and the reader should be alert to the differences.

The chapter is in two parts. This first part presents a summary analysis while part two presents the detailed data analysis.

6.2 Observations from the Fagan et al 2004 study

In chapter 2 we draw in detail on the work of Fagan et al (2004) who undertook an extensive analysis of Western Sydney's labour market based on the 2001 and preceding censuses, and on other observations. Here we recall five key findings from the Fagan et al study. These are also summarised in Fagan and Dowling (2005).

First, despite recognition in the 1988 Sydney Metropolitan Strategy of the need for jobs growth in the outer suburban areas of Sydney, little attempt was made prior to the development of the 2005 Metropolitan Strategy to provide the necessary infrastructure or employment lands, or even to set employment targets to achieve the suburbanisation of jobs ambition.

Second, a consequence of this neglect has been the dispersed nature of employment growth in Western Sydney over the past two decades. In a context where public transport provision has lagged, even deteriorated, Western Sydney has experienced a growing reliance on private motor vehicles for the journey to work. Together, these two processes of neglect or public policy failure have produced daily, car-based patterns of work journeys that are increasingly complex, often chaotic, and environmentally unsustainable.

Third, despite the suburbanisation of employment in some sectors, notably in manufacturing industry and basic services, the combination of de-industrialisation and rapid labour force growth has stalled moves towards regional self-sufficiency in jobs provision. By 2001 there were 80 jobs for every 100 resident Western Sydney workers. This is a growth from a rate of 67 per 100 in 1971 and 73 per 100 in 1981. Yet the ratio of 80 per 100 was reached in 1991 without improvement in the ratio thereafter. In fact, by 2006, the census following the Fagan et al study, the ratio fell to 76.3 Western Sydney jobs per 100 resident workers. In other words, as we note in chapter 2, the goal of improved self-sufficiency in jobs is not being realised.

Fourth, Fagan et al identified a severe lag in employment growth in the banking, finance and business services sectors in contrast to the rapid employment growth that had occurred in these sectors in Sydney's CBD and its eastern and inner city suburbs. This lag continues.

Fifth, Fagan et al note somewhat sardonically that an exception to the absence of employment advances for Western Sydney in these high growth sectors was the employment performance of the Norwest business park in the Baulkham Hills local government area. Fagan et al note that the siting of this park could be interpreted as contrary to the 1988 Metropolitan Strategy's policy of concentration of employment development in Western Sydney's regional and sub-regional centres rather than in dispersed new locations. Sometimes there is gain from unexpected quarters.

6.3 A note on national employment trends

In a significant observation of changes in the national economy over the last thirty years, Reserve Bank governor, Glenn Stevens, notes that the two most striking changes that have occurred in the structure of the Australian economy since the mid 1970s have been the decline in the share of GDP provided by manufacturing industry and the rising contribution by the financial and business services sector (see table 6.1). This trend, Stevens notes, has been common across all developed nations.

Beyond these two shifts, Stevens adds, not all that much has changed at the broad structural level over this long period. Australia had a substantial services sector in the 1970s and still does today. As we reveal in the analysis in this chapter for the labour market in Western Sydney, however, there remains an over-representation of manufacturing industry employment in the region – in terms of both Western Sydney households' supply of labour market and actual jobs located in Western Sydney – and an under-representation of jobs in the finance and business services sectors.

Table 6.1 Structure of Australia's economy (share of GDP; percent)

	1977	2007
Manufacturing	16.4	10.1
Financial, property and business services	12.4	19.5
Wholesale and retail trade	11.1	10.3
Education, health and community services	9.2	10.0
Utilities and transport	6.6	6.8
Construction	6.3	6.8
Mining	5.9	6.8
Government administration and defence	4.9	3.9
Rural	3.7	2.1
Communication services	0.7	2.7
Other	22.9	21.2

Source: Stevens (2008)

Moreover, in additional analysis for this study, we note that the NSW state economy as a whole continues to experience the longer term trends identified by Stevens. ABS census data show that in the decade from 1996 to 2006 the major employment growth sectors in the NSW economy were finance and insurance, health and community services and property and business services. Other than agriculture, the only sector that experienced significant employment decline in NSW was manufacturing.

Importantly, Stevens stresses that the last thirty years has been a period of relative prosperity for the Australian nation with prolonged economic growth averaging 3.4% over the 30 year period. This growth has been particularly strong since the early 1990s. A key national outcome, according to Stevens, has been a long term decline in the rate of unemployment, now at its lowest level nationally since 1974.

The implication of this observation of extant prosperity is that national economic conditions have for some years now presented the opportunity, if not the stimulus, for the Western Sydney regional economy to undertake structural adjustment or shift its employment concentrations from those sectors, especially the goods production sectors, with relatively poor employment outlooks.

6.4 Spatial variations in labour market and growth

Tables 6.2, 6.3, 6.4 and 6.5 show the variations in growth of the labour force across Western Sydney between 1996 and 2006. As one would expect, the highest rates of labour force growth are in the areas of highest population growth. There is also evidence of stronger labour force growth rates in the north of the region compared to the south.

Table 6.2 shows the LGAs with the most significant labour force growth ranked by absolute numbers. Blacktown, Baulkham Hills and Liverpool are the leading LGAs reflecting, of course, their large size as LGAs, but also their significant levels of population growth.

Table 6.2 Leaders: Labour force growth, absolute change, 1996 to 2006

LGA	Change (+)	Comment
Blacktown	20,761	M & F
Baulkham Hills	20,133	M & F
Liverpool	18,009	M & F
Camden	9,261	M & F
Penrith	8,921	M & F

Source: Calculated from ABS census

Table 6.3 shows the LGAs with the most significant labour force growth rates ranked by percentage rates of change between 1996 and 2006. Here we observe the higher rates of labour force growth in the outer LGAs where there have been higher rates of population growth (Camden, Liverpool, Baulkham Hills and Wollondilly). We also observe the high growth rate in the West-Central LGA, Auburn, indicating growing labour force participation rates in this area as well as a shift towards a younger demographic profile associated with the increase in new medium density housing in the LGA.

Table 6.3 Leaders: Labour force growth, percentage change, 1996 to 2006

LGA	Change (+%)	Comment
Camden	60.6	M & F
Liverpool	36.4	M & F
Auburn	33.0	M & F
Baulkham Hills	31.9	M & F
Wollondilly	31.2	M & F

Source: Calculated from ABS census

These specific observations match the patterns that we reveal for the metropolitan area as a whole. These are shown in table 6.4. Whereas the labour force growth rate for the metropolitan area (SSD) between 1996 and 2006 was 13.1% the WSROC councils experienced a 16.0% growth rate with higher rates still in the North-West (18.9%) and South-West (25.7%) sub-regions. Significantly, though, the West-Central sub-region recorded a labour force growth rate of just 8.1%, a rate which was significantly below the metropolitan average for the period.

Table 6.4 Labour force growth, percentage changes, 1996 to 2006

Territory	Change (+%)
WSROC	16.0
West-Central	8.1
North-West	18.9
South-West	25.7
SSD	13.1

Source: Calculated from ABS census

The lagging growth of the West-Central sub-region is manifest in a particular way at LGA level. Table 6.5 shows the LGAs from West-Central which have experienced below average growth in the labour force between 1996 and 2006. These are Fairfield, Bankstown and Holroyd. Except for Holroyd, the slow growth rates for these LGAs are explained by stagnancy in male workforce numbers in these LGAs. In other words, the limited workforce growth that is occurring in Fairfield and Bankstown is explained by the increase in females in the workforce rather than by across the board growth.

Table 6.5 Laggers: Labour force growth, percentage change, 1996 to 2006

LGA	Change (+%)	Comment
Fairfield	2.7	Males stagnant
Bankstown	4.8	Males stagnant
Campbelltown	6.3	Males stagnant
Hawkesbury	8.4	Males stagnant
Holroyd	8.9	M & F

Source: Calculated from ABS census

The other lagging growth LGAs are Campbelltown and Hawkesbury. Again we can point to stagnating growth rates in the male workforce domiciled in these LGAs, leaving growth in the female workforce as the main explanation for the growth that has occurred.

6.5 Summary comments

Analysis of census data, in general, shows little change in the relative industry and occupation structure of employment for Western Sydney residents in the decade 1996 to 2006. Where there has been change this has involved, in general, a pronouncement of pre-existing industry and occupation concentrations rather than a growing participation in the industry and occupation categories where Western Sydney has been traditionally under-represented.

Our comments are drawn from the detailed tables and figures presented in part two of this chapter. The maps at the end of this section clarify the spatial extent of the location quotient distribution in 2006 for the designated actors.

6.5.1.1 *Overall trends*

The Western Sydney labour force 1996 to 2006 grew by 110,209 jobs, an increase of 16.5%. This compares to an increase of 13.1% for the Sydney Statistical District (SSD).

The above average labour force growth was not distributed evenly across Western Sydney however. As noted above, average growth was concentred in the higher population growth areas (Camden, Wollondilly) and in the Auburn, Baulkham Hills, Blacktown and Liverpool LGAs. Eight LGAs recorded less than average growth, with the older industrial LGAs (Bankstown, Fairfield, Holroyd, Parramatta) significantly below the SSD level. Hawkesbury, Penrith and Campbelltown also performed poorly.

6.5.1.2 *Industry trends*

Our analysis shows total workforce employment by SLA for 1996, 2001 and 2006. Calculations of absolute and percentage change are made for each inter-censal period. In addition, a location quotient is calculated for each census date. A location quotient is a relative measurement device. A location quotient equal to 1.0 reveals that the proportion of a SLA's workforce in that industry category is the same as the proportion for the Sydney Statistical Division (SSD) as a whole. A location quotient of 1.2 reveals that an SLA's workforce is 20% over-represented in that industry category compared to the workforce distribution by industry for the SSD as a whole. In other words, the location quotients reveal the extent to which there is under-representation or over-representation in an area's labour force segments or sectors compared with Sydney as a whole.

Our first set of comments on industry trends refers to those industry categories where Western Sydney is over-represented compared to the SSD, in other words, where the location quotient is typically above 1.0. It can be observed that the general trend among these industry categories for Western Sydney 1996 to 2006 is for the sub-regions to hold their above average concentration levels.

Some specific observations about the areas where Western Sydney is over-represented can be made.

1. From 1996 to 2006 the manufacturing workforce rose in South-West Sydney (2392) and North-West Sydney (1335) but declined substantially in West-Central (-6196). The major manufacturing workforce rises were in Liverpool (1439) and Baulkham Hills (1092) while the major falls occurred in Fairfield (2800) and Bankstown (1470). Location quotient changes reflect these upward and downward moves

2. The construction workforce between 1996 and 2006 grew substantially across Western Sydney in both absolute and relative terms. This shows the strong relationship between this sector and the growth of population and, therefore, of the number of new dwellings in Western Sydney

3. Likewise, the retail trade workforce grew substantially across Western Sydney between 1996 and 2006 in both absolute and relative terms. Again this shows the strong correlation between employment in this industry sector and the growth of the Western Sydney population

4. So too, the transport, postal and warehousing workforce, a sector also correlated positively with employment growth, grew substantially across Western Sydney between 1996 and 2006 in both absolute and relative terms

5. The 'other services' workforce between 1996 and 2006 shows fluctuating levels and direction of change across the SLAs with an overall insignificant level of change in relative terms across the decade.

In summary, then, for the industry sectors where Western Sydney is over-represented compared to the Sydney Statistical District (SSD) as a whole, there has not been a reduction of Western Sydney's position in either absolute or relative terms. In three of these sectors (construction, retail trade and transport, postal and warehousing) Western Sydney has strengthened its concentrations and therefore, arguably, its continued sectoral dependence, bearing in mind, though, these latter concentrations would be exacted in a strongly growing urban region.

The second set of comments on industry trends refers to those industry categories where Western Sydney is under-represented compared to the SSD, in other words, where the location quotient is typically below 1.0. In general, it can be observed that among these industry categories Western Sydney continues to under-perform and made little or no headway in the decade 1996 to 2006 to improve its residents' share of Sydney employment across a wider range of industry groups.

Some specific observations about the areas where Western Sydney is under-represented or where there is growth potential can be made.

1. The accommodation and food services workforce between 1996 and 2006 has grown substantially in absolute terms but only marginally in relative terms

2. The information, media and telecommunications workforce from 1996 to 2006 has witnessed a general fall in both absolute and relative terms

3. The finance and insurance workforce between 1996 and 2006 has experienced a small increase in absolute terms but has fallen further behind in relative terms

4. The rental hiring and real estate services workforce between 1996 and 2006 has seen increases in absolute terms but a flat performance in relative terms

5. The administrative and supportive services workforce between 1996 and 2006 shows substantial absolute growth as well as a general increase across the SLAs in relative terms. This is the only industry sector where there has been a substantial increase in Western Sydney's relative position in the SSD labour market

6. The professional, scientific and technical services workforce between 1996 and 2006 has experienced substantial growth in absolute numbers but only a marginal increase in relative terms

7. Both the public administration and safety and the education and training sectors show marginal increase in workforce numbers between 1996 and 2006 but flat performance in relative terms

8. In the health care and social assistance sector there has been significant growth in workforce between 1996 and 2006 and a slight improvement in relative terms

9. The arts and recreation workforce between 1996 and 2006 shows a small increase in both absolute and relative terms.

6.5.1.3 Occupation trends

Our analysis also shows total workforce by occupation by SLA for 1996, 2001 and 2006. The same set of calculations, including location quotients, is performed as described above for the analysis by industry.

Our first comments relate to occupation categories where Western Sydney's workforce matches the distribution for Sydney fairly closely. Our analysis shows that for clerical and administrative workers, for the community and personal services occupation, and for sales workers, the Western Sydney workforce between 1996 and 2006 has grown substantially although this growth has only been sufficient for the sub-regions to hold their relative share at 1996 levels.

An important understanding from employment growth in these sectors is that they show strong positive relationships between population growth and certain occupation categories. These types of positive correlations between workforce growth and population growth were observed above in the retailing, construction, and transport, postal and warehousing industry sectors.

The second set of comments refers to occupation categories where Western Sydney households are over-represented compared to the profile for the SSD as a whole.

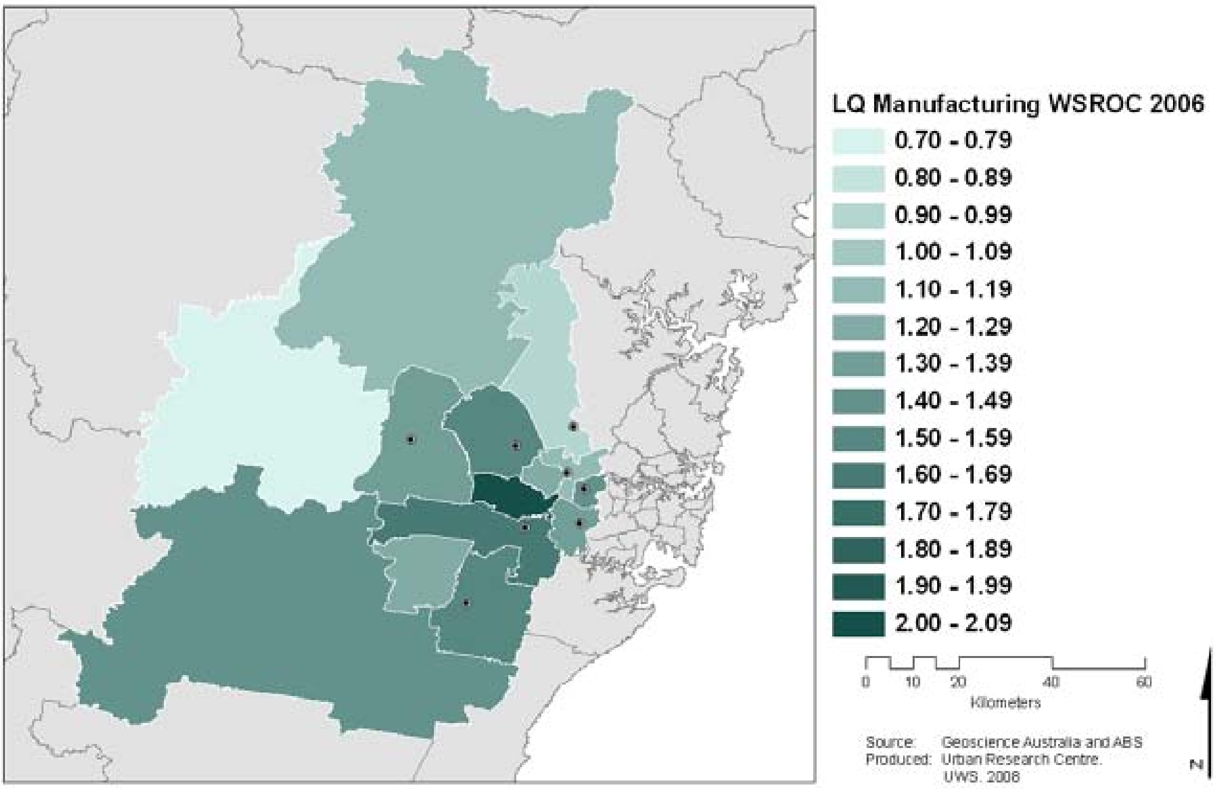
In the three occupation groups here, technicians and trades workers, machinery operators and drivers, and labourers, there has been moderate growth in the number of workers in Western Sydney between 1996 and 2006 with a small increase in relative share, with the exception of technicians and trades workers where the relative share has not changed. Notably, this relative stagnation occurred during a period of substantial national and state economic growth and involves the occupational fields where Western Sydney has traditional concentrations, chiefly associated with its manufacturing activities.

The third set of comments refers to the two occupation groups where Western Sydney households are substantially under-represented. In these two categories, managers and professionals, modest workforce growth in absolute numbers between 1996 and 2006 has not increased Western Sydney's relative share of SSD employment in these categories. Like the observations for industry sectors, then, there has been little or no re-composition of occupational mix in Western Sydney workforce between 1996 and 2006 in a direction that would improve Western Sydney householders' share of total SSD employment in the categories where Western Sydney is typically underrepresented.

6.6 Location quotient maps for key sectors

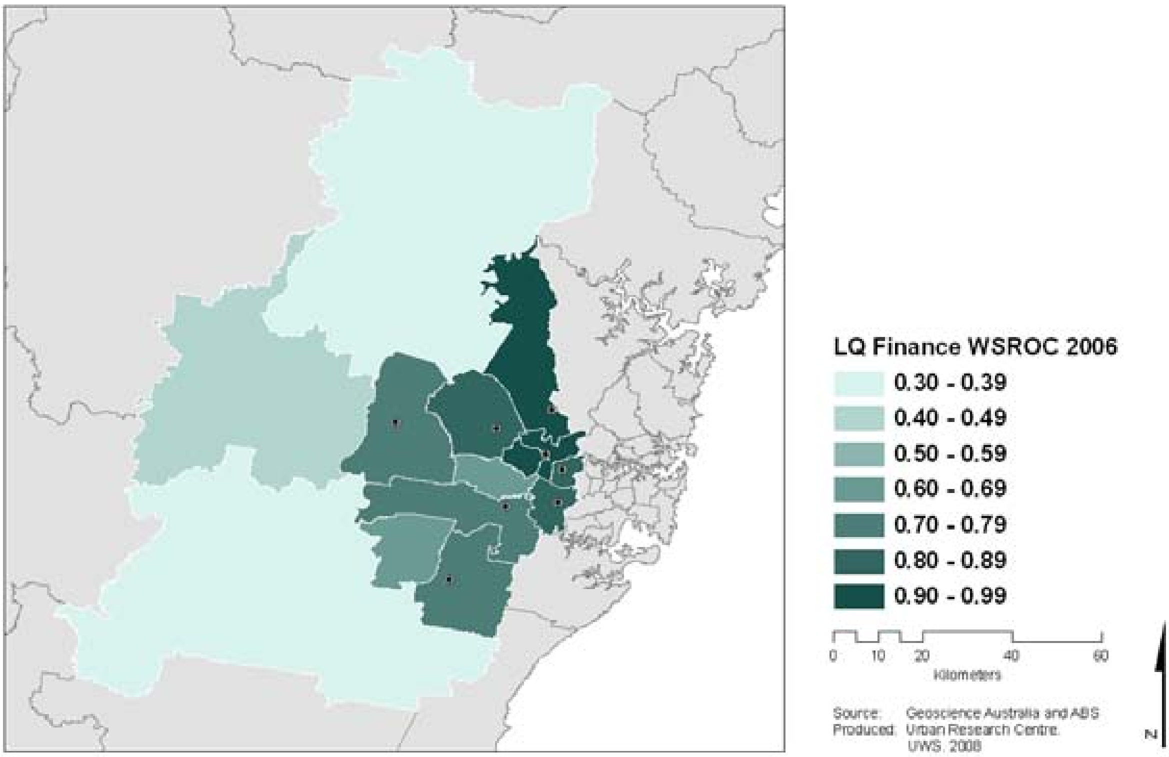
Figures 6.1 to 6.4 show location quotients for Western Sydney for key industry and occupation groups referred to in the sections above.

Figure 6.1 Location quotient for manufacturing, WSROC 2006



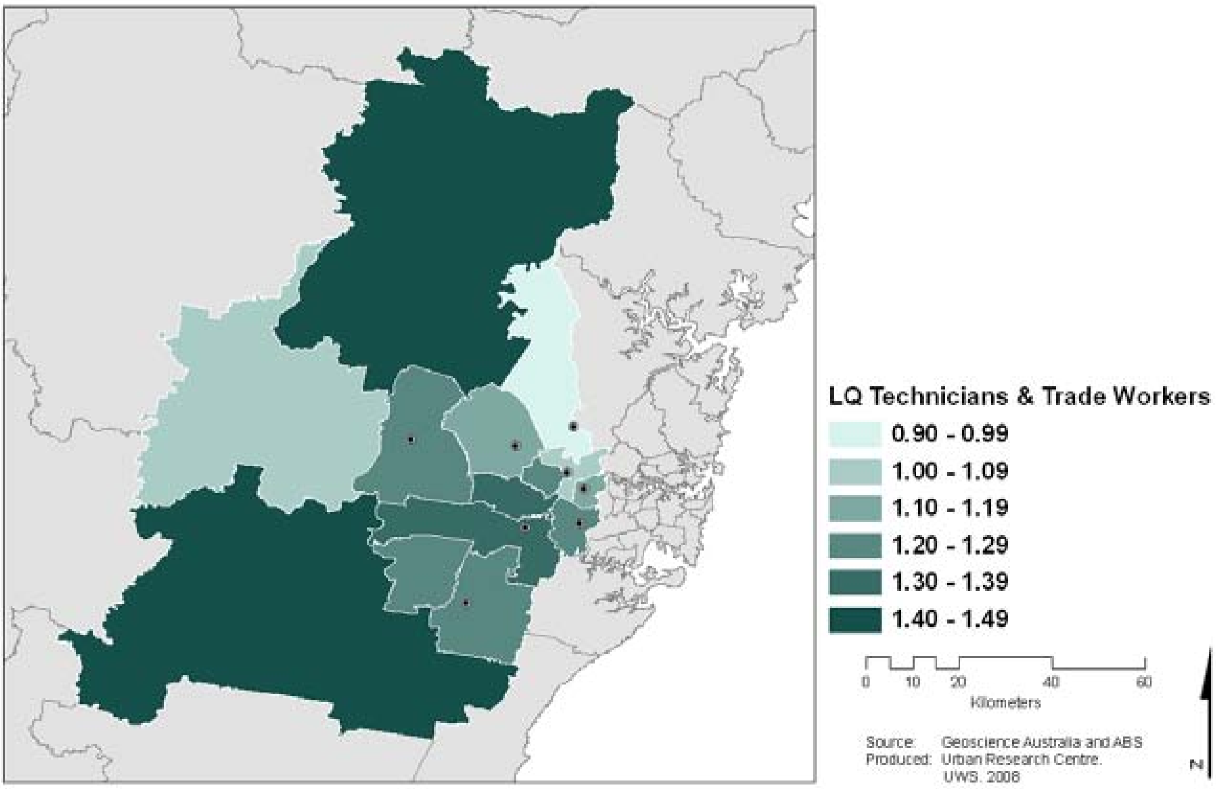
Source: Urban Research Centre 2008

Figure 6.2 Location quotient for finance, WSROC 2006



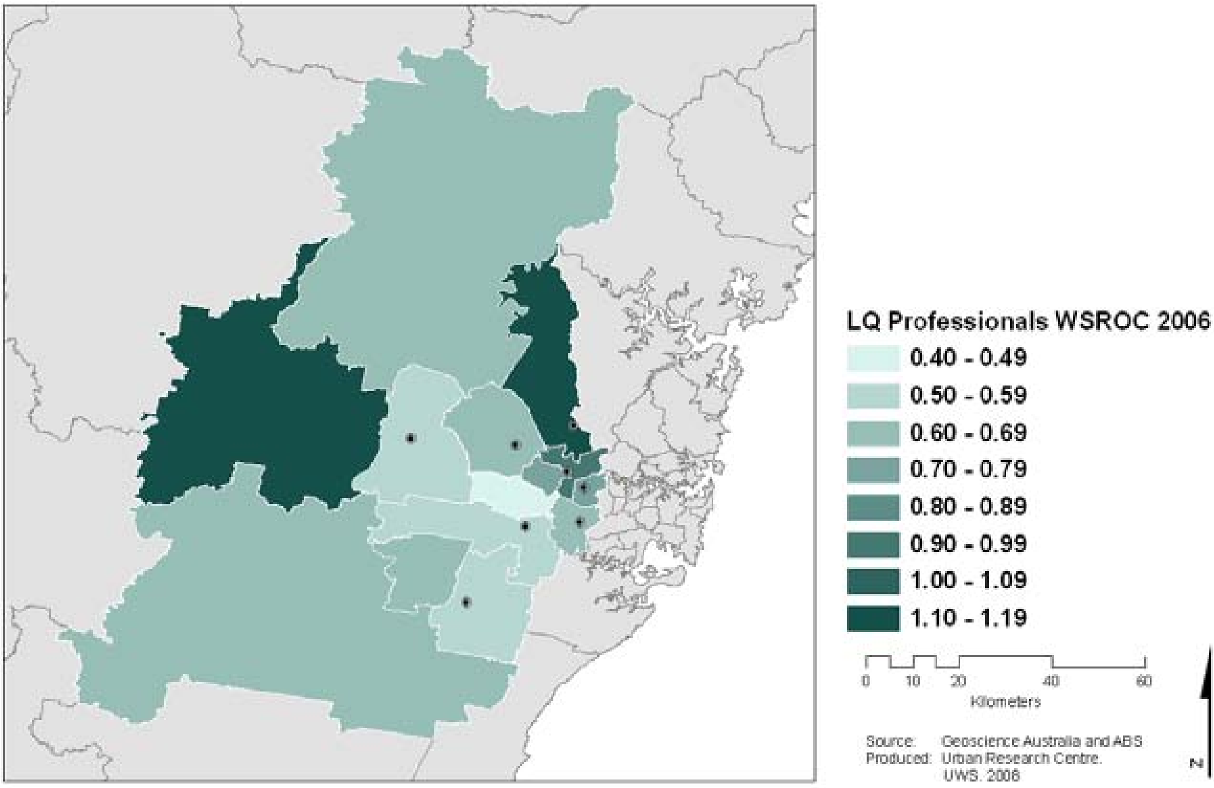
Source: Urban Research Centre 2008

Figure 6.3 Location quotient for technicians and trade workers, WSROC 2006



Source: Urban Research Centre 2008

Figure 6.4 Location quotient for professionals, WSROC 2006



Source: Urban Research Centre 2008

6.7 Changes for industry sectors and occupation groups by LGA

Tables 6.6 to 6.24 provide detailed analysis of the shifts in the Western Sydney workforce between 1996 and 2006 based on industry categorisations and LGAs. Tables 6.25 to 6.32 provide detailed analysis of the shifts in the Western Sydney workforce between 1996 and 2006 based on occupation categorisations and LGAs. These tables should be read in conjunction with the detailed analysis of labour changes contained in part two of this chapter.

Table 6.6 Workforce change and concentration in Agriculture, Western Sydney LGAs, 1996 to 2006

Industry analysis: Agriculture
Change Sydney Statistical Division 1996 to 2006: -23.3% (overwhelmingly in last five years)
Location Quotient Western Sydney 2006: 1.9; 4586 of 7130 in SSD
Leader Hawkesbury 1047 (LQ = 12.1)
Comment All outer LGAs have high LQs

Source: Calculated from ABS censuses

Table 6.7 Workforce change and concentration in Mining, Western Sydney LGAs, 1996 to 2006

Industry analysis: Mining
Change Sydney Statistical Division 1996 to 2006: -9.4%
Location Quotient Western Sydney 2006: 1.7; 2126 of 3564 in SSD
Leader Wollondilly 1198 (LQ = 65.1)

Source: Calculated from ABS censuses

Table 6.8 Workforce change and concentration in Manufacturing, Western Sydney LGAs, 1996 to 2006

Industry analysis: Manufacturing
Change Sydney Statistical Division 1996 to 2006: -8.1%
Location Quotient Western Sydney 2006: 1.7, with 99,267 of 173,876 in SSD
Leaders Bankstown 12,363 (LQ = 2.6) (h/hold -14.2%) Blacktown 13,887 (LQ = 1.8) (h/hold +2.1%) Fairfield 10,915 (LQ = 2.3) (h/hold -17.4%) Parramatta 9930 (LQ = 1.1) (h/hold -10.0%) Holroyd 9381 (LQ = 3.0) (h/hold -15.0%) Auburn 8347 (LQ = 2.0) (h/hold -8.3%) Baulkham Hills 4576 (LQ = 0.9) (h/hold +16.3%)

Source: Calculated from ABS censuses

Table 6.9 Workforce change and concentration in Electricity, gas, water Western Sydney LGAs, 1996 to 2006

Industry analysis: Electricity, gas, water
Change Sydney Statistical Division 1996 to 2006: +16.0%
Location Quotient Western Sydney 2006: 1.1; 5,931 of 15,031 in SSD
Leaders Blacktown 1859 (LQ = 2.74) dominates Penrith 804 (LQ = 1.76)

Source: Calculated from ABS censuses

Table 6.10 Workforce change and concentration in Construction, Western Sydney LGAs, 1996 to 2006

Industry analysis: Construction
Change Sydney Statistical Division 1996 to 2006: +29.0%
Location Quotient Western Sydney 2006: 1.2; 37,423 of 90,654 in SSD
Leaders Blacktown 5309 (LQ = 1.3) Baulkham Hills 4519 (LQ = 1.7) Parramatta 4129 (LQ = 0.9) Penrith 3508 (LQ = 1.3) Bankstown 3232 (LQ = 1.1)

Source: Calculated from ABS censuses

Table 6.11 Workforce change and concentration in Wholesale trade, Western Sydney LGAs, 1996 to 2006

Industry analysis: Wholesale trade
Change Sydney Statistical Division 1996 to 2006: +5.8%
Location Quotient Western Sydney 2006: 1.2; 41,891 of 100,676 in SSD
Leaders Blacktown 6576 (LQ = 1.5) (h/hold -3.8%) Auburn 6121 (LQ = 2.6) (yet only 1654 h/holds) Parramatta 4850 (LQ = 0.9) (h/hold -10.6%)

Source: Calculated from ABS censuses

Table 6.12 Workforce change and concentration in Retail, Western Sydney LGAs, 1996 to 2006

Industry analysis: Retail
Change Sydney Statistical Division 1996 to 2006: +23.9%
Location Quotient Western Sydney 2006: 1.1; 73,490 of 189,033 in SSD
Leaders Baulkham Hills 9995 (LQ = 1.8) Blacktown 9861 (LQ = 1.2) Penrith 7789 (LQ = 1.4) Parramatta 7679 (LQ = 0.8)
Comment Also high LQs for outer centres

Source: Calculated from ABS censuses

Table 6.13 Workforce change and concentration in Accommodation & food, Western Sydney LGAs, 1996 to 2006

Industry analysis: Accommodation & food
Change Sydney Statistical Division 1996 to 2006: +16.2%
Location Quotient Western Sydney 2006: 0.9; 32,045 of 106,011 in SSD
Leaders Blacktown 3939 (LQ = 0.82) Parramatta 3816 (LQ = 0.7) Penrith 3781 (LQ = 1.2)
Comment Blue Mountains very high LQ = 2.03

Source: Calculated from ABS censuses

Table 6.14 Workforce change and concentration in Transport, postal & warehousing, Western Sydney LGAs, 1996 to 2006

Industry analysis: Transport, postal & warehousing
Change Sydney Statistical Division 1996 to 2006: +9.82%
Location Quotient Western Sydney 2006: 1.1; 34,655 of 90,792 in SSD
Leaders Blacktown 6424 (LQ = 1.6) Bankstown 4614 (LQ = 1.5) Auburn 3583 (LQ = 1.7) Parramatta 3682 (LQ = 0.8)

Source: Calculated from ABS censuses

Table 6.15 Workforce change and concentration in Information, media & telecommunications, Western Sydney LGAs, 1996 to 2006

Industry analysis: Information, media & telecommunications
Change Sydney Statistical Division 1996 to 2006: -3.6%
Location Quotient Western Sydney 2006: 0.4; 7,800 of 53,677 in SSD
Leaders (in a poorly regional performing group) Parramatta 2088 (LQ = 0.8) Bankstown 1170 (LQ = 0.6) Auburn 1124 (LQ = 0.9)

Source: Calculated from ABS censuses

Table 6.16 Workforce change and concentration in Finance & insurance, Western Sydney LGAs, 1996 to 2006

Industry analysis: Finance & insurance
Change Sydney Statistical Division 1996 to 2006: +21.0%
Location Quotient Western Sydney 2006: 0.4; 18,157 of 118,966 in SSD
Leader Parramatta 8263 (LQ = 1.35)

Source: Calculated from ABS censuses

Table 6.17 Workforce change and concentration in Rental, hiring & real estate, Western Sydney LGAs, 1996 to 2006

Industry analysis: Rental, hiring & real estate
Change Sydney Statistical Division 1996 to 2006: +24.1%
Location Quotient Western Sydney 2006: 1.2; 9937 of 34,076 in SSD
Leaders Parramatta 1480 (LQ = 0.8) Blacktown 1154 (LQ = 0.8) Baulkham Hills 1134 (LQ = 1.11)

Source: Calculated from ABS censuses

Table 6.18 Workforce change and concentration in Administrative & support services, Western Sydney LGAs, 1996 to 2006

Industry analysis: Administrative & support services
Change Sydney Statistical Division 1996 to 2006: +17.9%
Location Quotient Western Sydney 2006: 0.8; 14,703 of 54,318 in SSD
Leaders Parramatta 2691 (LQ = 1.0) Blacktown 2236 (LQ = 0.9) Liverpool 1679 (LQ = 1.1)

Source: Calculated from ABS censuses

Table 6.19 Workforce change and concentration in professional, scientific & technical, Western Sydney LGAs, 1996 to 2006

Industry analysis: professional, scientific & technical
Change Sydney Statistical Division 1996 to 2006: +23.3%
Location Quotient Western Sydney 2006: 0.5; 25,930 of 161,671 in SSD i.e. good numbers but poor LQ
Leaders Baulkham Hills 5325 (LQ = 1.1) Parramatta 5026 (LQ = 0.6)

Source: Calculated from ABS censuses

Table 6.20 Workforce change and concentration in Public administration & safety, Western Sydney LGAs, 1996 to 2006

Industry analysis: Public administration & safety
Change Sydney Statistical Division 1996 to 2006: +20.3%
Location Quotient Western Sydney 2006: 1.1; 37,368 of 102,127 in SSD
Leaders Parramatta 10,227 (LQ = 1.9) Penrith 4146 (LQ = 1.3) Blacktown 3883 (LQ = 0.8) Liverpool 3682 (LQ = 1.3)

Source: Calculated from ABS censuses

Table 6.21 Workforce change and concentration in Education & training, Western Sydney LGAs, 1996 to 2006

Industry analysis: Education & training
Change Sydney Statistical Division 1996 to 2006: +22.9%
Location Quotient Western Sydney 2006: 1.1; 48,714 of 131,549 in SSD
Leaders (with most LGAs > 1.0) Blacktown 7164 (LQ = 1.2) Penrith 5550 (LQ = 1.4) Baulkham Hills 4705 (LQ = 1.2) Bankstown 4727 (LQ = 1.1)

Source: Calculated from ABS censuses

Table 6.22 Workforce change and concentration in Health care & social assistance, Western Sydney LGAs, 1996 to 2006

Industry analysis: Health care & social assistance
Change Sydney Statistical Division 1996 to 2006: +25.2%
Location Quotient Western Sydney 2006: 1.1; 62,987 of 178,430 in SSD
Leaders Parramatta 15,044 (LQ = 1.6) Liverpool 6780 (LQ = 1.3) Penrith 6736 (LQ = 1.2) Blacktown 6311 (LQ = 0.8)

Source: Calculated from ABS censuses

Table 6.23 Workforce change and concentration in Arts & recreation, Western Sydney LGAs, 1996 to 2006

Industry analysis: Arts & recreation
Change Sydney Statistical Division 1996 to 2006: 10.9%
Location Quotient Western Sydney 2006: 0.7; 6288 of 25,081 in SSD
Leaders Blue Mountains 354 (LQ = 1.5) Auburn (includes Olympic Park) 885 (LQ = 1.5) Parramatta 871 (LQ = 0.7) Penrith 681 (LQ = 0.9)

Source: Calculated from ABS censuses

Table 6.24 Workforce change and concentration in Other services, Western Sydney LGAs, 1996 to 2006

Industry analysis: Other services
Change Sydney Statistical Division 1996 to 2006: -4.3%
Location Quotient Western Sydney 2006: 1.1; 24,193 of 65,708 in SSD
Leaders Parramatta 3145 (LQ = 0.9) Blacktown 3076 (LQ = 1.0) Baulkham Hills 2341 (LQ = 1.2) Bankstown 2278 (LQ = 1.0) Penrith 2213 (LQ = 1.1)

Source: Calculated from ABS censuses

Table 6.25 Workforce change and concentration in Managers, Western Sydney LGAs, 1996 to 2006

Occupation analysis: Managers
Change Sydney Statistical Division 1996 to 2006: +20.6%
Location Quotient Western Sydney 2006: 0.88
Leaders Parramatta 10,300 (LQ = 0.8) Blacktown 9,200 (LQ = 0.9) Baulkham Hills 7,829 (LQ = 1.1) Bankstown 7,003 (LQ = 0.9)
Laggers In absolute terms the outer urban LGAs esp. Blue Mountains, Camden, Hawkesbury, Wollondilly, though LQs in these not a concern Campbelltown and Penrith low LQs

Source: Calculated from ABS censuses

Table 6.26 Workforce change and concentration in Professionals, Western Sydney LGAs, 1996 to 2006

Occupation analysis: Professionals
Change Sydney Statistical Division 1996 to 2006: +33.0%
Location Quotient Western Sydney 2006: 0.75
Leaders Parramatta 22,816 (LQ = 1.0) Blacktown* 12,591 (LQ = 0.6) Baulkham Hills* 11,562 (LQ = 0.9) * also have above average growth in h/hold data
Laggers Wollondilly (LQ = 0.5) Holroyd (LQ = 0.5) Fairfield (LQ = 0.6) Others with LQ < 0.7: Auburn, Bankstown, Blacktown, Camden, Hawkesbury

Source: Calculated from ABS censuses

Table 6.27 Workforce change and concentration in Technicians & trades, Western Sydney LGAs, 1996 to 2006

Occupation analysis: Technicians & trades
Change Sydney Statistical Division 1996 to 2006: -0.27%
Location Quotient Western Sydney 2006: 1.2
Leaders Blacktown 9879 (LQ = 1.1) Bankstown 9321 (LQ = 1.4) Parramatta 8769 (LQ = 0.9) Fairfield 7066 (LQ = 1.4) Plus high LQs in outer LGAs: Hawkesbury 1.6, Wollondilly 1.7, Camden 1.4
Note importance of the traditional industrial belt in this segment

Source: Calculated from ABS censuses

Table 6.28 Workforce change and concentration in Community & personal services, Western Sydney LGAs, 1996 to 2006

Occupation analysis: Community and personal services
Change Sydney Statistical Division 1996 to 2006: +27.6%
Location Quotient Western Sydney 2006: 1.0
Leaders Parramatta 6941 (LQ = 1.0) Blacktown 5403 (LQ = 0.9) Penrith 5096 (LQ = 1.2) **High LQs** Blue Mountains 1.9 Camden, Hawkesbury, Penrith all 1.2

Source: Calculated from ABS censuses

Table 6.29 Workforce change and concentration in Clerical & administrative, Western Sydney LGAs, 1996 to 2006

Occupation analysis: Clerical and administrative
Change Sydney Statistical Division 1996 to 2006: +2.5%
Location Quotient Western Sydney 2006: 1.1 (but slips below LQ = 1.0 the further west and south west one travels)
Leaders Parramatta 21,192 (LQ = 1.4) Blacktown 12,317 (LQ = 0.9) Baulkham Hills 9152 (LQ = 1.0) Auburn 7742 (LQ = 1.0)
Comment Blacktown with 15.0% and Baulkham Hills with 18.9% are also experiencing strong household labour force growth in this segment.

Source: Calculated from ABS censuses

Table 6.30 Workforce change and concentration in Sales, Western Sydney LGAs, 1996 to 2006

Occupation analysis: Sales
Change Sydney Statistical Division 1996 to 2006: +15.1%
Location Quotient Western Sydney 2006: 1.0
Leaders Blacktown 8339 (LQ = 1.1) Baulkham Hills 7053 (LQ = 1.4) Parramatta 6971 (LQ = 0.8) Penrith 6432 (LQ = 1.3) Bankstown 5777 (LQ = 1.0)

Source: Calculated from ABS censuses

Table 6.31 Workforce change and concentration in Machinery operators & drivers, Western Sydney LGAs, 1996 to 2006

Occupation analysis: Machinery operators & drivers
Change Sydney Statistical Division 1996 to 2006: -6.7%
Location Quotient Western Sydney 2006: 1.6
Leaders: Blacktown 10,109 (LQ = 2.3) Bankstown 6982 (LQ = 2.1) Fairfield 5906 (LQ = 2.3) Holroyd 5679 (LQ = 3.2)

Source: Calculated from ABS censuses

Table 6.32 Workforce change and concentration in Labourers, Western Sydney LGAs, 1996 to 2006

Occupation analysis: Labourers
Change Sydney Statistical Division 1996 to 2006: +9.1%
Location Quotient Western Sydney 2006: 1.4, with all LGAs except Parramatta and Baulkham Hills having LQs > 1.0; labour force growth 1996-2006 18.3%
Leaders: Blacktown 9026 (LQ = 1.6) Bankstown 6324 (LQ = 1.5) Parramatta 5999 (LQ = 0.9)

Source: Calculated from ABS censuses

6(2) Data Analysis

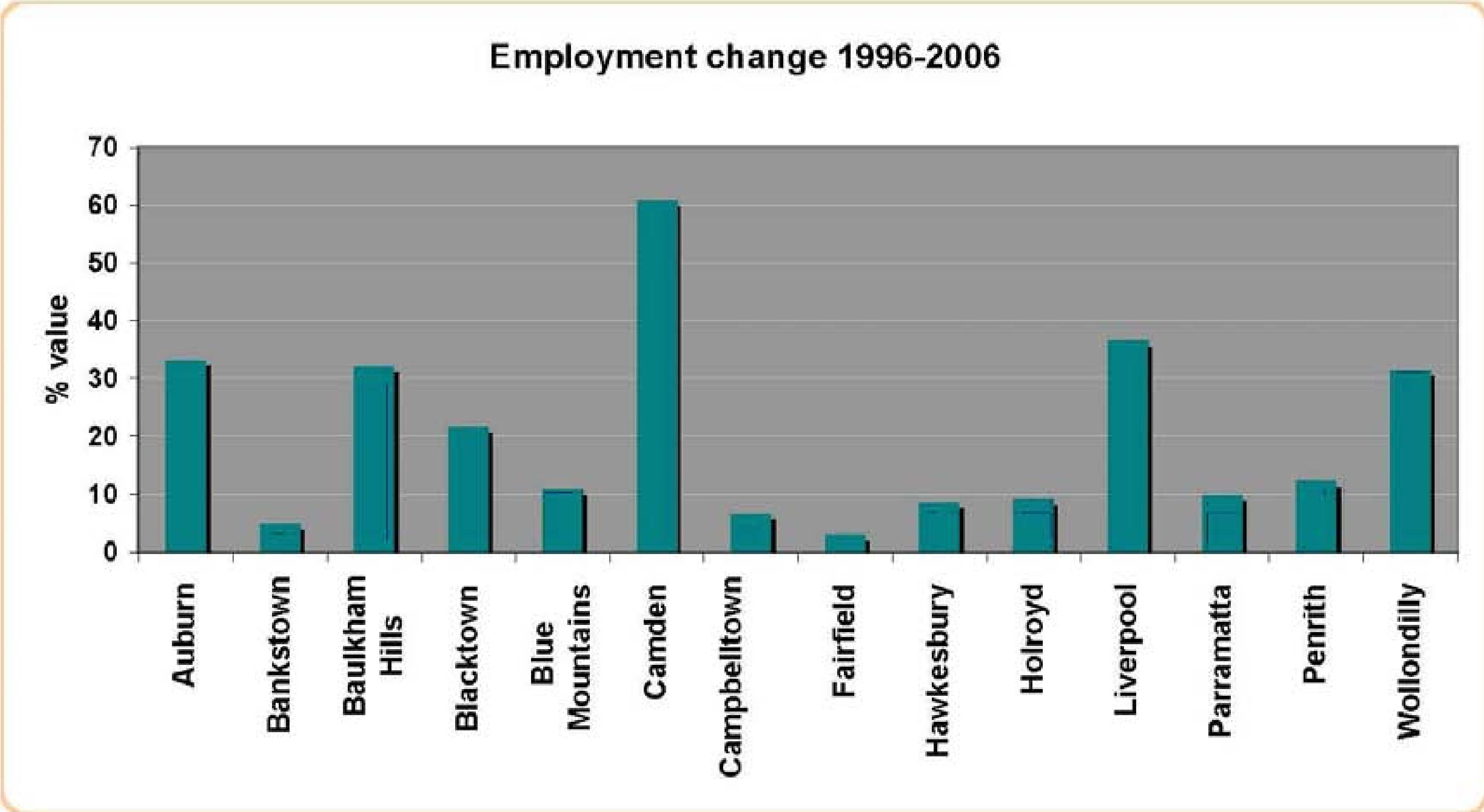
6.8 Total employment

Household data (1996 - 2006)

	Total Employment												
	1996			2001			2006			Abs. change		% change	
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	96-06	01-06	96-06	01-06
Auburn	10312	7071	17383	11439	7751	19190	13686	9434	23120	5737	3930	33.00	20.48
Bankstown	35697	26613	62310	36775	27836	64611	36901	28361	65262	2952	651	4.74	1.01
Baulkham Hills	34231	28852	63083	39914	34220	74134	44149	39067	83216	20133	9082	31.92	12.25
Blacktown	55250	41489	96739	60944	47933	108877	65039	52461	117500	20761	8623	21.46	7.92
Blue Mountains	16934	14456	31390	18180	16055	34235	18162	16555	34717	3327	482	10.60	1.41
Camden	8574	6706	15280	11887	9719	21606	13241	11300	24541	9261	2935	60.61	13.58
Campbelltown	33511	25584	59095	34418	27395	61813	34514	28327	62841	3746	1028	6.34	1.66
Fairfield	37924	25760	63684	38142	26671	64813	37921	27476	65397	1713	584	2.69	0.90
Hawkesbury	15448	11827	27275	16152	13086	29238	16090	13471	29561	2286	323	8.38	1.10
Holroyd	19964	14999	34963	20765	16190	36955	21326	16743	38069	3106	1114	8.88	3.01
Liverpool	28896	20624	49520	36637	27510	64147	38088	29441	67529	18009	3382	36.37	5.27
Parramatta	33245	26011	59256	34217	27245	61462	36261	28707	64968	5712	3506	9.64	5.70
Penrith	42046	32050	74096	45190	35896	81086	45349	37659	83008	8912	1922	12.03	2.37
Wollondilly	8423	6179	14602	9611	7417	17028	10509	8647	19156	4554	2128	31.19	12.50
WSROC	329947	249752	579699	358355	280393	638748	372972	299375	672347	-56630	-26835	15.98	5.26
WC	137142	100454	237596	141338	105693	247031	146095	110721	256816	-19220	-9785	8.09	3.96
NW	163909	128674	292583	180380	147190	327570	188789	159213	348002	-55419	-20432	18.94	6.24
SW	79404	59093	138497	92553	72041	164594	96352	77715	174067	-35570	-9473	25.68	5.76
GWS	380455	288221	668676	414271	324924	739195	431236	347649	778885	-110209	-39690	16.48	5.37
SSD	925230	750231	1675461	992044	824181	1816225	1020705	873952	1894657	-219196	-78432	13.08	4.32
NSW	1431553	1127322	2558875	1510026	1238370	2748396	1565915	1335567	2901482	342607	153086	13.39	5.57
Australia	4272051	3364268	7636319	4546783	3751823	8298606	4911136	4193048	9104184	1467865	805578	19.22	9.71

6.9 Employment change 1996 to 2006

Household data (1996 - 2006)



6.10 2006 destination data

Total number of jobs by **occupation**:

	1996	2001	2006	2006-1996	% 06-96
WSROC	301771	47410766	502055	-200284	66.37
WC	166781	25979085	234190	-67409	40.42
NW	115182	16789624	219099	-103917	90.22
SW	51191	10137633	109954	-58763	114.79
GWS	333154	52906342	563243	-230089	69.06

Total number of jobs by **industry**:

	1996	2001	2006	2006-1996	% 06-96
WSROC	301771	31174614	533270	-231499	76.71
WC	166781	18859569	265405	-98624	59.13
NW	115182	9278808	219099	-103917	90.22
SW	51191	6318949	109954	-58763	114.79
GWS	333154	34457326	594458	-261304	78.43

Total number of jobs by **manufacturing industry**:

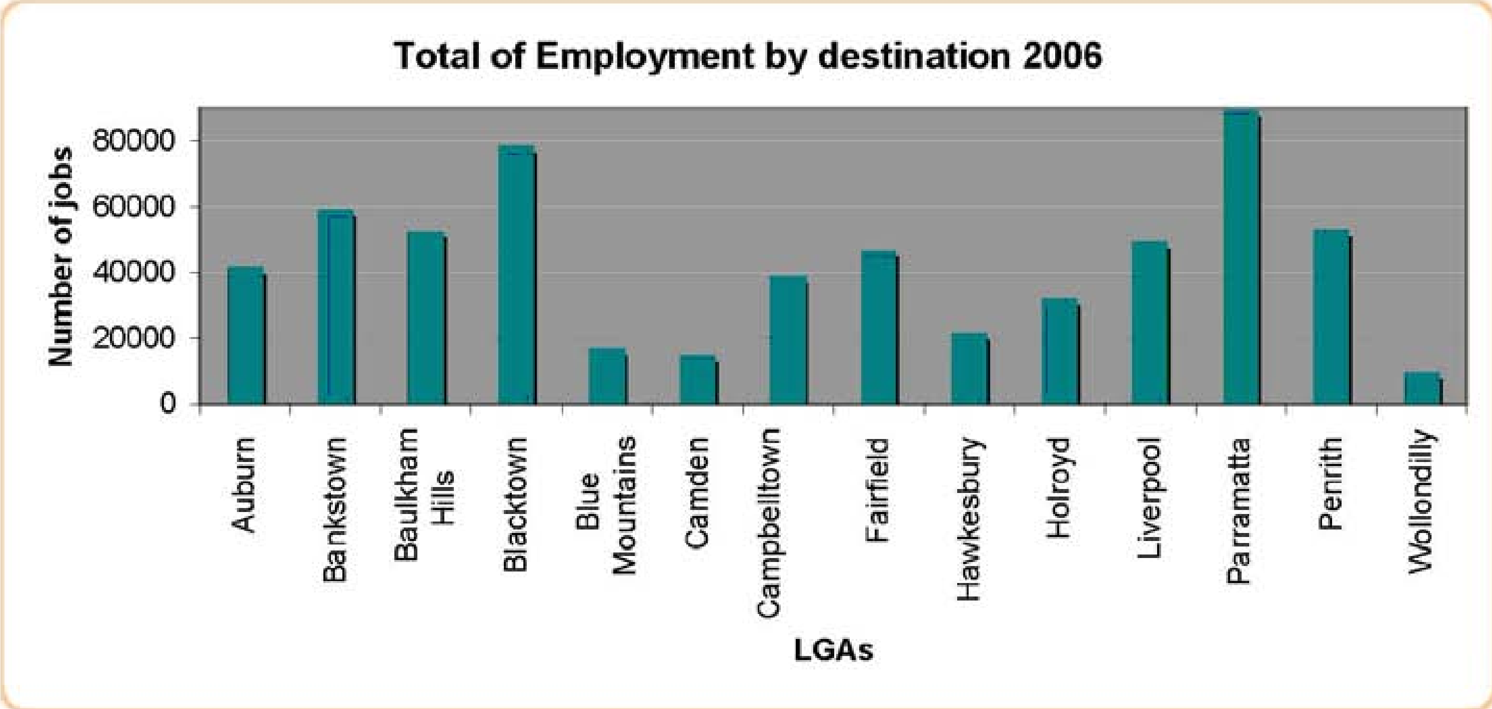
	1996	2001	2006	2006-1996	% 06-96
WSROC	61396	17881396	90001	-28605	46.59
WC	39607	12240600	53836	-14229	35.93
NW	16614	3758396	28145	-11531	69.41
SW	9821	3682200	17286	-7465	76.01
GWS	66042	19681196	99267	-33225	50.31

6.11 Total of employment by destination 2006

2006 Destination data

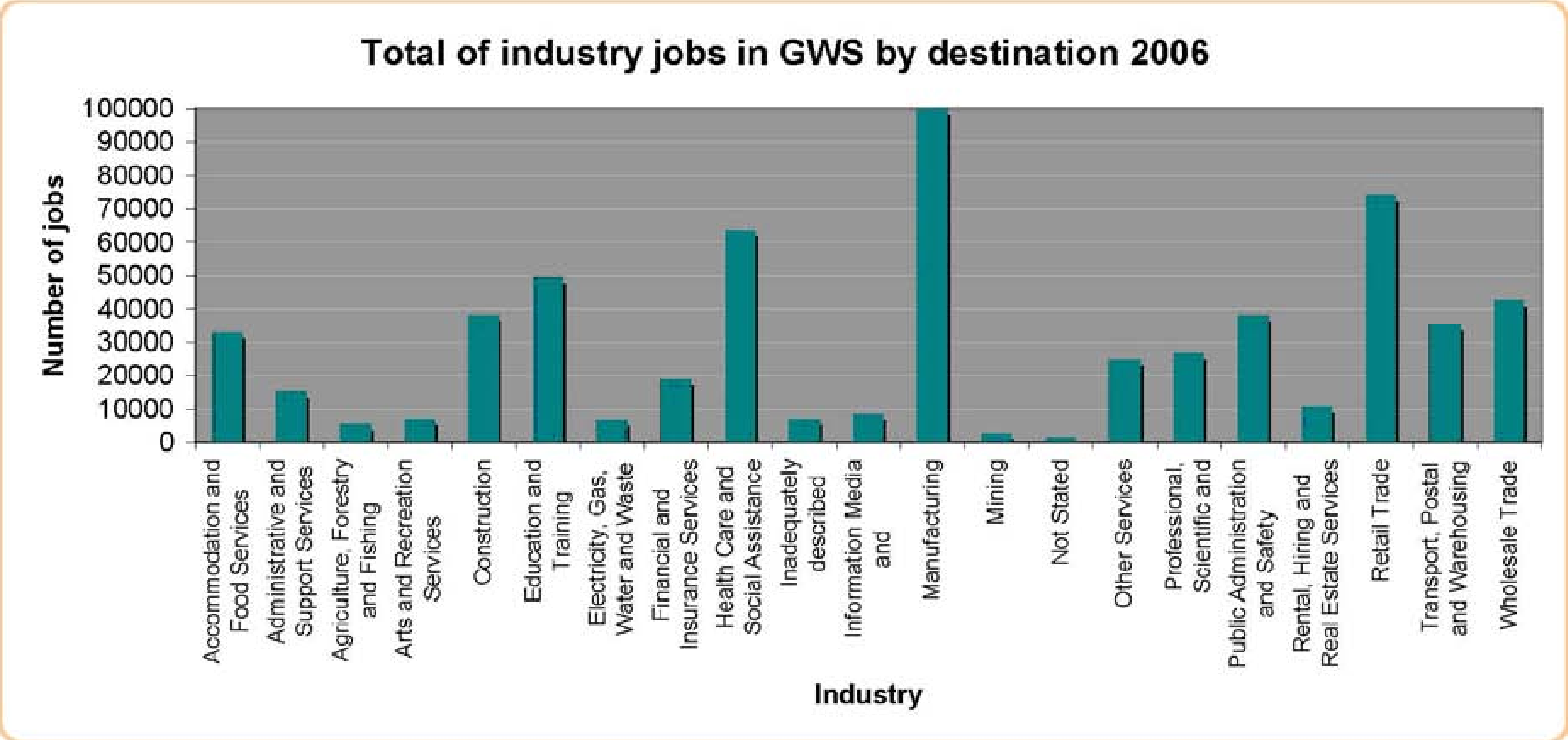
Total of Employment

LGA	Total
Auburn	40866
Bankstown	58459
Baulkham Hills	51882
Blacktown	77765
Blue Mountains	16219
Camden	14282
Campbelltown	37999
Fairfield	46063
Hawkesbury	20954
Holroyd	31215
Liverpool	48766
Parramatta	88802
Penrith	52279
Wollondilly	8907
WSROC	533270
WC	265405
NW	219099
SW	109954
GWS	594458
SydneySD	1723729



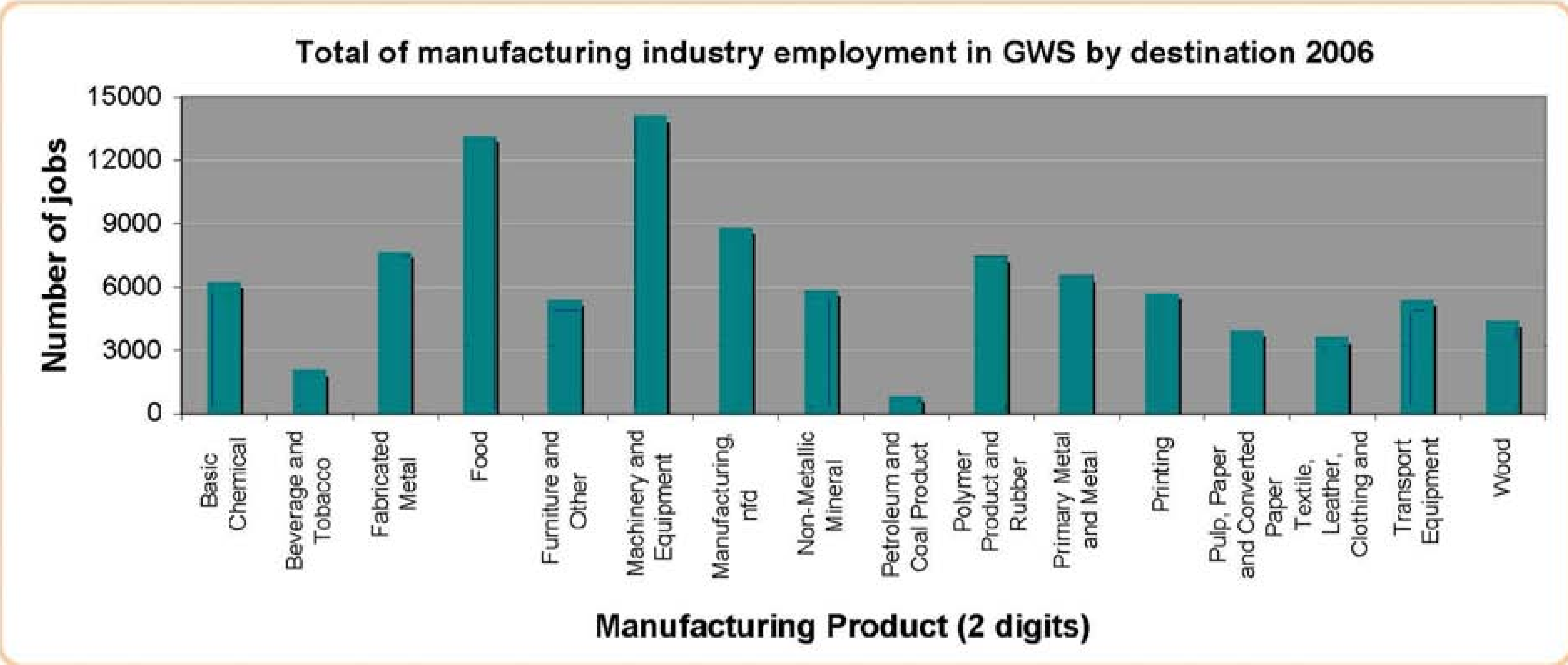
6.12 Total of industry jobs in GWS by destination 2006

2006 Destination data



6.13 Total of manufacturing industry employment in GWS by destination 2006

2006 Destination data



6.14 Totals of occupation employment in GWS by destination 2006

2006 Destination data

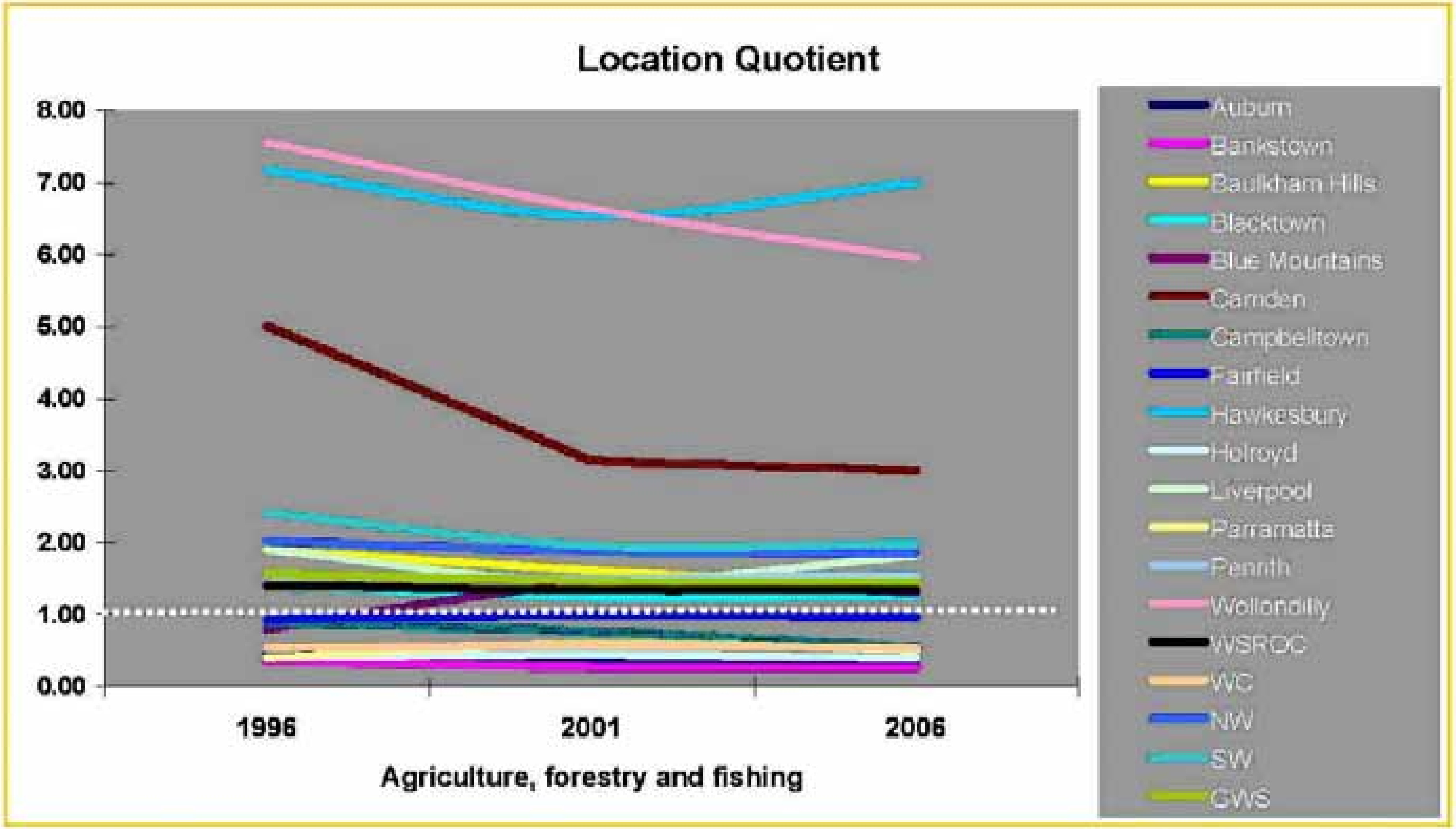
6.15 Industry

6.15.1 Agriculture, forestry and fishing

Industry per LGA

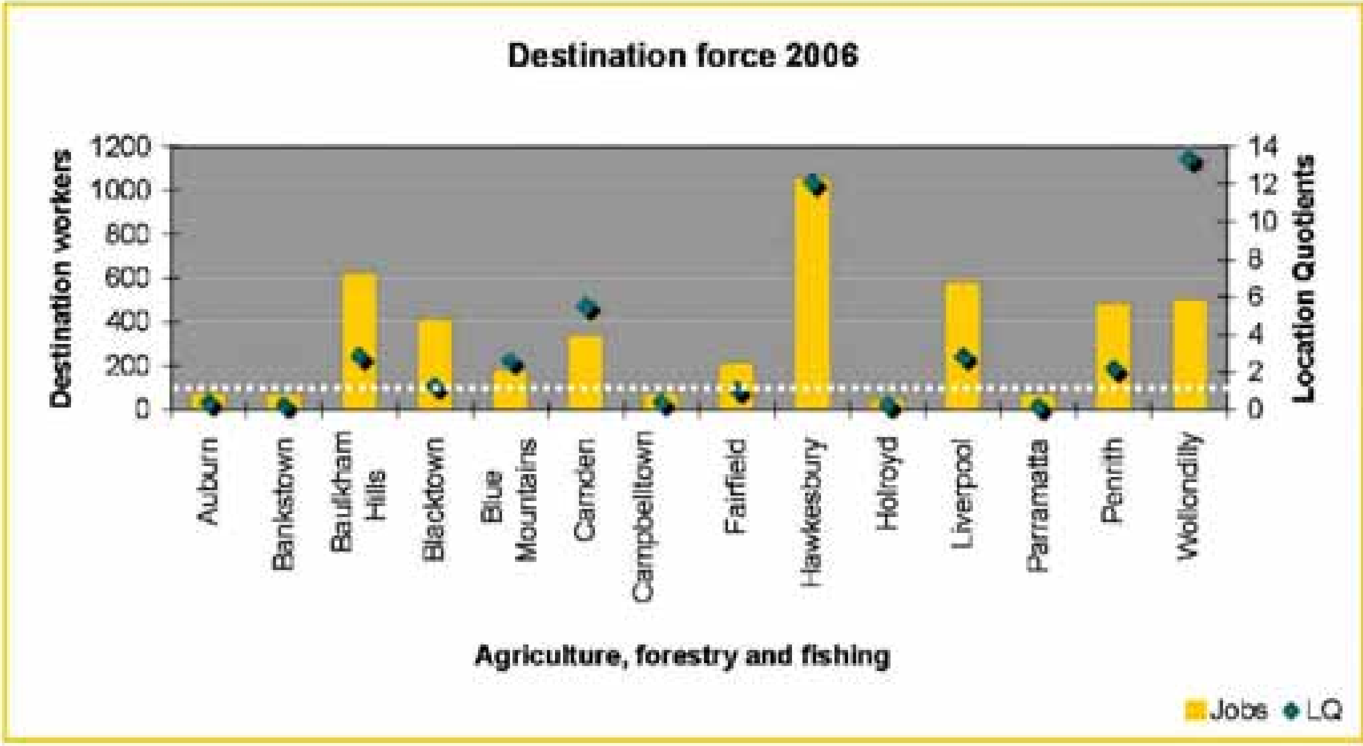
Household data (1996 - 2006)

	Agriculture, Forestry and Fishing														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01		**1996**	**2001**	**2006**
Auburn	36	17	53	23	21	44	19	20	39	-14	-5	-26.42	-11.36		0.45	0.37	0.37
Bankstown	90	64	154	85	27	112	63	20	83	-71	-29	-46.10	-25.89		0.37	0.28	0.28
Baulkham Hills	460	347	807	441	294	735	315	221	536	-271	-199	-33.58	-27.07		1.90	1.61	1.41
Blacktown	490	429	919	445	389	834	335	344	679	-240	-155	-26.12	-18.59		1.41	1.25	1.26
Blue Mountains	95	76	171	159	140	299	106	103	209	38	-90	22.22	-30.10		0.81	1.42	1.32
Camden	324	191	515	237	179	416	215	122	337	-178	-79	-34.56	-18.99		5.01	3.14	3.00
Campbelltown	200	155	355	182	110	292	102	57	159	-196	-133	-55.21	-45.55		0.89	0.77	0.55
Fairfield	251	147	398	267	130	397	185	105	290	-108	-107	-27.14	-26.95		0.93	1.00	0.97
Hawkesbury	776	541	1317	707	467	1174	542	403	945	-372	-229	-28.25	-19.51		7.17	6.54	6.99
Holroyd	69	29	98	73	29	102	50	19	69	-29	-33	-29.59	-32.35		0.42	0.45	0.40
Liverpool	384	251	635	350	225	575	345	216	561	-74	-14	-11.65	-2.43		1.90	1.46	1.82
Parramatta	95	66	161	157	70	227	98	55	153	-8	-74	-4.97	-32.60		0.40	0.60	0.52
Penrith	449	324	773	441	310	751	345	243	588	-185	-163	-23.93	-21.70		1.55	1.51	1.55
Wollondilly	445	298	743	427	267	694	324	197	521	-222	-173	-29.88	-24.93		7.56	6.64	5.95
WSROC	3195	2291	5486	3148	2102	5250	2403	1749	4152	1186	1070	-24.32	-20.91		1.41	1.34	1.35
WC	541	323	864	605	277	882	415	219	634	230	248	-26.62	-28.12		0.54	0.58	0.54
NW	2270	1717	3987	2193	1600	3793	1643	1314	2957	1030	836	-25.83	-22.04		2.02	1.89	1.86
SW	1353	895	2248	1196	781	1977	986	592	1578	670	399	-29.80	-20.18		2.41	1.96	1.98
GWS	4164	2935	7099	3994	2658	6652	3044	2125	5169	1930	1483	-27.19	-22.29		1.58	1.47	1.45
SSD	6853	4429	11282	6793	4358	11151	5239	3420	8659	2623	2492	-23.25	-22.35				
NSW	65466	26694	92160	65505	26853	92358	55167	22937	78104	-14056	-14254	-15.25	-15.43				
Australia	225679	98651	324330	230610	100172	330782	195007	85911	280918	-43412	-49864	-13.39	-15.07				


Location Quotient
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1996
2001
2006
Agriculture, forestry and fishing
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	66	0.39
Bankstown	61	0.25
Baulkham Hills	612	2.85
Blacktown	404	1.26
Blue Mountains	175	2.61
Camden	326	5.52
Campbelltown	62	0.39
Fairfield	203	1.07
Hawkesbury	1047	12.08
Holroyd	34	0.26
Liverpool	572	2.84
Parramatta	55	0.15
Penrith	477	2.21
Wollondilly	492	13.35
WSROC	3706	1.68
WC	419	0.38
NW	2715	3.00
SW	1452	3.19
GWS	4586	1.87
SydneySD	7130	1.00

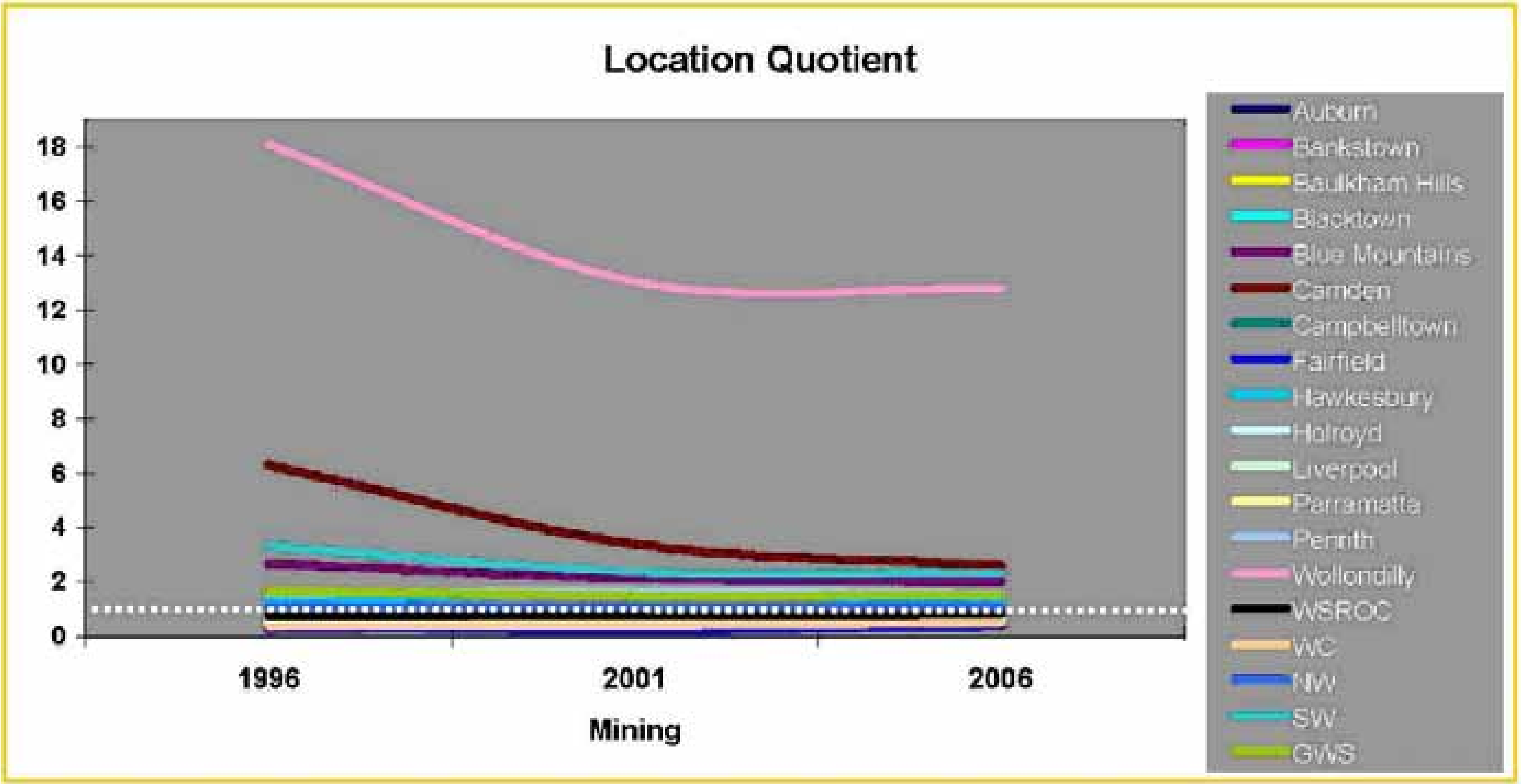


6.15.2 Mining

Industry per LGA

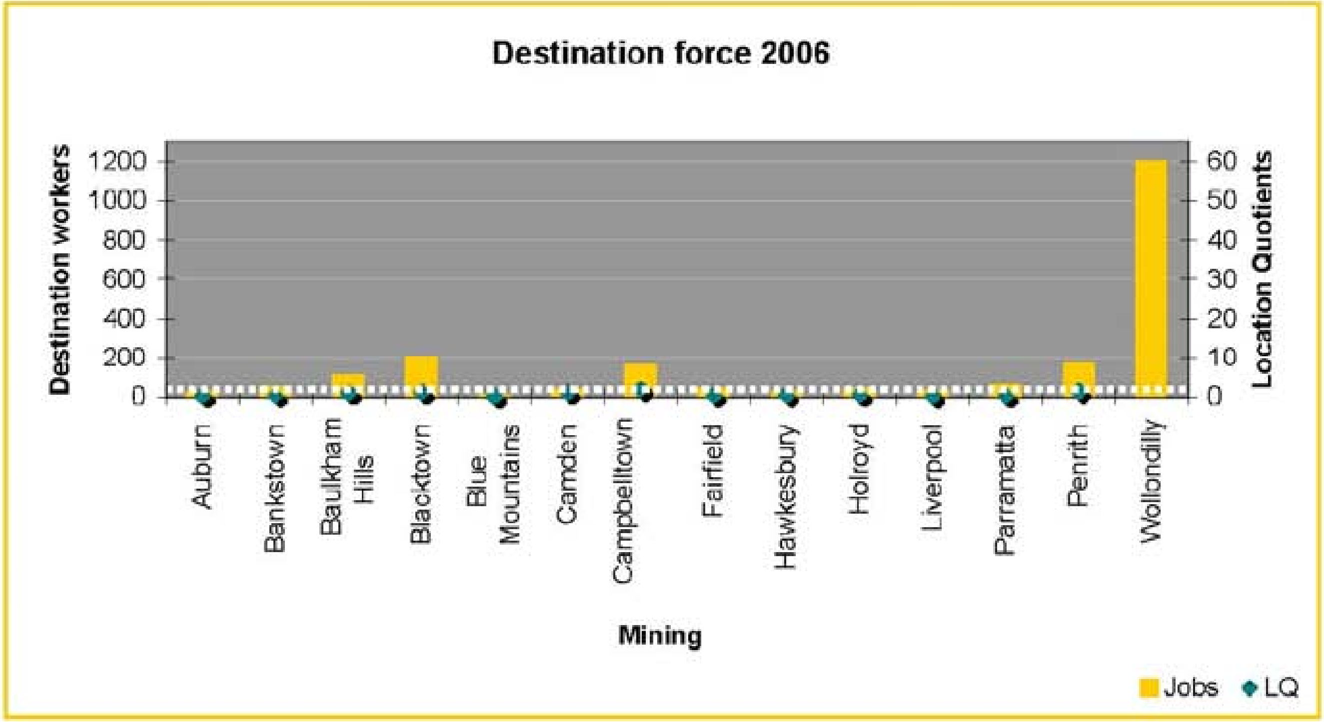
Household data (1996 - 2006)

	Mining														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01		1996	2001	2006
Auburn	6	3	9	6	3	9	15	4	19	10	10	111.11	111.11		0.25	0.40	0.50
Bankstown	24	13	37	21	8	29	32	12	44	7	15	18.92	51.72		0.29	0.38	0.41
Baulkham Hills	53	12	65	58	4	62	82	38	120	55	58	84.62	93.55		0.50	0.70	0.88
Blacktown	114	17	131	57	12	69	84	28	112	-19	43	-14.50	62.32		0.66	0.53	0.58
Blue Mountains	167	6	173	80	7	87	102	14	116	-57	29	-32.95	33.33		2.68	2.14	2.03
Camden	191	7	198	82	5	87	100	5	105	-93	18	-46.97	20.69		6.30	3.39	2.60
Campbelltown	132	18	150	59	13	72	81	16	97	-53	25	-35.33	34.72		1.23	0.98	0.94
Fairfield	36	10	46	15	3	18	21	22	43	-3	25	-6.52	138.89		0.35	0.23	0.40
Hawkesbury	66	5	71	49	7	56	52	9	61	-10	5	-14.08	8.93		1.27	1.61	1.25
Holroyd	30	18	48	17	9	26	26	16	42	-6	16	-12.50	61.54		0.67	0.59	0.67
Liverpool	41	16	57	30	11	41	53	18	71	14	30	24.56	73.17		0.56	0.54	0.64
Parramatta	40	12	52	34	5	39	38	22	60	8	21	15.38	53.85		0.43	0.53	0.56
Penrith	214	21	235	136	25	161	188	30	218	-17	57	-7.23	35.40		1.54	1.67	1.59
Wollondilly	535	8	543	251	13	264	383	21	404	-139	140	-25.60	53.03		18.09	13.06	12.80
WSROC	791	133	924	503	94	597	693	213	906	-18	309	-1.95	51.76		0.78	0.79	0.82
WC	136	56	192	93	28	121	132	76	208	16	87	8.33	71.90		0.39	0.41	0.49
NW	614	61	675	380	55	435	508	119	627	-48	192	-7.11	44.14		1.12	1.12	1.09
SW	899	49	948	422	42	464	617	60	677	-271	213	-28.59	45.91		3.33	2.37	2.36
GWS	1649	166	1815	895	125	1020	1257	255	1512	-303	492	-16.69	48.24		1.66	1.50	1.52
SSD	2916	529	3445	1791	365	2156	2492	630	3122	-323	966	-9.38	44.81				
NSW	19999	1447	21446	13687	1136	14823	18046	1973	20019	-1427	5196	-6.65	35.05				
Australia	75497	10764	86261	64947	10231	75178	90835	16059	106894	20633	31716	23.92	42.19				


Location Quotient
18
16
14
12
10
8
6
4
2
0
1996
2001
2006
Mining
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	24	0.28
Bankstown	47	0.39
Baulkham Hills	110	1.03
Blacktown	196	1.22
Blue Mountains	6	0.18
Camden	33	1.12
Campbelltown	161	2.05
Fairfield	37	0.39
Hawkesbury	21	0.48
Holroyd	37	0.57
Liverpool	26	0.26
Parramatta	60	0.33
Penrith	170	1.57
Wollondilly	1198	65.05
WSROC	734	0.67
WC	205	0.37
NW	503	1.11
SW	1418	6.24
GWS	2126	1.73
SydneySD	3564	1.00

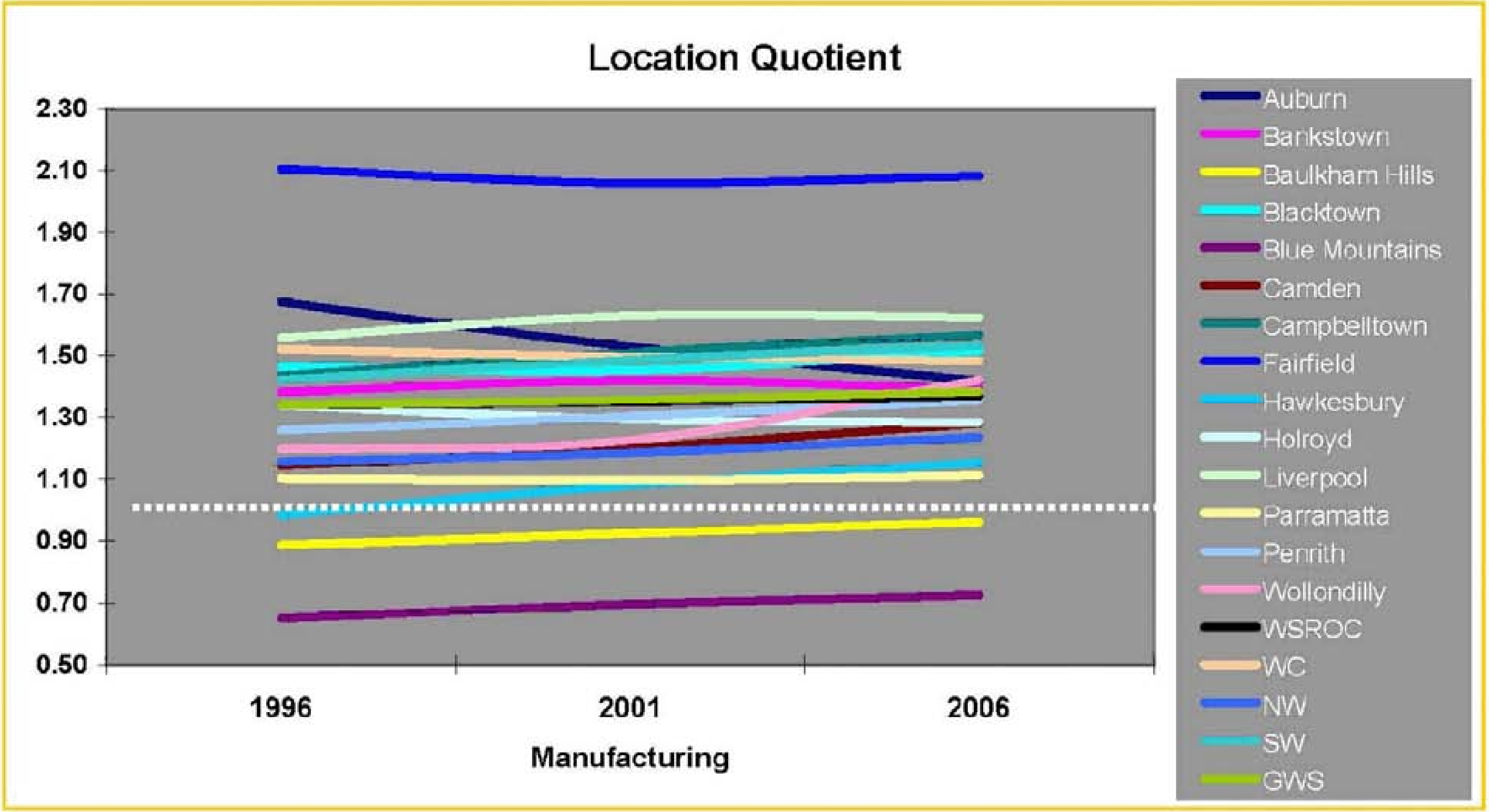


6.15.3 Manufacturing

Industry per LGA

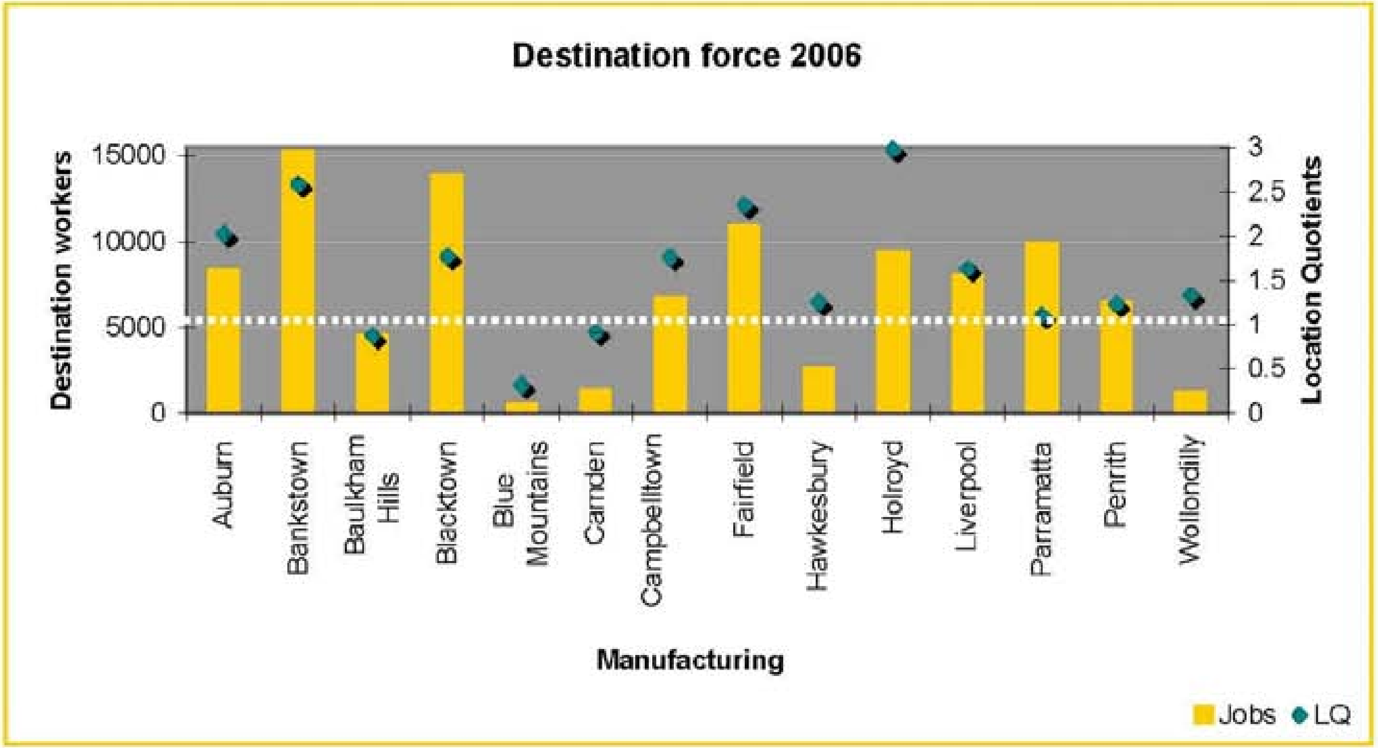
Household data (1996 - 2006)

	Manufacturing														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01		1996	2001	2006
Auburn	2321	1165	3486	2295	1056	3351	2168	1029	3197	-289	-154	-8.29	-4.60		1.67	1.53	1.42
Bankstown	7153	3173	10326	7204	3275	10479	6136	2720	8856	-1470	-1623	-14.24	-15.49		1.38	1.42	1.39
Baulkham Hills	4551	2152	6703	5356	2478	7834	5333	2462	7795	1092	-39	16.29	-0.50		0.89	0.92	0.96
Blacktown	12039	4960	16999	12761	5307	18068	12272	5078	17350	351	-718	2.06	-3.97		1.47	1.45	1.52
Blue Mountains	1832	615	2447	2063	658	2721	1861	587	2448	1	-273	0.04	-10.03		0.65	0.70	0.72
Camden	1511	583	2094	2152	811	2963	2247	814	3061	967	98	46.18	3.31		1.14	1.20	1.28
Campbelltown	7411	2764	10175	7783	2878	10661	7044	2558	9602	-573	-1059	-5.63	-9.93		1.44	1.51	1.57
Fairfield	11088	4983	16071	10693	4546	15239	9293	3978	13271	-2800	-1968	-17.42	-12.91		2.10	2.06	2.08
Hawkesbury	2242	977	3219	2516	1094	3610	2395	927	3322	103	-288	3.20	-7.98		0.98	1.08	1.15
Holroyd	3955	1654	5609	3908	1551	5459	3431	1332	4763	-846	-696	-15.08	-12.75		1.34	1.29	1.28
Liverpool	6541	2711	9252	8332	3607	11939	7435	3256	10691	1439	-1248	15.55	-10.45		1.56	1.63	1.62
Parramatta	5367	2464	7831	5296	2400	7696	4915	2125	7040	-791	-656	-10.10	-8.52		1.10	1.10	1.11
Penrith	8136	3032	11168	8889	3183	12072	8126	2830	10956	-212	-1116	-1.90	-9.24		1.26	1.30	1.35
Wollondilly	1505	590	2095	1734	649	2383	1941	713	2654	559	271	26.68	11.37		1.20	1.22	1.42
WSROC	65225	27886	93111	69313	29155	98468	63365	26324	89689	-3422	-8779	-3.68	-8.92		1.34	1.35	1.37
WC	29884	13439	43323	29396	12828	42224	25943	11184	37127	-6196	-5097	-14.30	-12.07		1.52	1.50	1.48
NW	28800	11736	40536	31585	12720	44305	29987	11884	41871	1335	-2434	3.29	-5.49		1.16	1.18	1.23
SW	16968	6648	23616	20001	7945	27946	18667	7341	26008	2392	-1938	10.13	-6.93		1.42	1.49	1.53
GWS	75652	31823	107475	80982	33493	114475	74597	30409	105006	-2469	-9469	-2.30	-8.27		1.34	1.36	1.38
SSD	138423	62500	200923	143603	63890	207493	128539	56114	184653	-16270	-22840	-8.10	-11.01				
NSW	210944	84040	294984	216207	85354	301561	202258	75420	277678	-17306	-23883	-5.87	-7.92				
Australia	667346	255553	922899	714738	266212	980950	704855	247160	952015	29116	-28935	3.15	-2.95				


Location Quotient
2.30
2.10
1.90
1.70
1.50
1.30
1.10
0.90
0.70
0.50
1996
2001
2006
Manufacturing
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	8347	2.02
Bankstown	15263	2.59
Baulkham Hills	4576	0.87
Blacktown	13887	1.77
Blue Mountains	511	0.31
Camden	1317	0.91
Campbelltown	6752	1.76
Fairfield	10915	2.35
Hawkesbury	2655	1.26
Holroyd	9381	2.98
Liverpool	8020	1.63
Parramatta	9930	1.11
Penrith	6516	1.24
Wollondilly	1197	1.33
WSROC	90001	1.67
WC	53836	2.01
NW	28145	1.27
SW	17286	1.56
GWS	99267	1.66
SydneySD	173876	1.00

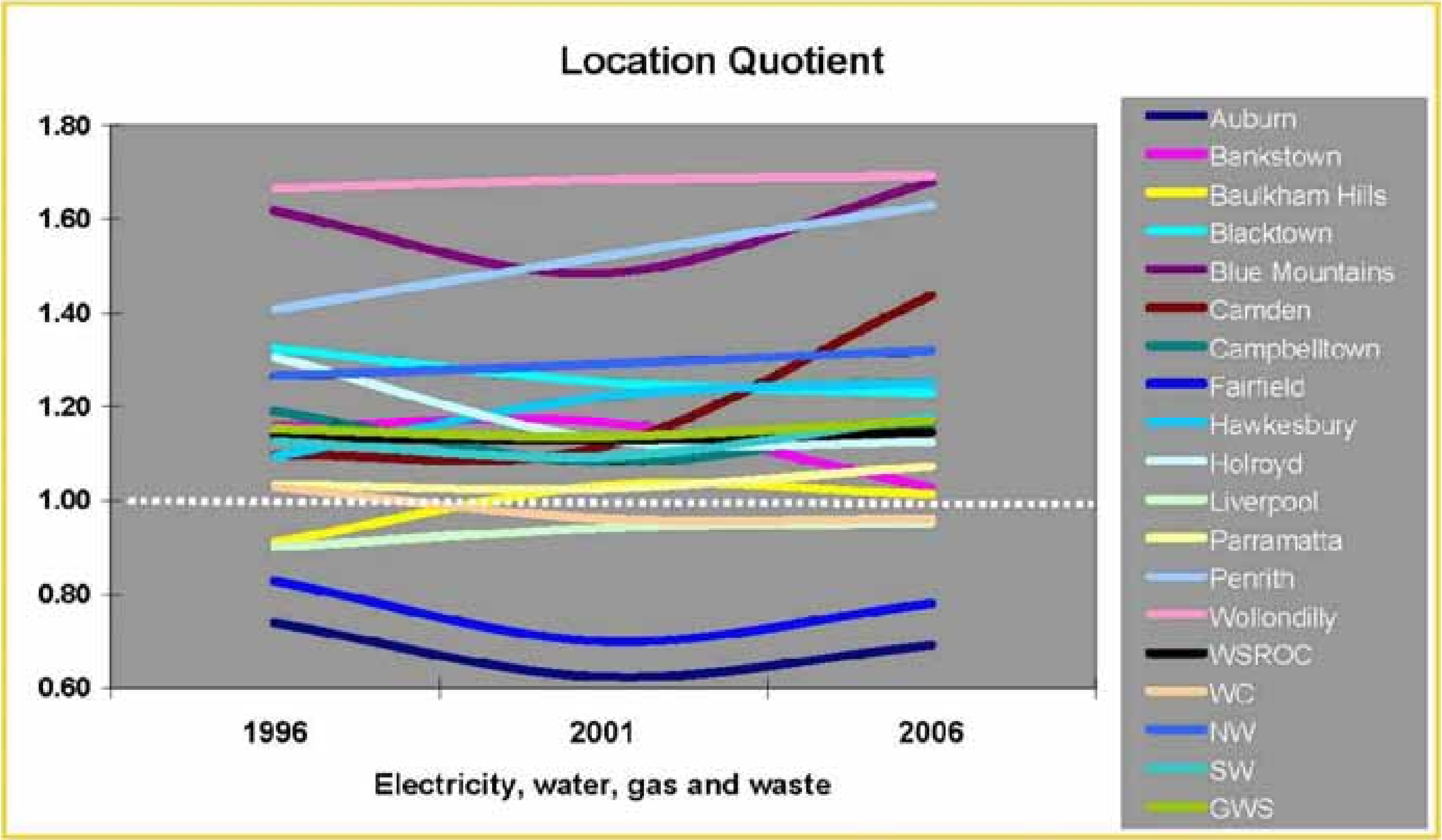


6.15.4 Electricity, gas, water and waste services

Industry per LGA

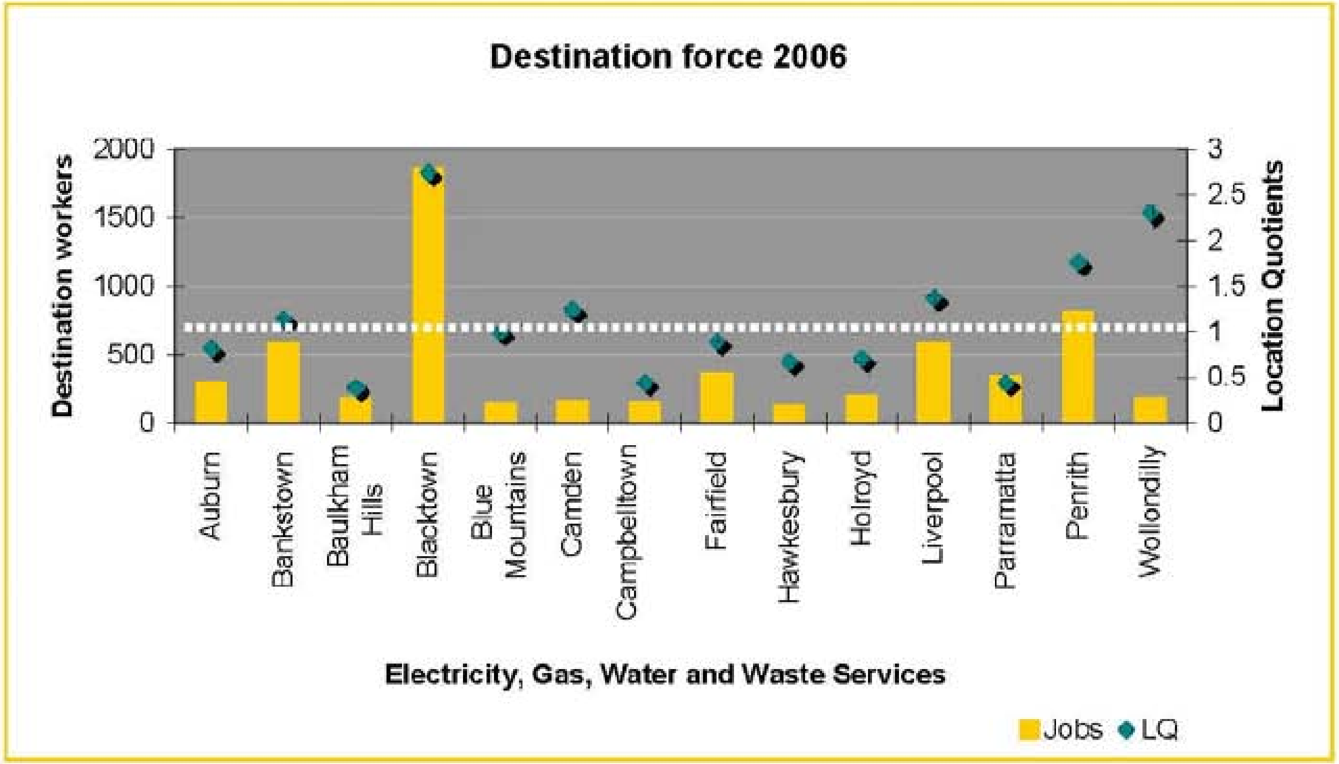
Household data (1996 - 2006)

	Electricity, Gas, Water and Waste Services													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	80	25	105	76	23	99	95	39	134	29	35	27.62	35.35	0.74	0.62	0.69
Bankstown	492	97	589	525	98	623	465	98	563	-26	-60	-4.41	-9.63	1.16	1.17	1.03
Baulkham Hills	387	83	470	482	150	632	548	160	708	238	76	50.64	12.03	0.91	1.03	1.01
Blacktown	838	209	1047	847	280	1127	910	301	1211	164	84	15.66	7.45	1.32	1.25	1.23
Blue Mountains	355	60	415	341	79	420	393	96	489	74	69	17.83	16.43	1.62	1.48	1.68
Camden	116	21	137	155	44	199	234	62	296	159	97	116.06	48.74	1.10	1.11	1.44
Campbelltown	465	110	575	419	134	553	488	126	614	39	61	6.78	11.03	1.19	1.08	1.16
Fairfield	344	87	431	289	86	375	336	92	428	-3	53	-0.70	14.13	0.83	0.70	0.78
Hawkesbury	199	45	244	226	69	295	246	64	310	66	15	27.05	5.08	1.09	1.22	1.25
Holroyd	289	84	373	273	72	345	275	84	359	-14	14	-3.75	4.06	1.30	1.13	1.12
Liverpool	300	65	365	376	123	499	402	138	540	175	41	47.95	8.22	0.90	0.94	0.95
Parramatta	393	108	501	398	123	521	439	146	585	84	64	16.77	12.28	1.03	1.03	1.07
Penrith	676	177	853	727	292	1019	823	312	1135	282	116	33.06	11.38	1.41	1.52	1.63
Wollondilly	163	36	199	195	42	237	218	54	272	73	35	36.68	14.77	1.67	1.68	1.69
WSROC	4353	1040	5393	4560	1395	5955	4932	1530	6462	1069	507	19.82	8.51	1.14	1.13	1.15
WC	1598	401	1999	1561	402	1963	1610	459	2069	70	106	3.50	5.40	1.03	0.96	0.96
NW	2455	574	3029	2623	870	3493	2920	933	3853	824	360	27.20	10.31	1.27	1.29	1.32
SW	1044	232	1276	1145	343	1488	1342	380	1722	446	234	34.95	15.73	1.13	1.09	1.18
GWS	5097	1207	6304	5329	1615	6944	5872	1772	7644	1340	700	21.26	10.08	1.15	1.14	1.17
SSD	11348	2350	13698	11681	3326	15007	12290	3602	15892	2194	885	16.02	5.90			
NSW	21584	4114	25698	21030	5212	26242	23073	6104	29177	3479	2935	13.54	11.18			
Australia	58273	11168	69441	61741	15289	77030	69855	19596	89451	20010	12421	28.82	16.12			


Location Quotient
1.80
1.60
1.40
1.20
1.00
0.80
0.60
1996
2001
2006
Electricity, water, gas and waste
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	292	0.82
Bankstown	581	1.14
Baulkham Hills	175	0.39
Blacktown	1859	2.74
Blue Mountains	141	1.00
Camden	155	1.24
Campbelltown	146	0.44
Fairfield	359	0.89
Hawkesbury	123	0.67
Holroyd	193	0.71
Liverpool	583	1.37
Parramatta	341	0.44
Penrith	804	1.76
Wollondilly	179	2.30
WSROC	5451	1.17
WC	1766	0.76
NW	3102	1.62
SW	1063	1.11
GWS	5931	1.14
SydneySD	15031	1.00

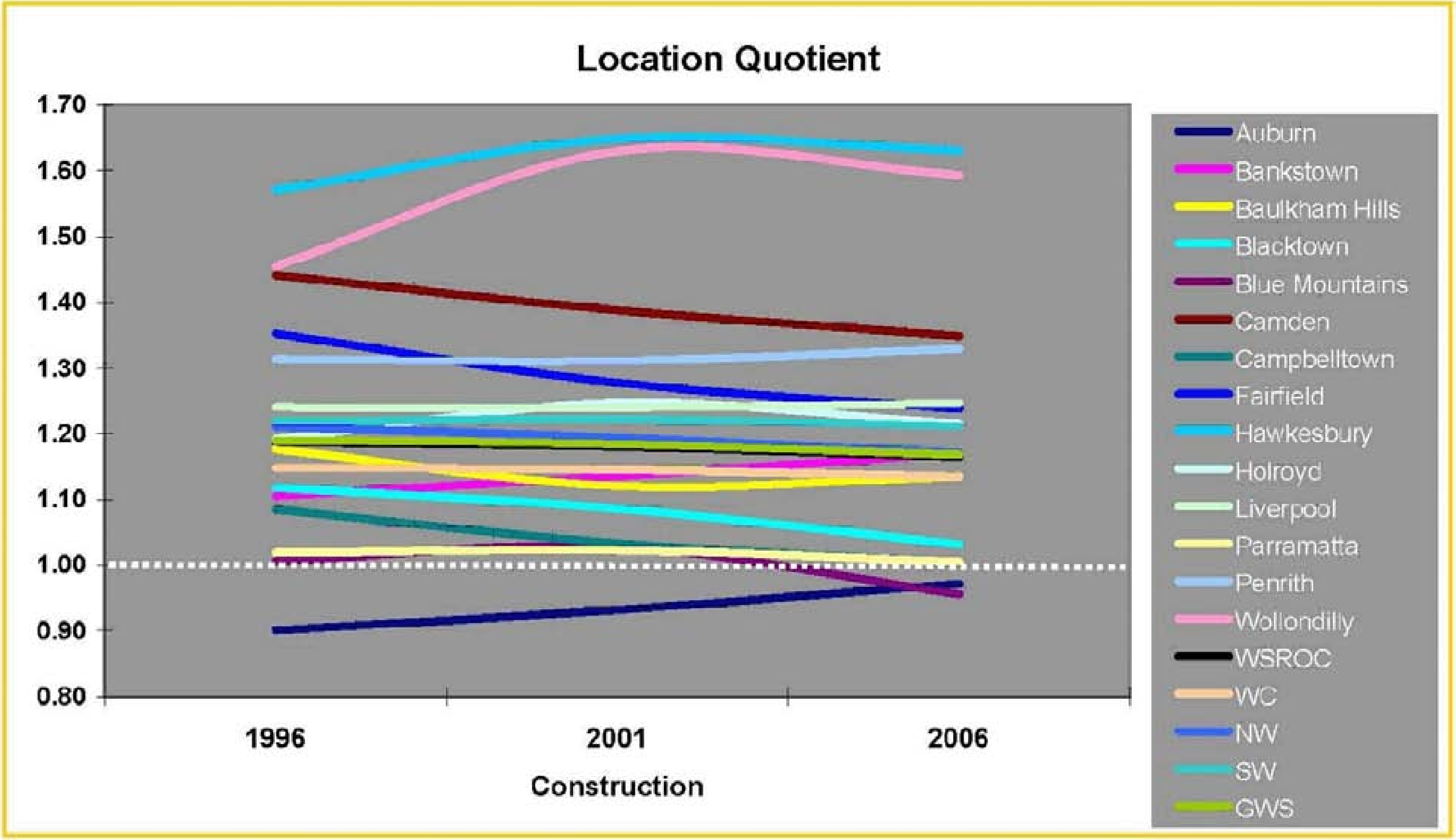


6.15.5 Construction

Industry per LGA

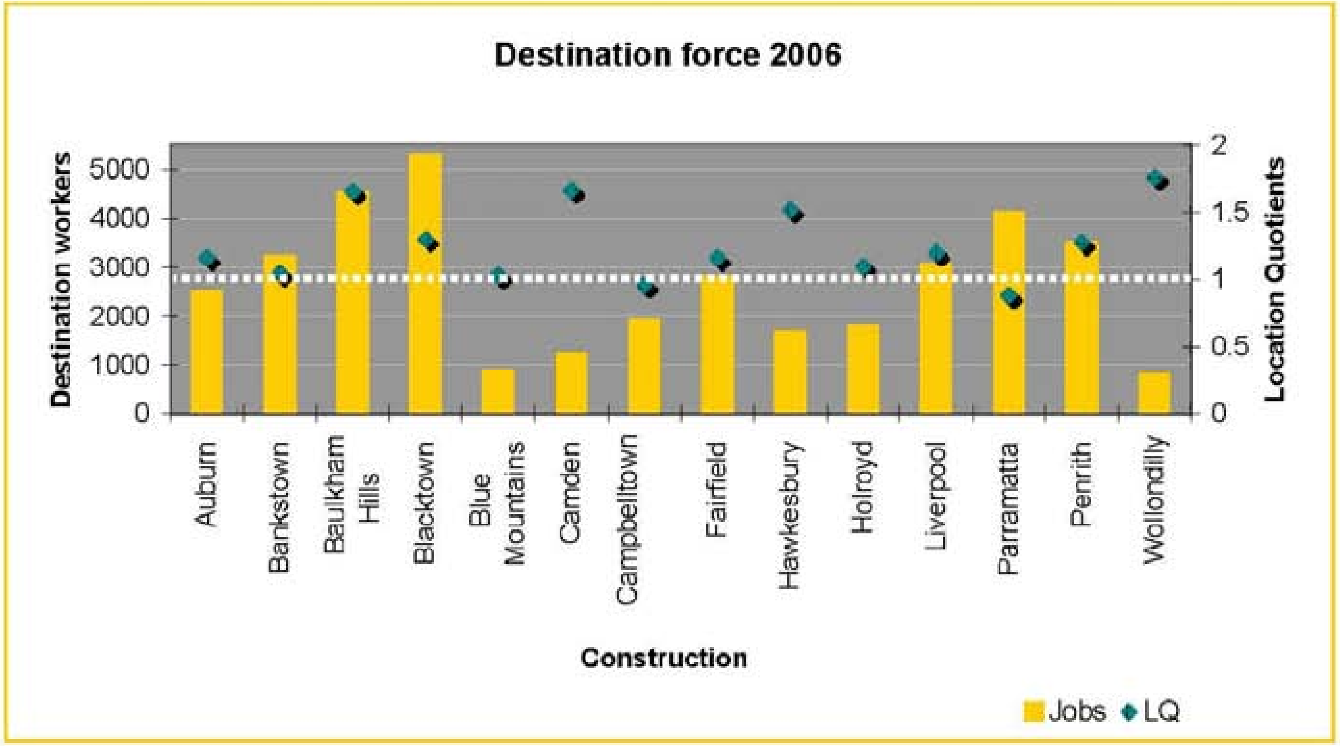
Household data (1996 - 2006)

	Construction														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01		1996	2001	2006
Auburn	883	85	968	1092	104	1196	1437	147	1584	616	388	63.64	32.44		0.90	0.93	0.97
Bankstown	3714	541	4255	4340	566	4906	4753	632	5385	1130	479	26.56	9.76		1.11	1.14	1.17
Baulkham Hills	3758	827	4585	4489	1068	5557	5355	1304	6659	2074	1102	45.23	19.83		1.18	1.12	1.13
Blacktown	5894	787	6681	6960	948	7908	7417	1128	8545	1864	637	27.90	8.06		1.12	1.09	1.03
Blue Mountains	1669	283	1952	2028	326	2354	2039	301	2340	388	-14	19.88	-0.59		1.01	1.03	0.96
Camden	1124	237	1361	1674	332	2006	1954	380	2334	973	328	71.49	16.35		1.44	1.39	1.35
Campbelltown	3406	555	3961	3741	529	4270	3909	539	4448	487	178	12.29	4.17		1.08	1.03	1.00
Fairfield	4687	636	5323	4883	656	5539	5062	649	5711	388	172	7.29	3.11		1.35	1.28	1.24
Hawkesbury	2243	404	2647	2698	526	3224	2874	525	3399	752	175	28.41	5.43		1.57	1.65	1.63
Holroyd	2286	289	2575	2748	335	3083	2845	416	3261	686	178	26.64	5.77		1.19	1.25	1.21
Liverpool	3287	511	3798	4561	763	5324	5169	766	5935	2137	611	56.27	11.48		1.24	1.24	1.25
Parramatta	3269	460	3729	3676	529	4205	3981	621	4602	873	397	23.41	9.44		1.02	1.02	1.00
Penrith	5183	831	6014	6169	942	7111	6727	1054	7781	1767	670	29.38	9.42		1.31	1.31	1.33
Wollondilly	1111	202	1313	1600	256	1856	1820	332	2152	839	296	63.90	15.95		1.46	1.63	1.59
WSROC	36873	5654	42527	43644	6763	50407	47659	7543	55202	12675	4795	109.47	9.51		1.19	1.18	1.16
WC	14839	2011	16850	16739	2190	18929	18078	2465	20543	3693	1614	21.92	8.53		1.15	1.15	1.13
NW	18747	3132	21879	22344	3810	26154	24412	4312	28724	6845	2570	31.29	9.83		1.21	1.19	1.17
SW	8928	1505	10433	11576	1880	13456	12852	2017	14869	4436	1413	42.52	10.50		1.22	1.22	1.21
GWS	42514	6648	49162	50659	7880	58539	55342	8794	64136	14974	5597	30.46	9.56		1.19	1.18	1.17
SSD	89734	13791	103525	105313	16160	121473	114390	19194	133584	30059	12111	29.04	9.97				
NSW	138373	20615	158988	160926	23582	184508	183062	28662	211724	52736	27216	33.17	14.75				
Australia	408610	62525	471135	471707	71532	543239	613957	95886	709843	238708	166604	50.67	30.67				


Location Quotient
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
0.90
0.80
1996
2001
2006
Construction
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	2500	1.16
Bankstown	3232	1.05
Baulkham Hills	4516	1.66
Blacktown	5309	1.30
Blue Mountains	878	1.03
Camden	1250	1.66
Campbelltown	1916	0.96
Fairfield	2811	1.16
Hawkesbury	1673	1.52
Holroyd	1807	1.10
Liverpool	3070	1.20
Parramatta	4129	0.88
Penrith	3508	1.28
Wollondilly	824	1.76
WSROC	33433	1.19
WC	14479	1.04
NW	15884	1.38
SW	7060	1.22
GWS	37423	1.20
SydneySD	90654	1.00

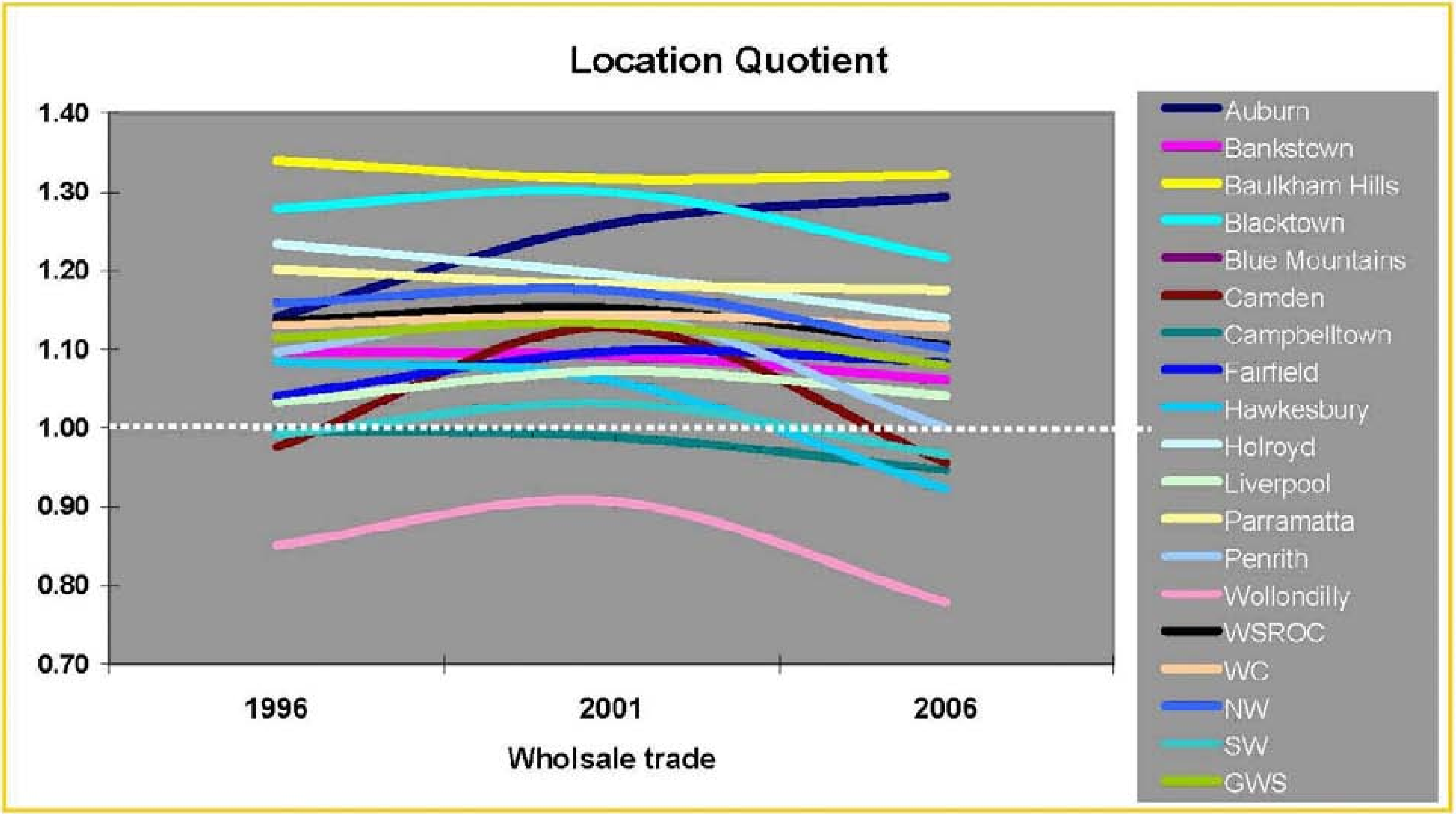


6.15.6 Wholesale trade

Industry per LGA

Household data (1996 - 2006)

	Wholesale Trade													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01	1996	2001	2006
Auburn	897	421	1318	933	465	1398	1082	572	1654	336	256	25.49	18.31	1.14	1.26	1.29
Bankstown	2961	1576	4537	2586	1496	4082	2445	1387	3832	-705	-250	-15.54	-6.12	1.10	1.09	1.06
Baulkham Hills	3545	2066	5611	3576	2071	5647	3825	2262	6087	476	440	8.48	7.79	1.34	1.32	1.32
Blacktown	5473	2741	8214	5317	2868	8185	5010	2894	7904	-310	-281	-3.77	-3.43	1.28	1.30	1.22
Blue Mountains	956	371	1327	860	400	1260	781	318	1099	-228	-161	-17.18	-12.78	0.64	0.64	0.57
Camden	709	281	990	971	439	1410	857	441	1298	308	-112	31.11	-7.94	0.98	1.13	0.96
Campbelltown	2816	1092	3908	2407	1129	3536	2147	1142	3289	-619	-247	-15.84	-6.99	1.00	0.99	0.95
Fairfield	3007	1392	4399	2677	1437	4114	2470	1449	3919	-480	-195	-10.91	-4.74	1.04	1.10	1.08
Hawkesbury	1264	699	1963	1198	595	1793	962	545	1507	-456	-286	-23.23	-15.95	1.08	1.06	0.92
Holroyd	1904	960	2864	1623	932	2555	1495	907	2402	-462	-153	-16.13	-5.99	1.23	1.20	1.14
Liverpool	2221	1172	3393	2588	1390	3978	2481	1408	3889	496	-89	14.62	-2.24	1.03	1.07	1.04
Parramatta	3156	1571	4727	2680	1524	4204	2689	1537	4226	-501	22	-10.60	0.52	1.20	1.18	1.18
Penrith	3738	1655	5393	3595	1789	5384	3001	1591	4592	-801	-792	-14.85	-14.71	1.10	1.15	1.00
Wollondilly	598	227	825	631	262	893	541	284	825	0	-68	0.00	-7.61	0.85	0.91	0.78
WSROC	7198	14624	43746	27633	14967	42600	26241	14870	41111	-2635	-1489	-6.02	-3.50	1.14	1.15	1.11
WC	11925	5920	17845	10499	5854	16353	10181	5852	16033	-1812	-320	-10.15	-1.96	1.13	1.14	1.13
NW	14976	7532	22508	14546	7723	22269	13579	7610	21189	-1319	-1080	-5.86	-4.85	1.16	1.18	1.10
SW	6344	2772	9116	6597	3220	9817	6026	3275	9301	185	-516	2.03	-5.26	0.99	1.03	0.97
GWS	33245	16224	49469	31642	16797	48439	29786	16737	46523	-2946	-1916	-5.96	-3.96	1.11	1.13	1.08
SSD	72578	38652	111230	67201	37871	105072	64783	40026	104809	-6421	-263	-5.77	-0.25			
NSW	101586	49223	150809	96772	49009	145781	86882	49196	136078	-14731	-9703	-9.77	-6.66			
Australia	289439	133244	422683	282565	135363	417928	258845	137523	396368	-26315	-21560	-6.23	-5.16			


Location Quotient
1.40
1.30
1.20
1.10
1.00
0.90
0.80
0.70
1996
2001
2006
Wholsale trade
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	6121	2.56
Bankstown	4508	1.32
Baulkham Hills	4160	1.37
Blacktown	6576	1.45
Blue Mountains	300	0.32
Camden	621	0.74
Campbelltown	1769	0.80
Fairfield	4205	1.56
Hawkesbury	692	0.57
Holroyd	3449	1.89
Liverpool	2568	0.90
Parramatta	4850	0.94
Penrith	1811	0.59
Wollondilly	261	0.50

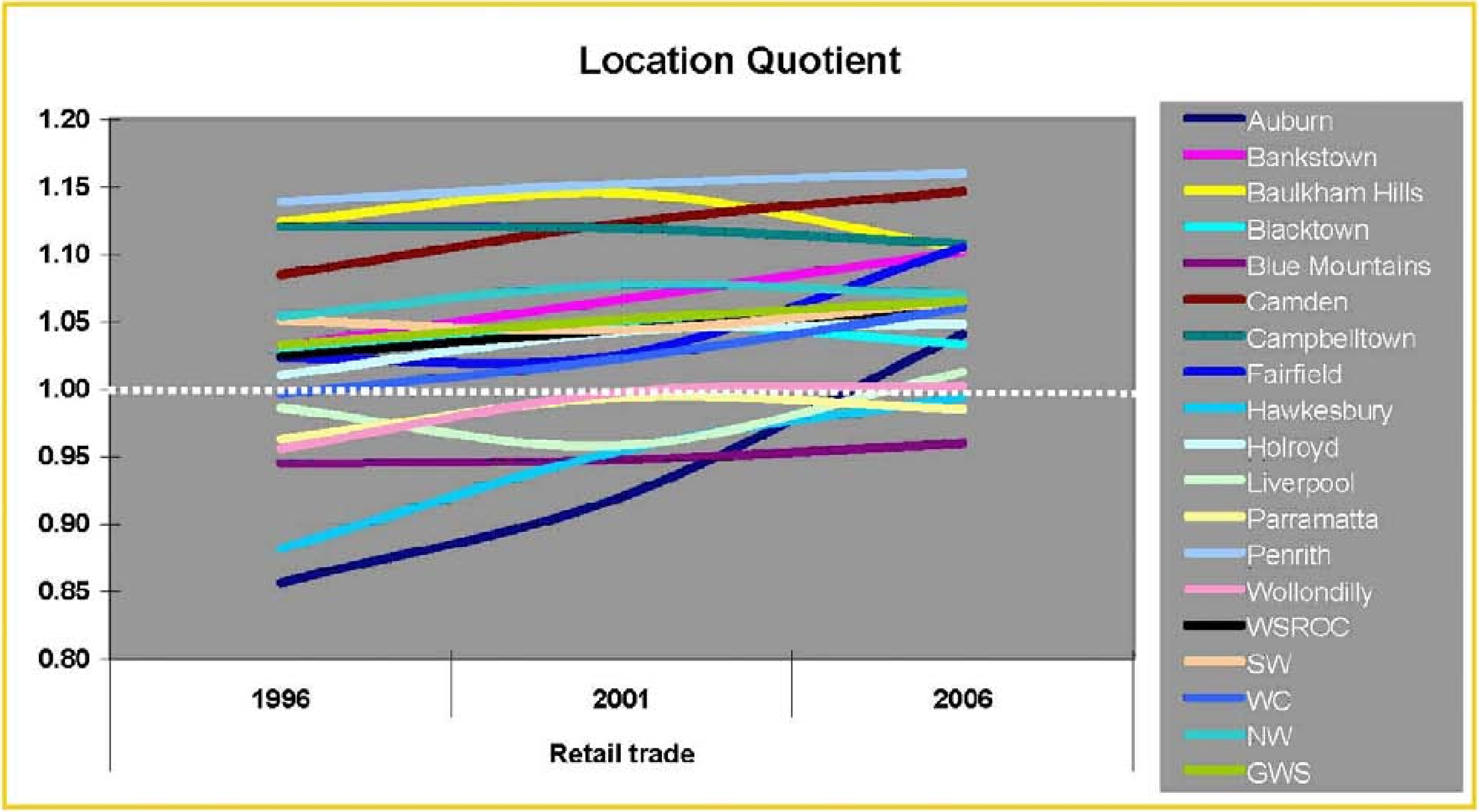
WSROC	39240	1.26
WC	23133	1.49
NW	13539	1.06
SW	5219	0.81
GWS	41891	1.21
SydneySD	100676	1.00

6.15.7 Retail trade

Industry per LGA

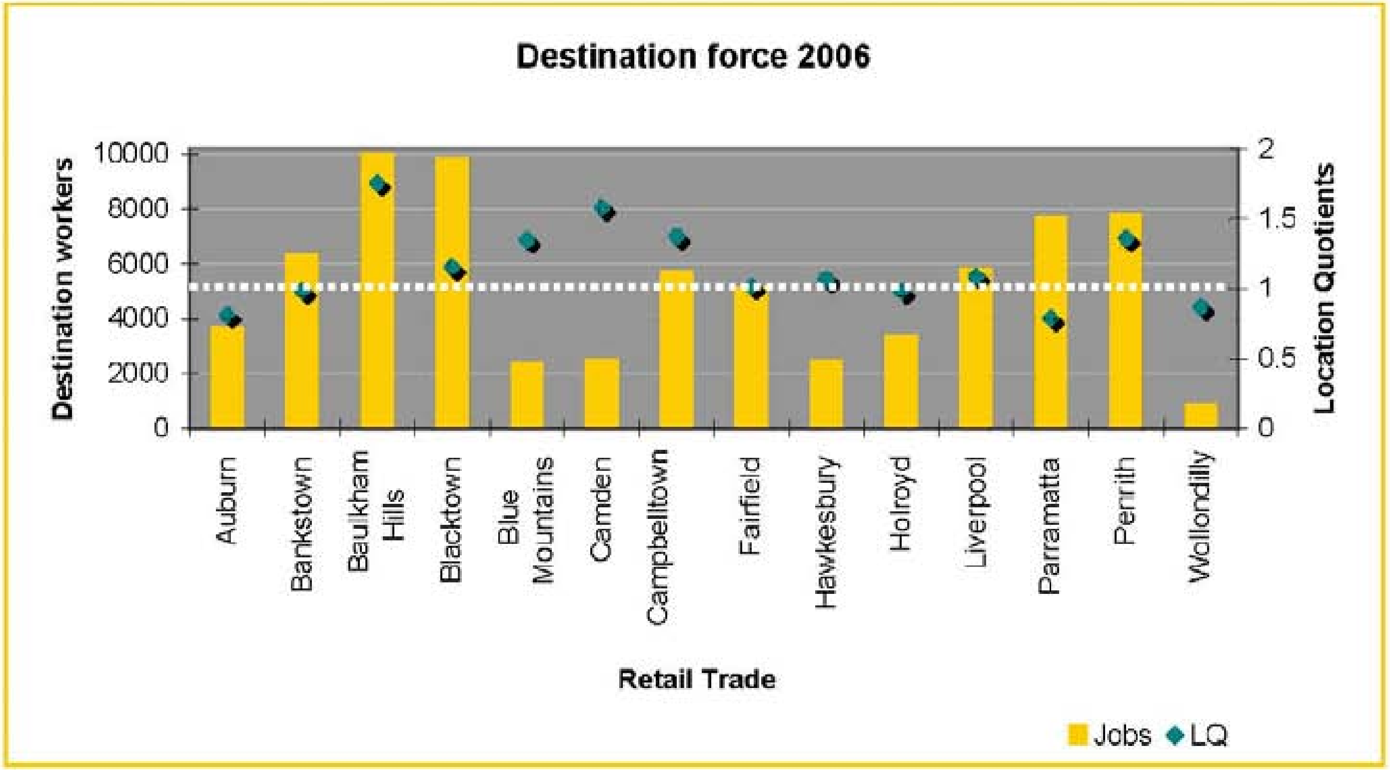
Household data (1996 - 2006)

	Retail Trade													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	749	683	1432	988	821	1809	1348	1188	2536	1104	727	77.09	40.19	0.86	0.92	1.04
Bankstown	2832	3353	6185	3293	3767	7060	3404	4175	7579	1394	519	22.54	7.35	1.03	1.07	1.10
Baulkham Hills	3088	3734	6822	4002	4696	8698	4442	5240	9682	2860	984	41.92	11.31	1.12	1.15	1.10
Blacktown	4103	5452	9555	5119	6577	11696	5634	7162	12796	3241	1100	33.92	9.40	1.03	1.05	1.03
Blue Mountains	1281	1571	2852	1510	1813	3323	1571	1939	3510	658	187	23.07	5.63	0.94	0.95	0.96
Camden	660	934	1594	1030	1456	2486	1202	1763	2965	1371	479	86.01	19.27	1.08	1.12	1.15
Campbelltown	2709	3658	6367	3029	4057	7086	3076	4262	7338	971	252	15.25	3.56	1.12	1.12	1.11
Fairfield	2857	3409	6266	3139	3671	6810	3547	4069	7616	1350	806	21.54	11.84	1.02	1.03	1.11
Hawkesbury	1054	1259	2313	1229	1630	2859	1297	1799	3096	783	237	33.85	8.29	0.88	0.95	0.99
Holroyd	1505	1893	3398	1747	2200	3947	1939	2267	4206	808	259	23.78	6.56	1.01	1.04	1.05
Liverpool	2032	2665	4697	2759	3536	6295	3147	4060	7207	2510	912	53.44	14.49	0.99	0.96	1.01
Parramatta	2594	2893	5487	2972	3285	6257	3374	3371	6745	1258	488	22.93	7.80	0.96	0.99	0.99
Penrith	3289	4826	8115	4030	5540	9570	4127	6021	10148	2033	578	25.05	6.04	1.14	1.15	1.16
Wollondilly	576	766	1342	718	1022	1740	769	1254	2023	681	283	50.75	16.26	0.96	1.00	1.00
WSROC	25384	31738	57122	30788	37536	68324	33830	41291	75121	17999	6797	31.51	9.95	1.02	1.04	1.06
WC	10537	12231	22768	12139	13744	25883	13612	15070	28682	5914	2799	25.98	10.81	1.00	1.02	1.06
NW	12815	16842	29657	15890	20256	36146	17071	22161	39232	9575	3086	32.29	8.54	1.05	1.08	1.07
SW	5977	8023	14000	7536	10071	17607	8194	11339	19533	5533	1926	39.52	10.94	1.05	1.04	1.07
GWS	29329	37096	66425	35565	44071	79636	38877	48570	87447	21022	7811	31.65	9.81	1.03	1.05	1.07
SSD	72288	88840	161128	83990	102048	186038	89460	110173	199633	38505	13595	23.90	7.31			
NSW	113109	1E+05	257329	131312	165592	296904	139870	183352	323222	65893	26318	25.61	8.86			
Australia	340686	4E+05	778005	406544	516023	922567	441971	591220	1E+06	255186	110624	32.80	11.99			


Location Quotient
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
1996
2001
2006
Retail trade
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	3650	0.81
Bankstown	6305	0.98
Baulkham Hills	9995	1.76
Blacktown	9861	1.16
Blue Mountains	2395	1.35
Camden	2473	1.58
Campbelltown	5727	1.37
Fairfield	5141	1.02
Hawkesbury	2453	1.07
Holroyd	3354	0.98
Liverpool	5822	1.09
Parramatta	7679	0.79
Penrith	7789	1.36
Wollondilly	846	0.87
WSROC	64444	1.10
WC	26129	0.90
NW	32493	1.35
SW	14868	1.23
GWS	73490	1.13
SydneySD	189033	1.00

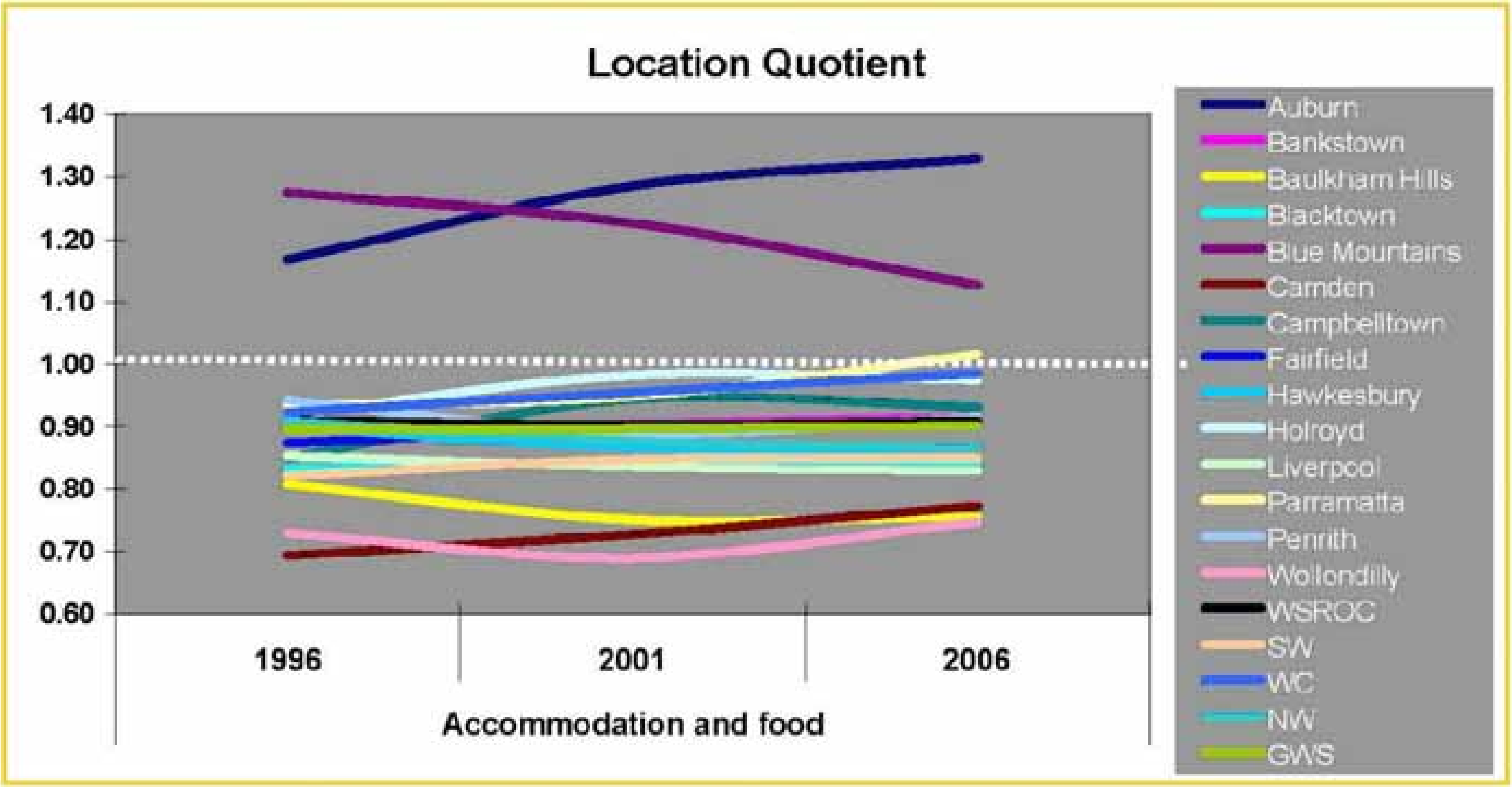


6.15.8 Accommodation and food services

Industry per LGA

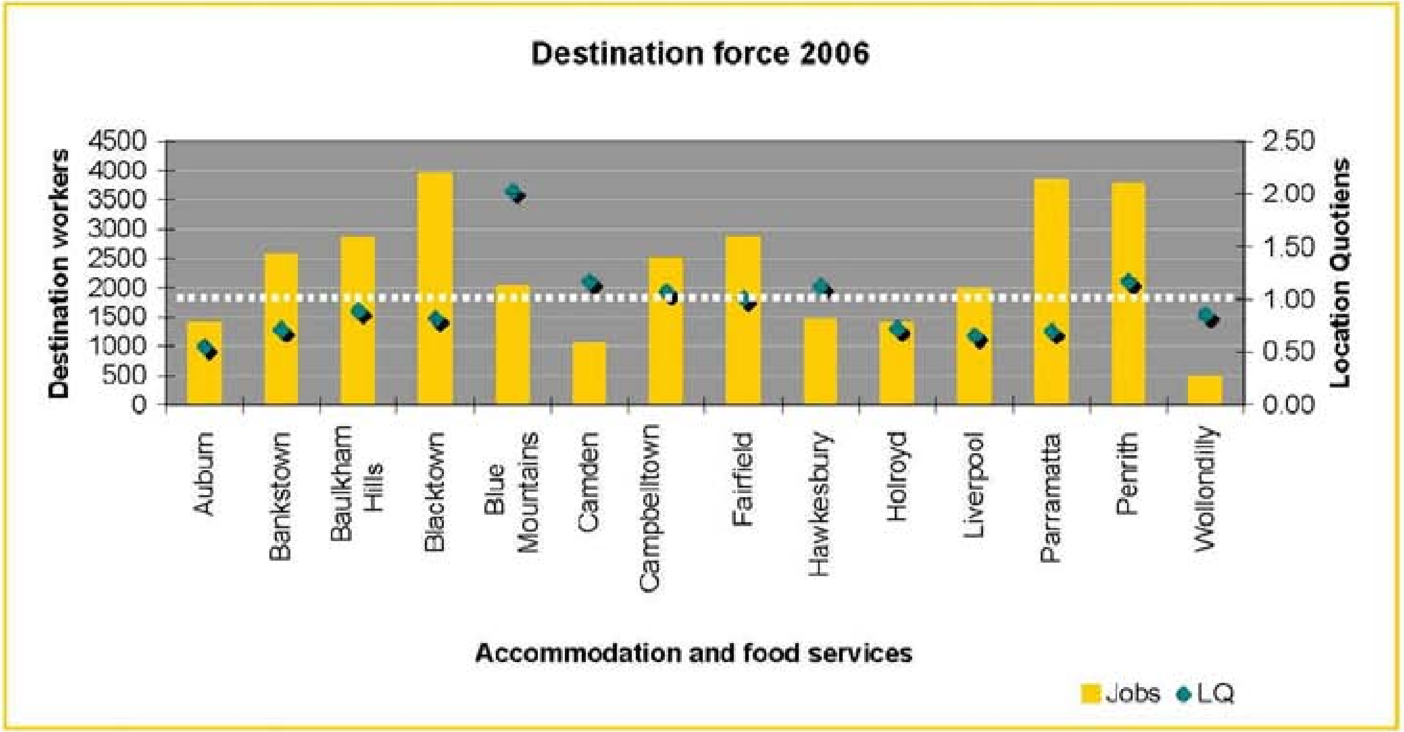
Household data (1996 - 2006)

	Accommodation and food services														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01		**1996**	**2001**	**2006**
Auburn	720	478	1198	891	619	1510	1105	755	1860	662	350	55.26	23.18		1.17	1.29	1.33
Bankstown	1533	1756	3289	1734	1842	3576	1810	1806	3616	327	40	9.94	1.12		0.90	0.90	0.92
Baulkham Hills	1406	1598	3004	1628	1781	3409	1803	2008	3811	807	402	26.86	11.79		0.81	0.75	0.76
Blacktown	2135	2612	4747	2484	3134	5618	2681	3269	5950	1203	332	25.34	5.91		0.83	0.84	0.84
Blue Mountains	1030	1328	2358	1154	1417	2571	1037	1334	2371	13	-200	0.55	-7.78		1.27	1.23	1.13
Camden	259	366	625	387	575	962	465	683	1148	523	186	83.68	19.33		0.69	0.73	0.77
Campbelltown	1212	1750	2962	1480	2092	3572	1465	2077	3542	580	-30	19.58	-0.84		0.85	0.94	0.93
Fairfield	1642	1636	3278	1691	1871	3562	1727	1871	3598	320	36	9.76	1.01		0.87	0.90	0.91
Hawkesbury	539	907	1446	519	1032	1551	555	995	1550	104	-1	7.19	-0.06		0.90	0.87	0.87
Holroyd	895	998	1893	1092	1132	2224	1171	1077	2248	355	24	18.75	1.08		0.92	0.98	0.98
Liverpool	1067	1423	2490	1445	1839	3284	1559	1832	3391	901	107	36.18	3.26		0.85	0.84	0.83
Parramatta	1664	1597	3261	1796	1772	3568	2187	1810	3997	736	429	22.57	12.02		0.93	0.95	1.02
Penrith	1680	2435	4115	1774	2643	4417	1740	2857	4597	482	180	11.71	4.08		0.94	0.89	0.91
Wollondilly	222	406	628	239	480	719	286	581	867	239	148	38.06	20.58		0.73	0.69	0.75
WSROC	14311	16768	31079	16208	19082	35290	17375	19614	36989	5910	1699	19.02	4.81		0.91	0.90	0.91
WC	6454	6465	12919	7204	7236	14440	8000	7319	15319	2400	879	18.58	6.09		0.92	0.95	0.99
NW	6790	8880	15670	7559	10007	17566	7816	10463	18279	2609	713	16.65	4.06		0.91	0.88	0.87
SW	2760	3945	6705	3551	4986	8537	3775	5173	8948	2243	411	33.45	4.81		0.82	0.85	0.85
GWS	16004	19290	35294	18314	22229	40543	19591	22955	42546	7252	2003	20.55	4.94		0.90	0.90	0.90
SSD	48874	49888	98762	54805	56395	111200	57168	57555	114723	15961	3523	16.16	3.17				
NSW	75680	89485	165165	83083	100450	183533	86331	103917	190248	25083	6715	15.19	3.66				
Australia	209169	267503	476672	234127	306554	540681	247689	327422	575111	98439	34430	20.65	6.37				


Location Quotient
1.40
1.30
1.20
1.10
1.00
0.90
0.80
0.70
0.60
1996
2001
2006
Accommodation and food
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	1387	0.55
Bankstown	2570	0.71
Baulkham Hills	2851	0.89
Blacktown	3939	0.82
Blue Mountains	2024	2.03
Camden	1030	1.17
Campbelltown	2506	1.07
Fairfield	2865	1.01
Hawkesbury	1450	1.13
Holroyd	1386	0.72
Liverpool	1972	0.66
Parramatta	3816	0.70
Penrith	3781	1.18
Wollondilly	468	0.85
WSROC	28041	0.85
WC	12024	0.74
NW	14045	1.04
SW	5976	0.88
GWS	32045	0.88
SydneySD	106011	1.00



6.15.9 Transport, postal and warehousing

Industry per LGA

Household data (1996 - 2006)

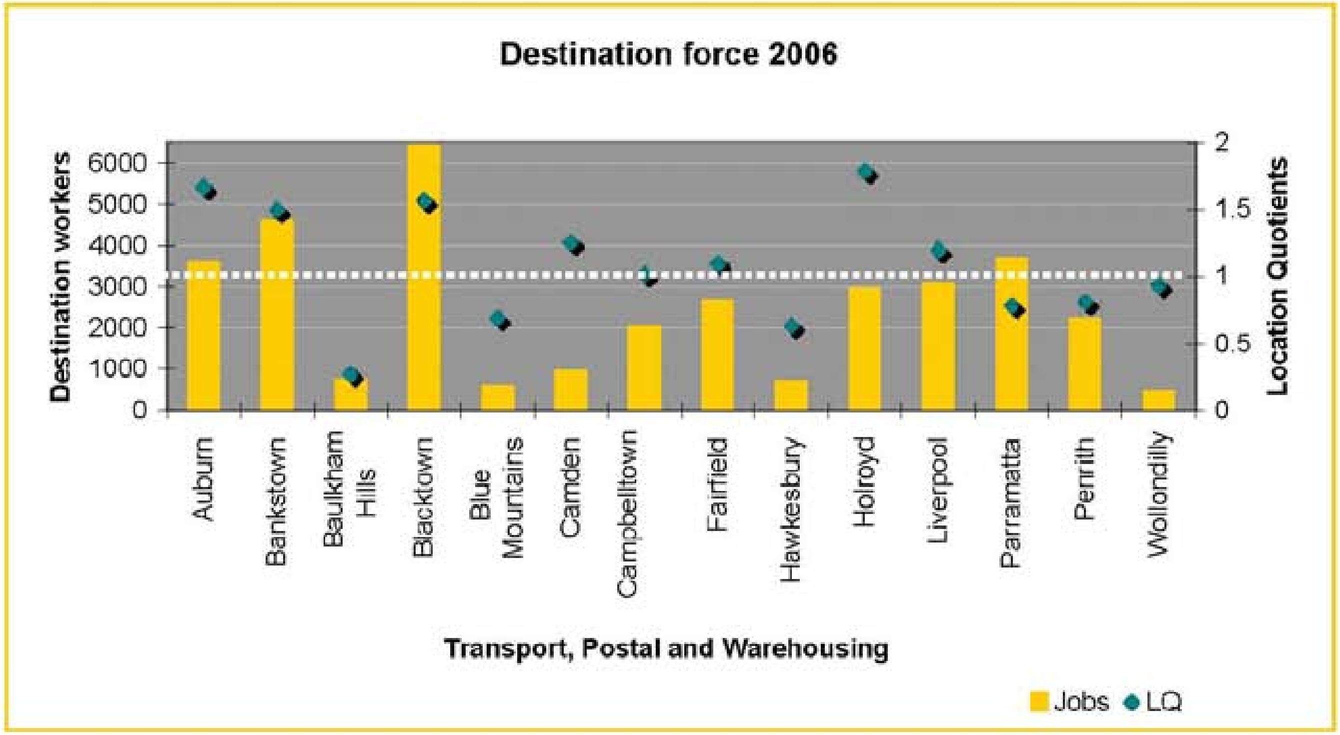
	Transport, postal and warehousing													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	983	299	1282	997	258	1255	1146	296	1442	160	187	12.48	458.91	1.33	1.23	1.16
Bankstown	3744	1153	4897	3825	1141	4966	4083	1138	5221	324	255	6.62	357.58	1.42	1.45	1.48
Baulkham Hills	1679	518	2197	1918	556	2474	2205	661	2866	669	392	30.45	415.47	0.63	0.63	0.64
Blacktown	5048	1337	6385	5732	1629	7361	6836	1882	8718	2333	1357	36.54	435.17	1.19	1.27	1.38
Blue Mountains	1089	218	1307	1047	223	1270	1154	279	1433	126	163	9.64	542.60	0.75	0.70	0.77
Camden	771	202	973	1191	336	1527	1422	399	1821	848	294	87.15	441.96	1.15	1.33	1.38
Campbelltown	3243	800	4043	3504	913	4417	4138	1114	5252	1209	835	29.90	475.25	1.23	1.35	1.55
Fairfield	2975	871	3846	2911	895	3806	3326	949	4275	429	469	11.15	377.65	1.09	1.11	1.21
Hawkesbury	916	243	1159	1044	293	1337	1202	301	1503	344	166	29.68	412.97	0.77	0.86	0.94
Holroyd	1673	451	2124	1674	501	2175	1888	498	2386	262	211	12.34	376.25	1.09	1.11	1.16
Liverpool	2671	758	3429	3464	1027	4491	4019	1170	5189	1760	698	51.33	405.26	1.25	1.32	1.43
Parramatta	2377	650	3027	2389	670	3059	2562	686	3248	221	189	7.30	384.78	0.92	0.94	0.93
Penrith	3627	845	4472	4018	1081	5099	4729	1199	5928	1456	829	32.56	448.38	1.09	1.18	1.32
Wollondilly	629	161	790	820	229	1049	1019	260	1279	489	230	61.90	458.52	0.97	1.16	1.24
WSROC	26782	7343	34125	29019	8274	37293	33150	9059	42209	8084	4916	23.69	410.14	1.06	1.10	1.16
WC	11752	3424	15176	11796	3465	15261	13005	3567	16572	1396	1311	9.20	378.27	1.15	1.16	1.20
NW	12359	3161	15520	13759	3782	17541	16126	4322	20448	4928	2907	31.75	440.67	0.96	1.01	1.09
SW	7314	1921	9235	8979	2505	11484	10598	2943	13541	4306	2057	46.63	440.56	1.20	1.31	1.44
GWS	31425	8506	39931	34534	9752	44286	39729	10832	50561	10630	6275	26.62	418.47	1.08	1.13	1.20
SSD	70243	22761	93004	72641	23765	96406	77410	24731	102141	9137	5735	9.82	329.80			
NSW	100884	30313	131197	103988	31994	135982	111642	33524	145166	13969	9184	10.65	353.73			
Australia	278637	80520	359157	295043	90227	385270	328753	99036	427789	68632	42519	19.11	374.13			


Location Quotient
1.60
1.50
1.40
1.30
1.20
1.10
1.00
0.90
0.80
0.70
0.60
1996
2001
2006
Transport, post, warehousing
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	3583	1.66
Bankstown	4616	1.50
Baulkham Hills	740	0.27
Blacktown	6424	1.57
Blue Mountains	589	0.69
Camden	945	1.26
Campbelltown	2034	1.02
Fairfield	2661	1.10
Hawkesbury	700	0.63
Holroyd	2937	1.79
Liverpool	3074	1.20
Parramatta	3682	0.79
Penrith	2232	0.81
Wollondilly	438	0.93

WSROC	31238	1.11
WC	17479	1.25
NW	10685	0.93
SW	6491	1.12
GWS	34655	1.11
SydneySD	90792	1.00

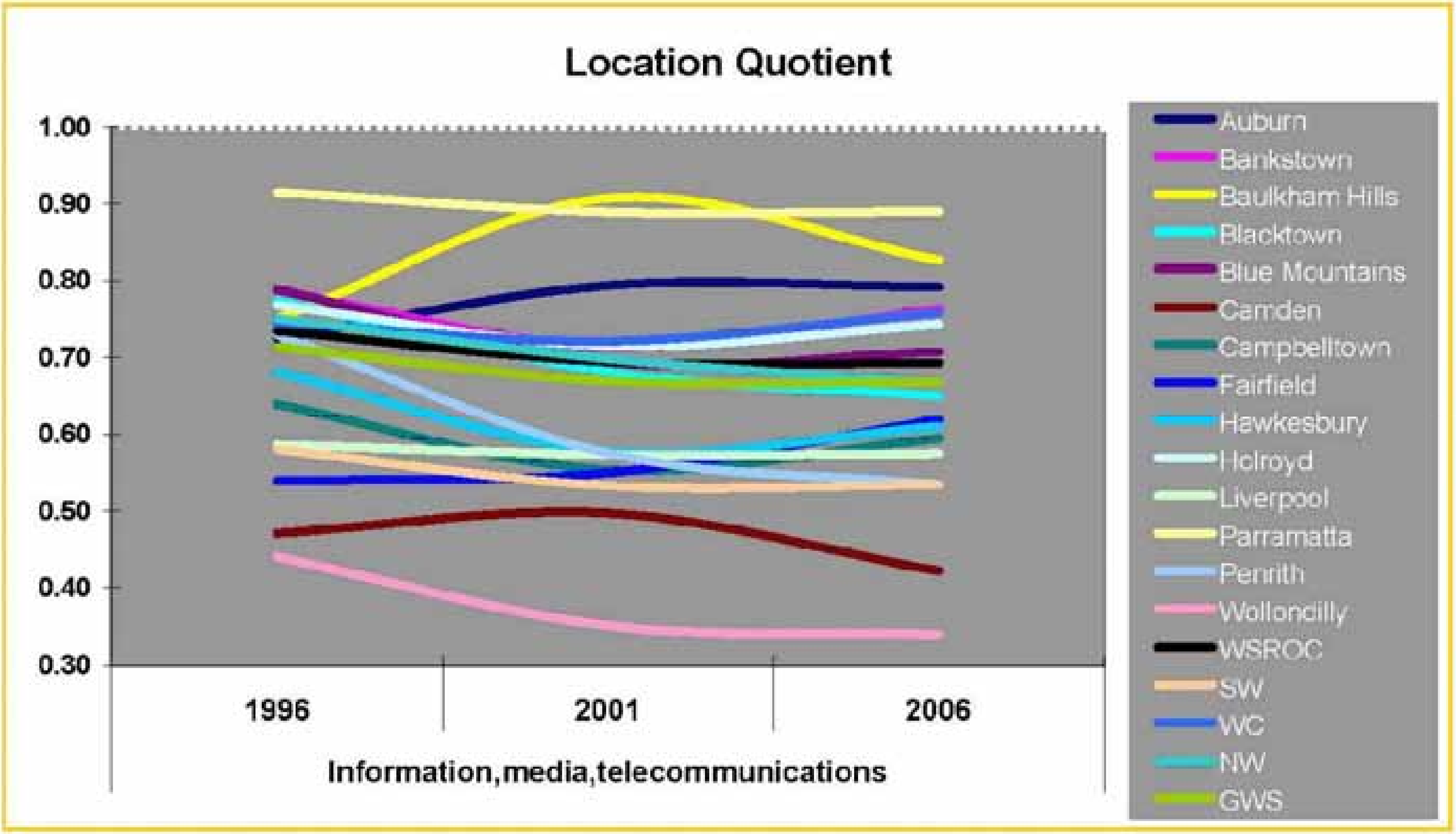


6.15.10 Information media and telecommunications

Industry per LGA

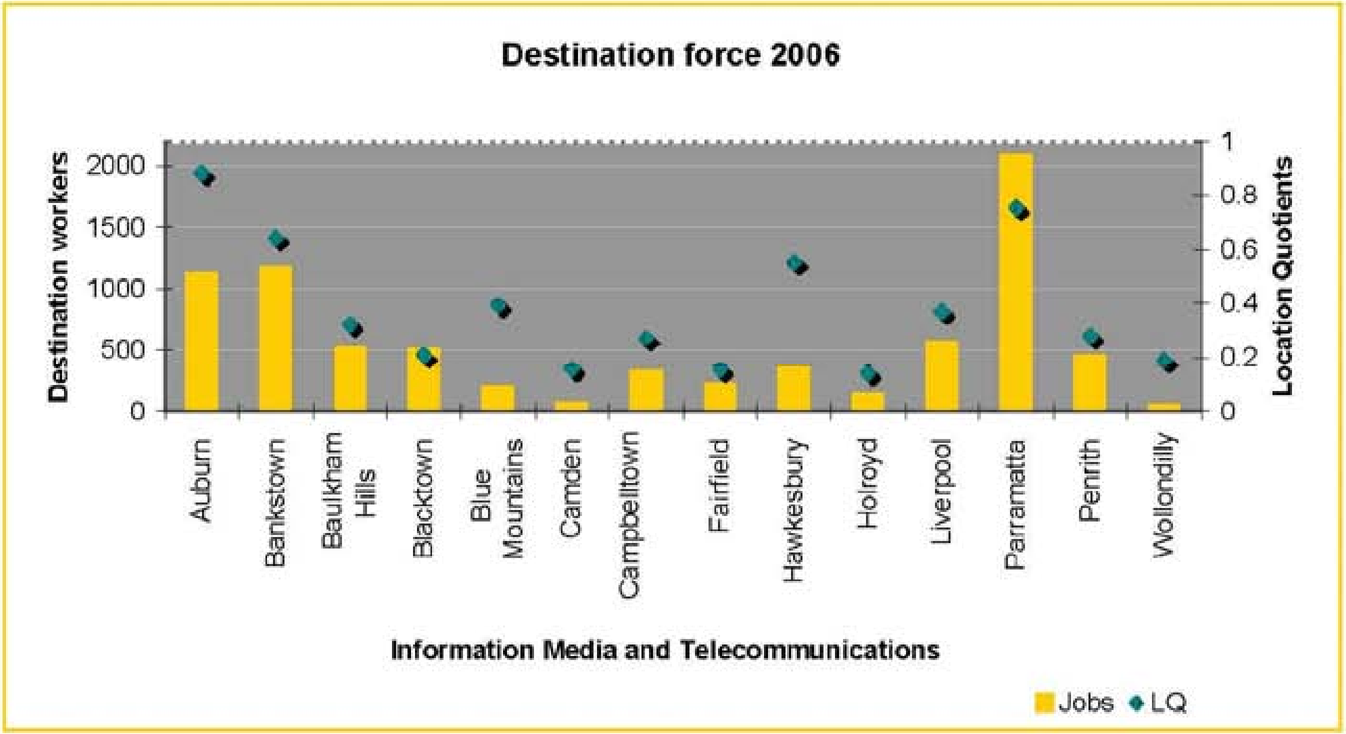
Household data (1996 - 2006)

	Information Media and Telecommunications														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01		1996	2001	2006
Auburn	256	185	441	358	218	576	350	196	546	105	-30	23.81	-5.21		0.72	0.79	0.79
Bankstown	1092	625	1717	1080	664	1744	942	543	1485	-232	-259	-13.51	-14.85		0.79	0.71	0.76
Baulkham Hills	1016	641	1657	1574	969	2543	1303	748	2051	394	-492	23.78	-19.35		0.75	0.91	0.83
Blacktown	1722	900	2622	1819	985	2804	1449	827	2276	-346	-528	-13.20	-18.83		0.77	0.68	0.65
Blue Mountains	582	284	866	570	328	898	473	259	732	-134	-166	-15.47	-18.49		0.79	0.69	0.71
Camden	159	93	252	248	158	406	192	117	309	57	-97	22.62	-23.89		0.47	0.50	0.42
Campbelltown	812	509	1321	812	482	1294	685	429	1114	-207	-180	-15.67	-13.91		0.64	0.55	0.59
Fairfield	805	397	1202	862	485	1347	752	455	1207	5	-140	0.42	-10.39		0.54	0.55	0.62
Hawkesbury	387	263	650	363	275	638	290	248	538	-112	-100	-17.23	-15.67		0.68	0.58	0.61
Holroyd	557	383	940	595	404	999	509	335	844	-96	-155	-10.21	-15.52		0.77	0.71	0.74
Liverpool	653	363	1016	887	504	1391	741	417	1158	142	-233	13.98	-16.75		0.59	0.57	0.57
Parramatta	1157	741	1898	1315	752	2067	1101	624	1725	-173	-342	-9.11	-16.55		0.92	0.89	0.89
Penrith	1230	661	1891	1112	652	1764	850	474	1324	-567	-440	-29.98	-24.94		0.73	0.58	0.53
Wollondilly	152	73	225	139	87	226	124	70	194	-31	-32	-13.78	-14.16		0.44	0.35	0.34
WSROC	9457	5443	14900	10535	6236	16771	8760	5126	13886	-1014	-2885	-6.81	-17.20		0.73	0.69	0.69
WC	3867	2331	6198	4210	2523	6733	3654	2153	5807	-391	-926	-6.31	-13.75		0.75	0.72	0.76
NW	4937	2749	7686	5438	3209	8647	4365	2556	6921	-765	-1726	-9.95	-19.96		0.75	0.70	0.67
SW	1776	1038	2814	2086	1231	3317	1742	1033	2775	-39	-542	-1.39	-16.34		0.58	0.53	0.53
GWS	10580	6118	16698	11734	6963	18697	9761	5742	15503	-1195	-3194	-7.16	-17.08		0.71	0.67	0.67
SSD	34169	24478	58647	40111	28564	68675	33045	23467	56512	-2135	-12163	-3.64	-17.71				
NSW	43650	30902	74552	47879	34477	82356	40013	28765	68778	-5774	-13578	-7.74	-16.49				
Australia	114344	78570	192914	117910	86370	204280	101921	74902	176823	-16091	-27457	-8.34	-13.44				


Location Quotient
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
1996
2001
2006
Information,media,telecommunications
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	1124	0.88
Bankstown	1170	0.64
Baulkham Hills	521	0.32
Blacktown	509	0.21
Blue Mountains	199	0.39
Camden	70	0.16
Campbelltown	323	0.27
Fairfield	224	0.16
Hawkesbury	361	0.55
Holroyd	138	0.14
Liverpool	564	0.37
Parramatta	2088	0.76
Penrith	456	0.28
Wollondilly	53	0.19
WSROC	7354	0.44
WC	4744	0.57
NW	2046	0.30
SW	1010	0.29
GWS	7800	0.42
SydneySD	53677	1.00

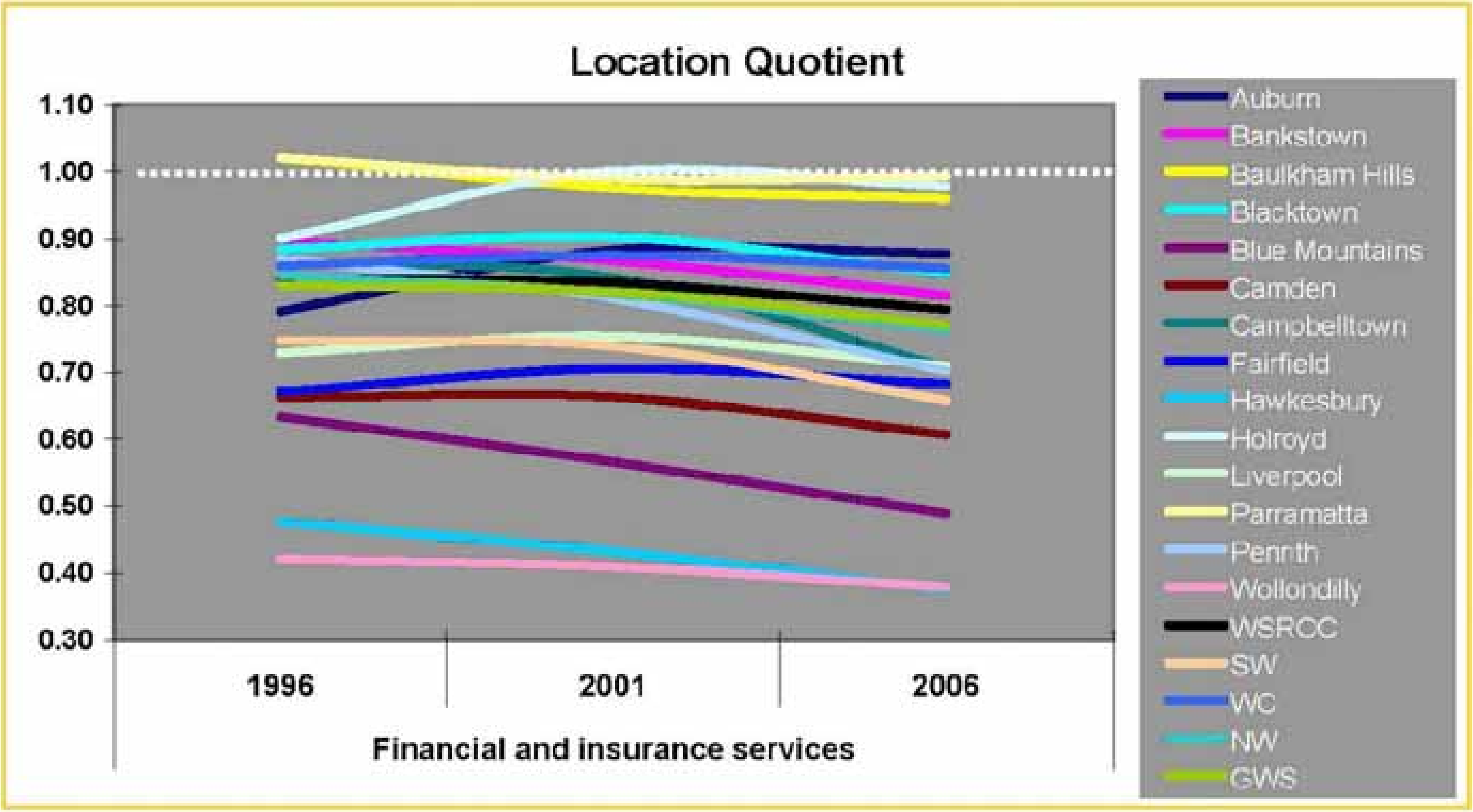


6.15.11 Finance and insurance

Industry per LGA

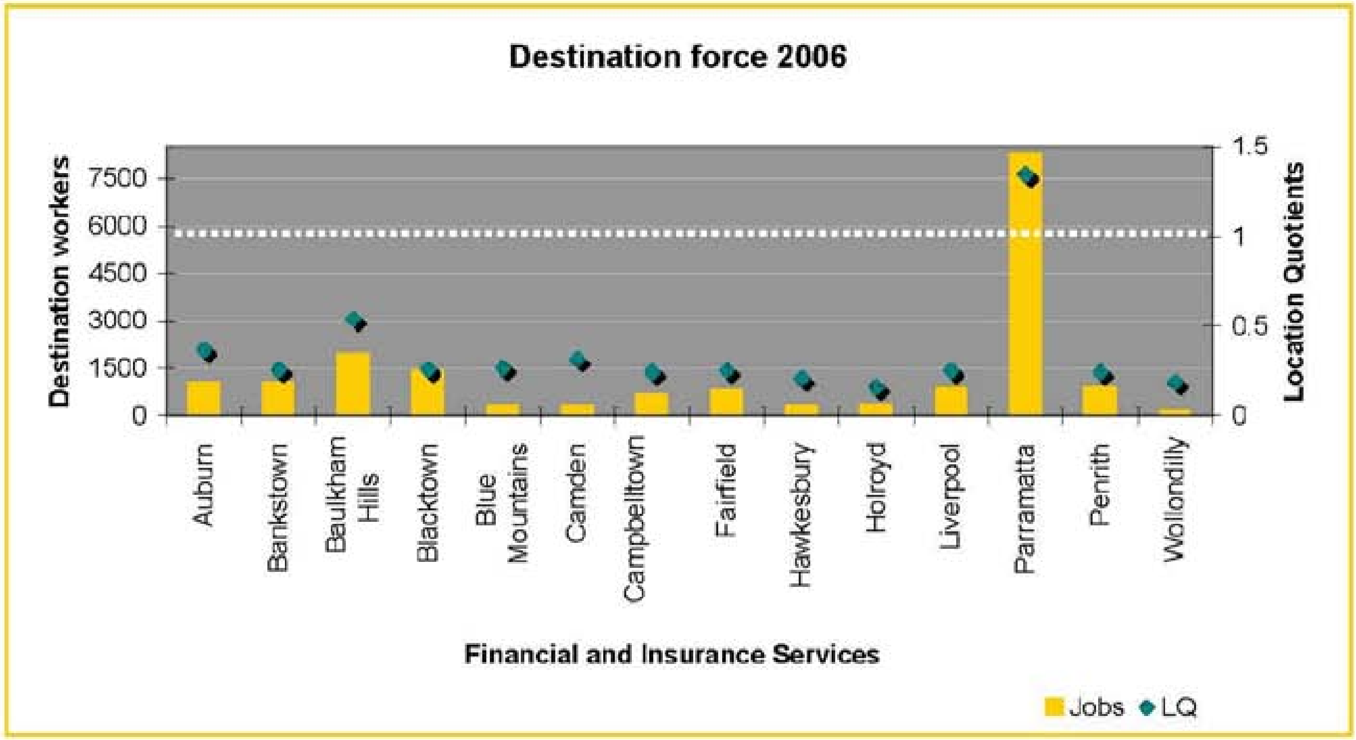
Household data (1996 - 2006)

	Finance and Insurance														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01		1996	2001	2006
Auburn	302	522	824	390	650	1040	547	754	1301	477	261	57.89	25.10		0.79	0.88	0.88
Bankstown	1205	2143	3348	1253	2186	3439	1353	2058	3411	63	-28	1.88	-0.81		0.90	0.87	0.82
Baulkham Hills	2060	1794	3854	2319	2113	4432	2744	2375	5119	1265	687	32.82	15.50		1.02	0.98	0.96
Blacktown	1826	3303	5129	2168	3862	6030	2457	3939	6396	1267	366	24.70	6.07		0.89	0.90	0.85
Blue Mountains	586	604	1190	571	616	1187	561	525	1086	-104	-101	-8.74	-8.51		0.63	0.57	0.49
Camden	205	401	606	306	572	878	370	584	954	348	76	57.43	8.66		0.66	0.66	0.61
Campbelltown	1143	1921	3064	1173	2019	3192	1128	1721	2849	-215	-343	-7.02	-10.75		0.87	0.84	0.71
Fairfield	865	1693	2558	969	1835	2804	1118	1743	2861	303	57	11.85	2.03		0.67	0.71	0.68
Hawkesbury	278	499	777	288	485	773	269	441	710	-67	-63	-8.62	-8.15		0.48	0.43	0.37
Holroyd	751	1136	1887	860	1407	2267	989	1395	2384	497	117	26.34	5.16		0.90	1.00	0.98
Liverpool	692	1470	2162	984	1983	2967	1106	1963	3069	907	102	41.95	3.44		0.73	0.75	0.71
Parramatta	1594	2028	3622	1613	2114	3727	1828	2303	4131	509	404	14.05	10.84		1.02	0.99	0.99
Penrith	1381	2483	3864	1475	2559	4034	1384	2349	3733	-131	-301	-3.39	-7.46		0.87	0.81	0.70
Wollondilly	118	249	367	146	281	427	140	324	464	97	37	26.43	8.67		0.42	0.41	0.38
WSROC	11540	17675	29215	12690	19810	32700	14356	19845	34201	4986	1501	17.07	4.59		0.84	0.83	0.79
WC	4717	7522	12239	5085	8192	13277	5835	8253	14088	1849	811	15.11	6.11		0.86	0.88	0.86
NW	6131	8683	14814	6821	9635	16456	7415	9629	17044	2230	588	15.05	3.57		0.85	0.82	0.76
SW	2158	4041	6199	2609	4855	7464	2744	4592	7336	1137	-128	18.34	-1.71		0.75	0.74	0.66
GWS	13006	20246	33252	14515	22682	37197	15994	22474	38468	5216	1271	15.69	3.42		0.83	0.82	0.77
SSD	46065	54221	100286	52114	59245	111359	59923	61456	121379	21093	10020	21.03	9.00				
NSW	53706	68179	121885	59323	72632	131955	67989	76412	144401	22516	12446	18.47	9.43				
Australia	127364	169092	296456	136474	175922	312396	158753	189833	348586	52130	36190	17.58	11.58				


Location Quotient
1.10
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
1996
2001
2006
Financial and insurance services
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSRCC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	1039	0.37
Bankstown	1031	0.26
Baulkham Hills	1941	0.54
Blacktown	1377	0.26
Blue Mountains	298	0.27
Camden	310	0.31
Campbelltown	637	0.24
Fairfield	799	0.25
Hawkesbury	298	0.21
Holroyd	339	0.16
Liverpool	835	0.25
Parramatta	8263	1.35
Penrith	877	0.24
Wollondilly	113	0.18
WSROC	17097	0.46
WC	11471	0.63
NW	4791	0.32
SW	1895	0.25
GWS	18157	0.44
SydneySD	118966	1

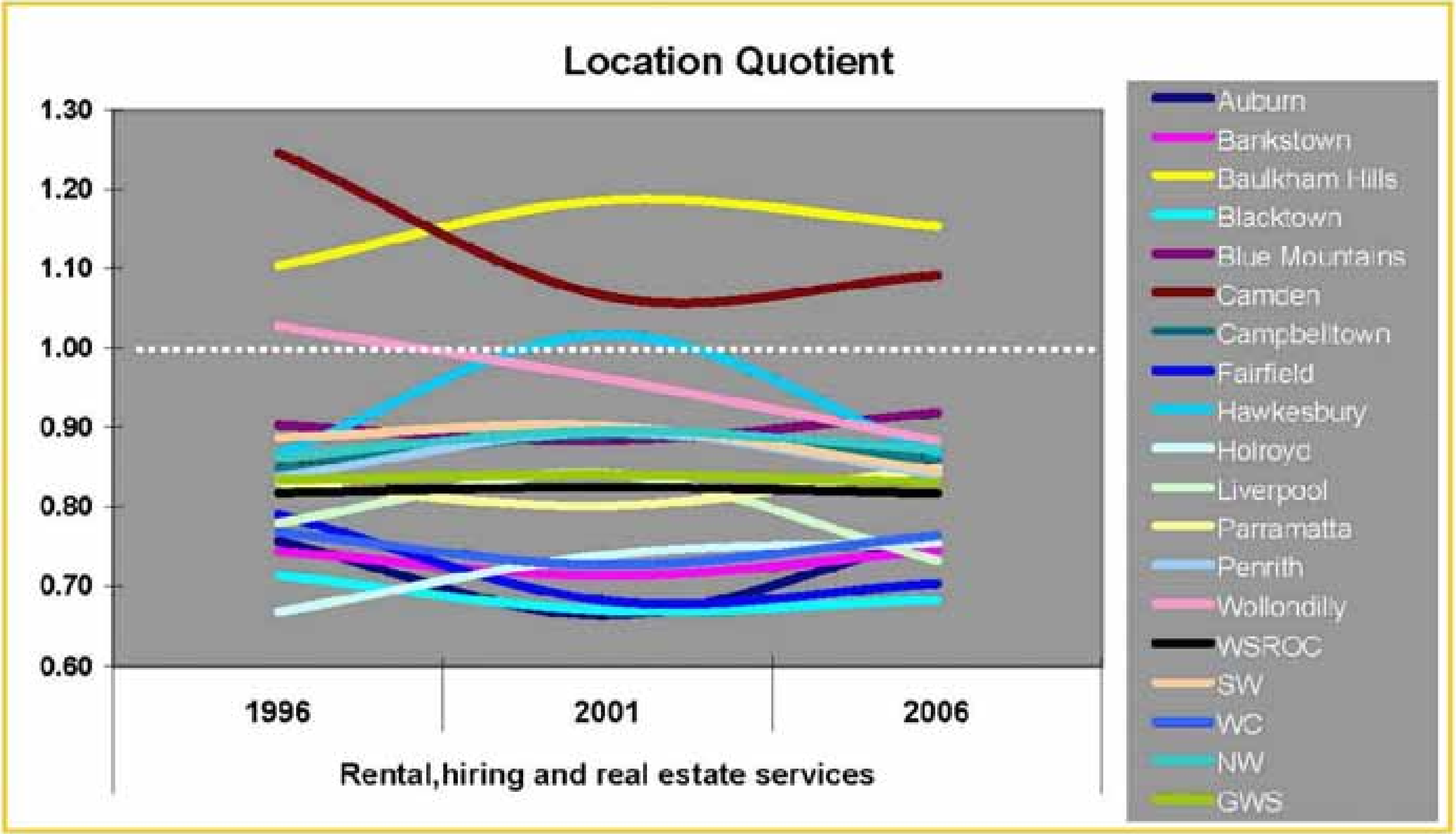


6.15.12 Rental, hiring and real estate services

Industry per LGA

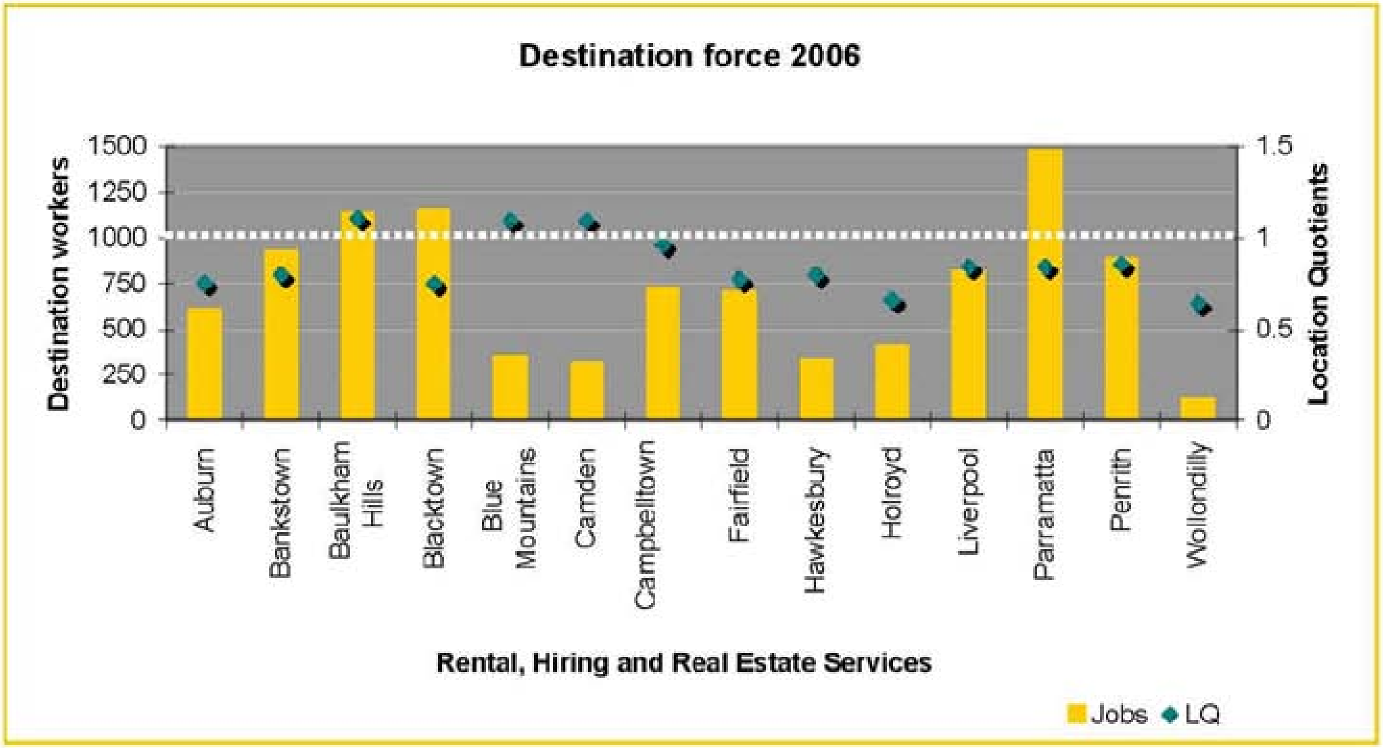
Household data (1996 - 2006)

	Rental,Hiring and Real Estate Services													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	124	97	221	134	111	245	189	136	325	104	80	47.06	-32.65	0.76	0.66	0.76
Bankstown	428	351	779	479	408	887	466	430	896	117	9	15.02	-1.01	0.74	0.71	0.74
Baulkham Hills	651	519	1170	916	777	1693	936	835	1771	601	78	51.37	-4.61	1.10	1.19	1.15
Blacktown	611	549	1160	715	688	1403	764	717	1481	321	78	27.67	-5.56	0.71	0.67	0.68
Blue Mountains	230	246	476	280	302	582	267	321	588	112	6	23.53	-1.03	0.90	0.88	0.92
Camden	177	143	320	216	227	443	224	270	494	174	51	54.38	-11.51	1.25	1.06	1.09
Campbelltown	441	402	843	503	556	1059	488	509	997	154	-62	18.27	5.85	0.85	0.89	0.86
Fairfield	484	362	846	458	392	850	464	384	848	2	-2	0.24	0.24	0.79	0.68	0.70
Hawkesbury	209	188	397	270	302	572	220	253	473	76	-99	19.14	17.31	0.87	1.02	0.87
Holroyd	221	171	392	292	234	526	275	255	530	138	4	35.20	-0.76	0.67	0.74	0.75
Liverpool	361	288	649	520	519	1039	466	446	912	263	-127	40.52	12.22	0.78	0.84	0.73
Parramatta	458	369	827	489	459	948	532	485	1017	190	69	22.97	-7.28	0.83	0.80	0.85
Penrith	559	484	1043	695	701	1396	609	679	1288	245	-108	23.49	7.74	0.84	0.89	0.84
Wollondilly	123	129	252	156	159	315	144	168	312	60	-3	23.81	0.95	1.03	0.96	0.88
WSROC	4336	3624	7960	5248	4893	10141	5188	4941	10129	2169	-12	27.25	0.12	0.82	0.82	0.82
WC	1715	1350	3065	1852	1604	3456	1926	1690	3616	551	160	17.98	-4.63	0.77	0.73	0.76
NW	2260	1986	4246	2876	2770	5646	2796	2805	5601	1355	-45	31.91	0.80	0.86	0.90	0.87
SW	1102	962	2064	1395	1461	2856	1322	1393	2715	651	-141	31.54	4.94	0.89	0.90	0.85
GWS	5077	4298	9375	6123	5835	11958	6044	5888	11932	2557	-26	27.27	0.22	0.83	0.84	0.83
SSD	15376	12781	28157	18326	16641	34967	18036	16917	34953	6796	-14	24.14	0.04			
NSW	22156	18795	40951	25372	23822	49194	25288	25182	50470	9519	1276	23.24	-2.59			
Australia	64494	54060	118554	72557	68498	141055	75843	78064	153907	35353	12852	29.82	-9.11			


Location Quotient
1.30
1.20
1.10
1.00
0.90
0.80
0.70
0.60
1996
2001
2006
Rental,hiring and real estate services
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	609	0.75
Bankstown	923	0.80
Baulkham Hills	1134	1.11
Blacktown	1154	0.75
Blue Mountains	351	1.09
Camden	309	1.09
Campbelltown	723	0.96
Fairfield	704	0.77
Hawkesbury	330	0.80
Holroyd	407	0.66
Liverpool	813	0.84
Parramatta	1480	0.84
Penrith	887	0.86
Wollondilly	113	0.64
WSROC	8792	0.83
WC	4123	0.79
NW	3856	0.89
SW	1958	0.90
GWS	9937	0.85
SydneySD	34076	1.00

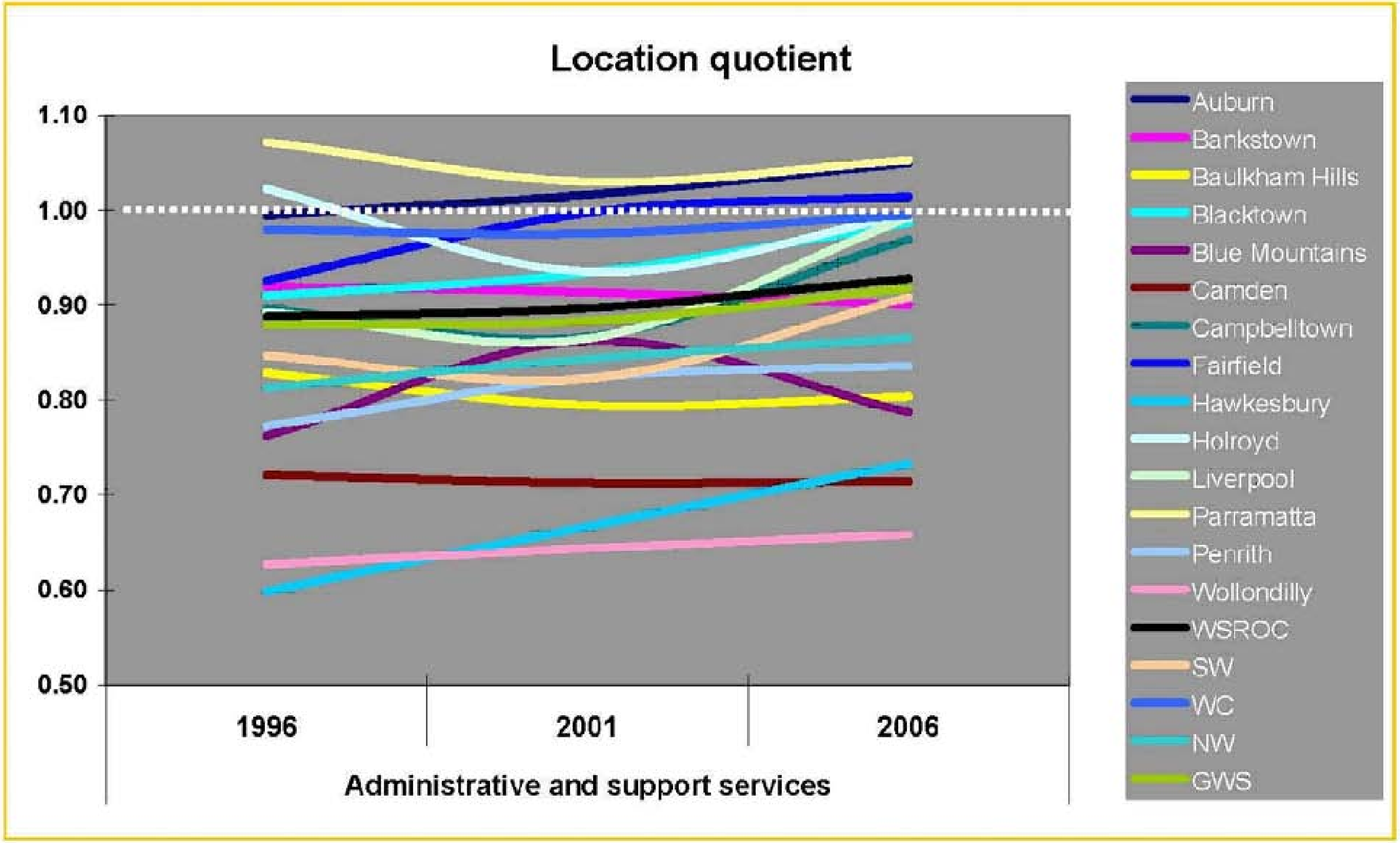


6.15.13 Administrative and supportive services

Industry per LGA

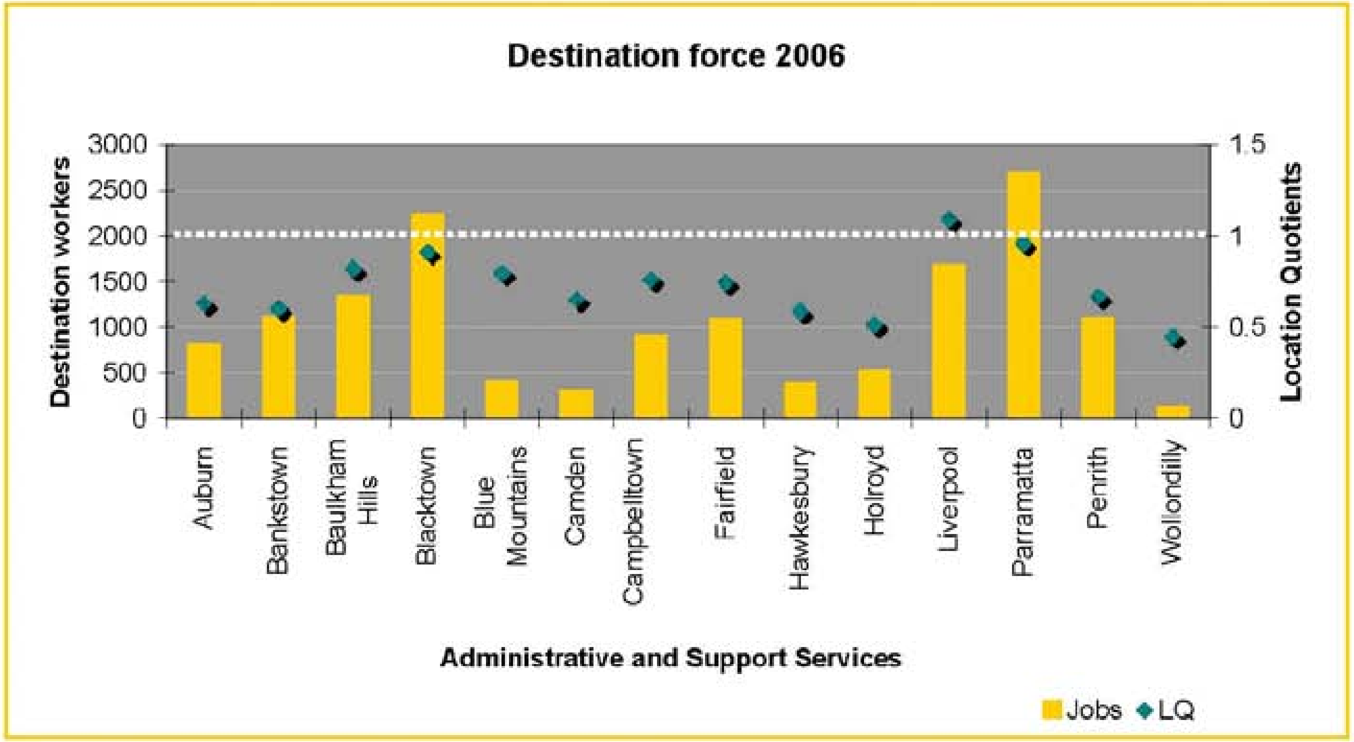
Household data (1996 - 2006)

	Administrative and supportive services													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	308	259	567	364	353	717	447	382	829	262	112	46.21	15.62	1.00	1.02	1.05
Bankstown	932	946	1878	1039	1131	2170	994	1013	2007	129	-163	6.87	-7.51	0.92	0.91	0.90
Baulkham Hills	811	902	1713	1041	1124	2165	1141	1144	2285	572	120	33.39	5.54	0.83	0.79	0.80
Blacktown	1420	1466	2886	1818	1920	3738	1964	1997	3961	1075	223	37.25	5.97	0.91	0.93	0.99
Blue Mountains	381	403	784	552	534	1086	493	441	934	150	-152	19.13	-14.00	0.76	0.86	0.79
Camden	149	212	361	276	290	566	253	346	599	238	33	65.93	5.83	0.72	0.71	0.71
Campbelltown	882	853	1735	947	1023	1970	950	1132	2082	347	112	20.00	5.69	0.90	0.87	0.97
Fairfield	953	980	1933	1112	1265	2377	1088	1179	2267	334	-110	17.28	-4.63	0.93	1.00	1.01
Hawkesbury	260	275	535	359	358	717	363	377	740	205	23	38.32	3.21	0.60	0.67	0.73
Holroyd	575	597	1172	586	684	1270	661	633	1294	122	24	10.41	1.89	1.02	0.94	0.99
Liverpool	691	758	1449	975	1065	2040	1071	1218	2289	840	249	57.97	12.21	0.89	0.87	0.99
Parramatta	1007	1075	2082	1189	1138	2327	1226	1111	2337	255	10	12.25	0.43	1.07	1.03	1.05
Penrith	853	1023	1876	1114	1340	2454	1127	1245	2372	496	-82	26.44	-3.34	0.77	0.82	0.84
Wollondilly	156	144	300	194	209	403	206	225	431	131	28	43.67	6.95	0.63	0.64	0.66
WSROC	8191	8684	16875	10149	10912	21061	10575	10740	21315	4440	254	26.31	1.21	0.89	0.90	0.93
WC	3775	3857	7632	4290	4571	8861	4416	4318	8734	1102	-127	14.44	-1.43	0.98	0.98	1.00
NW	3725	4069	7794	4884	5276	10160	5088	5204	10292	2498	132	32.05	1.30	0.81	0.84	0.87
SW	1878	1967	3845	2392	2587	4979	2480	2921	5401	1556	422	40.47	8.48	0.85	0.82	0.91
GWS	9378	9893	19271	11566	12434	24000	11984	12443	24427	5156	427	26.76	1.78	0.88	0.88	0.92
SSD	25853	29056	54909	31211	35540	66751	31045	33683	64728	9819	-2023	17.88	-3.03			
NSW	34694	39901	74595	43314	49211	92525	43167	47141	90308	15713	-2217	21.06	-2.40			
Australia	99299	112437	211736	131252	145282	276534	137244	149378	286622	74886	10088	35.37	3.65			


Location quotient
1.10
1.00
0.90
0.80
0.70
0.60
0.50
1996
2001
2006
Administrative and support services
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	813	0.63
Bankstown	1112	0.60
Baulkham Hills	1344	0.82
Blacktown	2236	0.91
Blue Mountains	408	0.80
Camden	294	0.65
Campbelltown	914	0.76
Fairfield	1085	0.75
Hawkesbury	388	0.59
Holroyd	509	0.52
Liverpool	1679	1.09
Parramatta	2691	0.96
Penrith	1103	0.67
Wollondilly	127	0.45
WSROC	13368	0.80
WC	6210	0.74
NW	5479	0.79
SW	3014	0.87
GWS	14703	0.78
SydneySD	54318	1.00

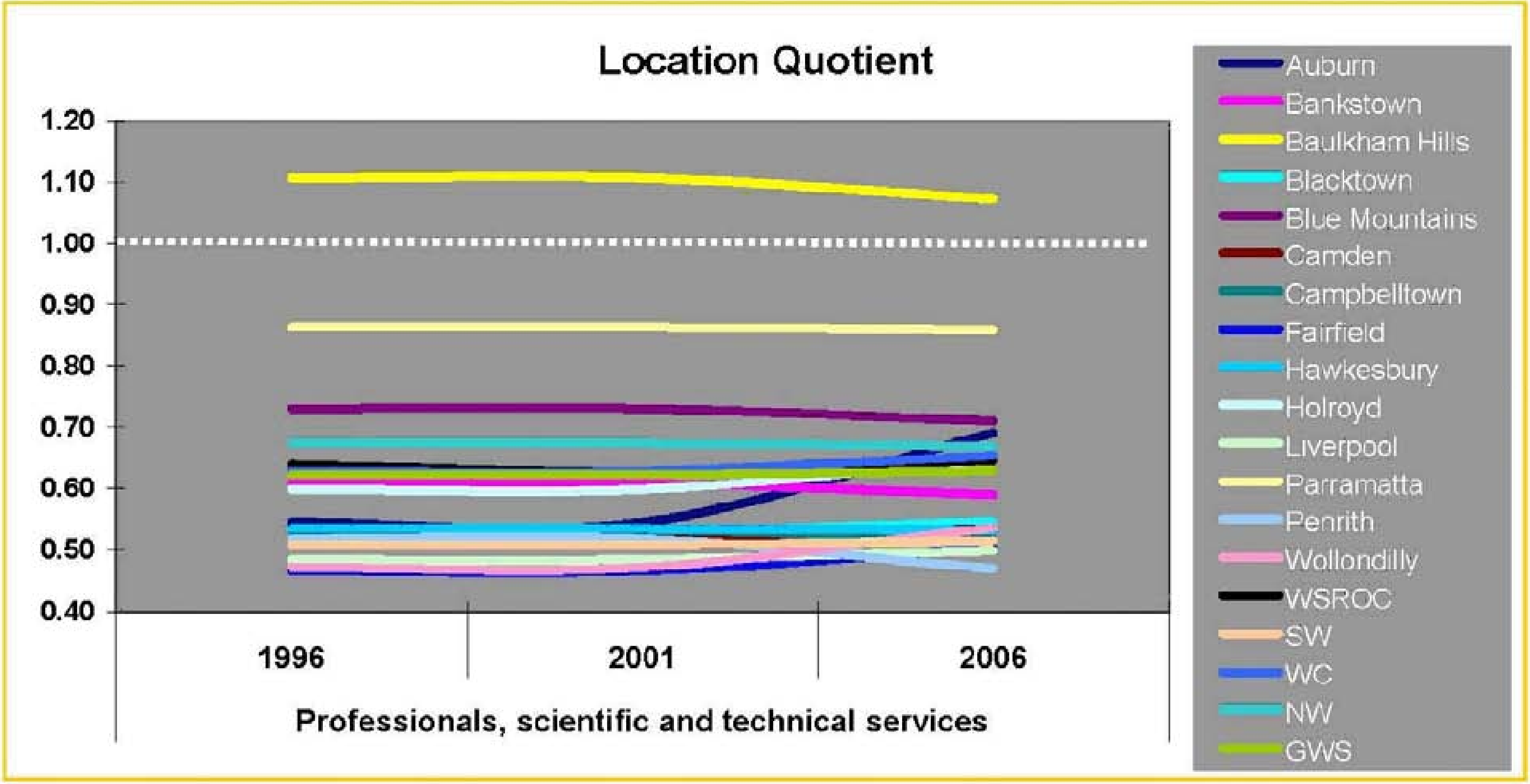


6.15.14 Professional, scientific and technical services

Industry per LGA

Household data (1996 - 2006)

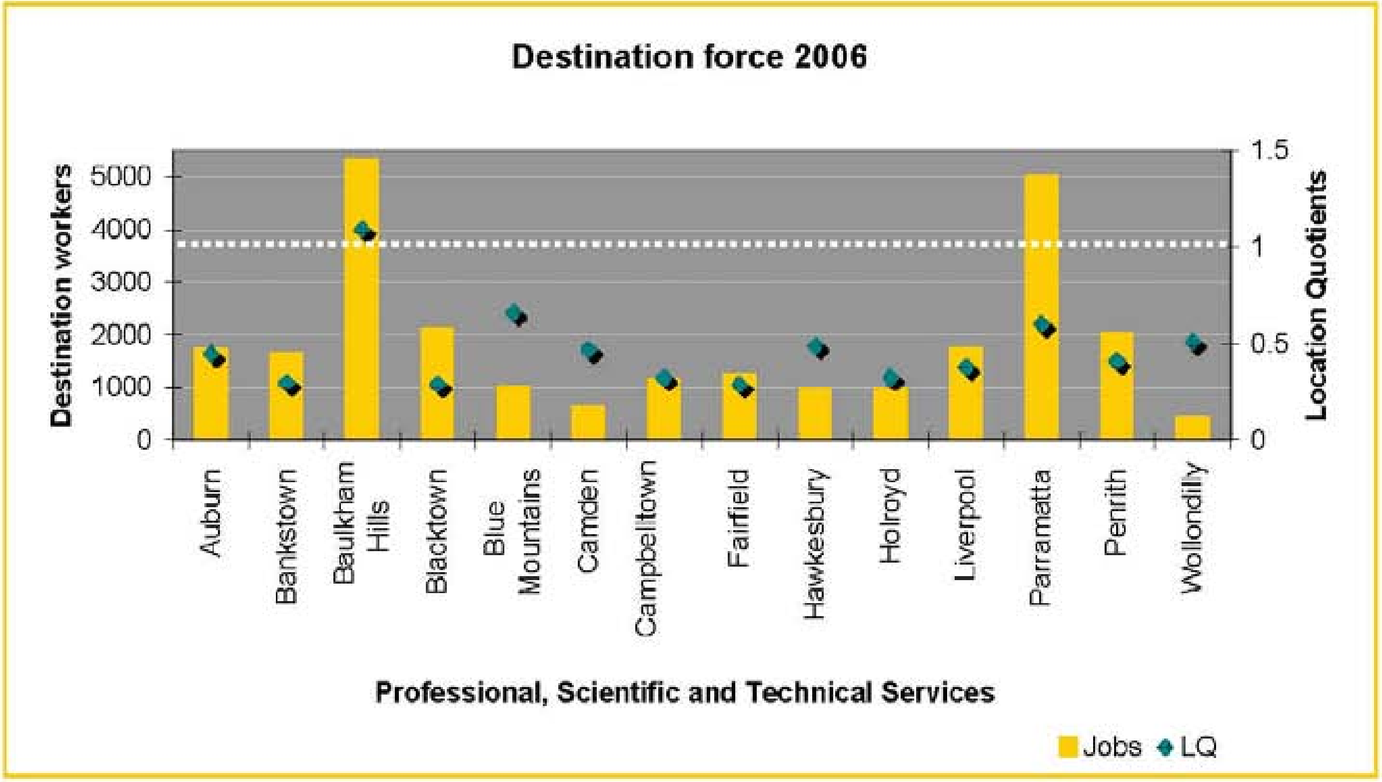
	Professional, scientific and technical services													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	417	353	770	592	465	1057	836	579	1415	645	358	83.77	33.87	0.54	0.54	0.69
Bankstown	1522	1559	3081	1807	1587	3394	1786	1624	3410	329	16	10.68	0.47	0.61	0.61	0.59
Baulkham Hills	3330	2346	5676	4068	3057	7125	4496	3417	7913	2237	788	39.41	11.06	1.11	1.11	1.07
Blacktown	2101	2059	4160	2624	2547	5171	3118	2565	5683	1523	512	36.61	9.90	0.53	0.53	0.55
Blue Mountains	1064	799	1863	1221	974	2195	1241	944	2185	322	-10	17.28	-0.46	0.73	0.73	0.71
Camden	298	348	646	473	536	1009	582	582	1164	518	155	80.19	15.36	0.52	0.52	0.54
Campbelltown	1196	1363	2559	1282	1517	2799	1394	1491	2885	326	86	12.74	3.07	0.53	0.53	0.52
Fairfield	1164	1250	2414	1387	1336	2723	1507	1416	2923	509	200	21.09	7.34	0.47	0.47	0.50
Hawkesbury	575	611	1186	636	721	1357	659	735	1394	208	37	17.54	2.73	0.53	0.53	0.53
Holroyd	875	826	1701	1098	1043	2141	1211	974	2185	484	44	28.45	2.06	0.60	0.60	0.65
Liverpool	925	1024	1949	1413	1456	2869	1538	1450	2988	1039	119	53.31	4.15	0.48	0.48	0.50
Parramatta	2298	1864	4162	2685	2133	4818	2793	2157	4950	788	132	18.93	2.74	0.86	0.86	0.86
Penrith	1526	1594	3120	1699	1893	3592	1704	1748	3452	332	-140	10.64	-3.90	0.52	0.52	0.47
Wollondilly	271	289	560	366	447	813	402	509	911	351	98	62.68	12.05	0.47	0.47	0.54
WSROC	15797	14285	30082	19230	17212	36442	20889	17609	38498	8416	2056	27.98	5.64	0.64	0.63	0.65
WC	6276	5852	12128	7569	6564	14133	8133	6750	14883	2755	750	22.72	5.31	0.63	0.63	0.65
NW	8596	7409	16005	10248	9192	19440	11218	9409	20627	4622	1187	28.88	6.11	0.67	0.67	0.67
SW	2690	3024	5714	3534	3956	7490	3916	4032	7948	2234	458	39.10	6.11	0.51	0.51	0.52
GWS	17562	16285	33847	21351	19712	41063	23267	20191	43458	9611	2395	28.40	5.83	0.62	0.62	0.63
SSD	73976	62210	136186	90224	74960	165184	92070	75886	167956	31770	2772	23.33	1.68			
NSW	92119	77087	169206	110114	93355	203469	114869	97457	212326	43120	8857	25.48	4.35			
Australia	260558	206612	467170	301290	247201	548491	328187	273830	602017	134847	53526	28.86	9.76			



Location Quotient
1.20
1.10
1.00
0.90
0.80
0.70
0.60
0.50
0.40
1996
2001
2006
Professionals, scientific and technical services
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	1712	0.45
Bankstown	1634	0.30
Baulkham Hills	5325	1.09
Blacktown	2117	0.29
Blue Mountains	1006	0.66
Camden	630	0.47
Campbelltown	1150	0.32
Fairfield	1241	0.29
Hawkesbury	960	0.49
Holroyd	957	0.33
Liverpool	1731	0.38
Parramatta	5026	0.60
Penrith	2015	0.41
Wollondilly	426	0.51
WSROC	23724	0.47
WC	10570	0.42
NW	11423	0.56
SW	3937	0.38
GWS	25930	0.47
SydneySD	161671	1.00

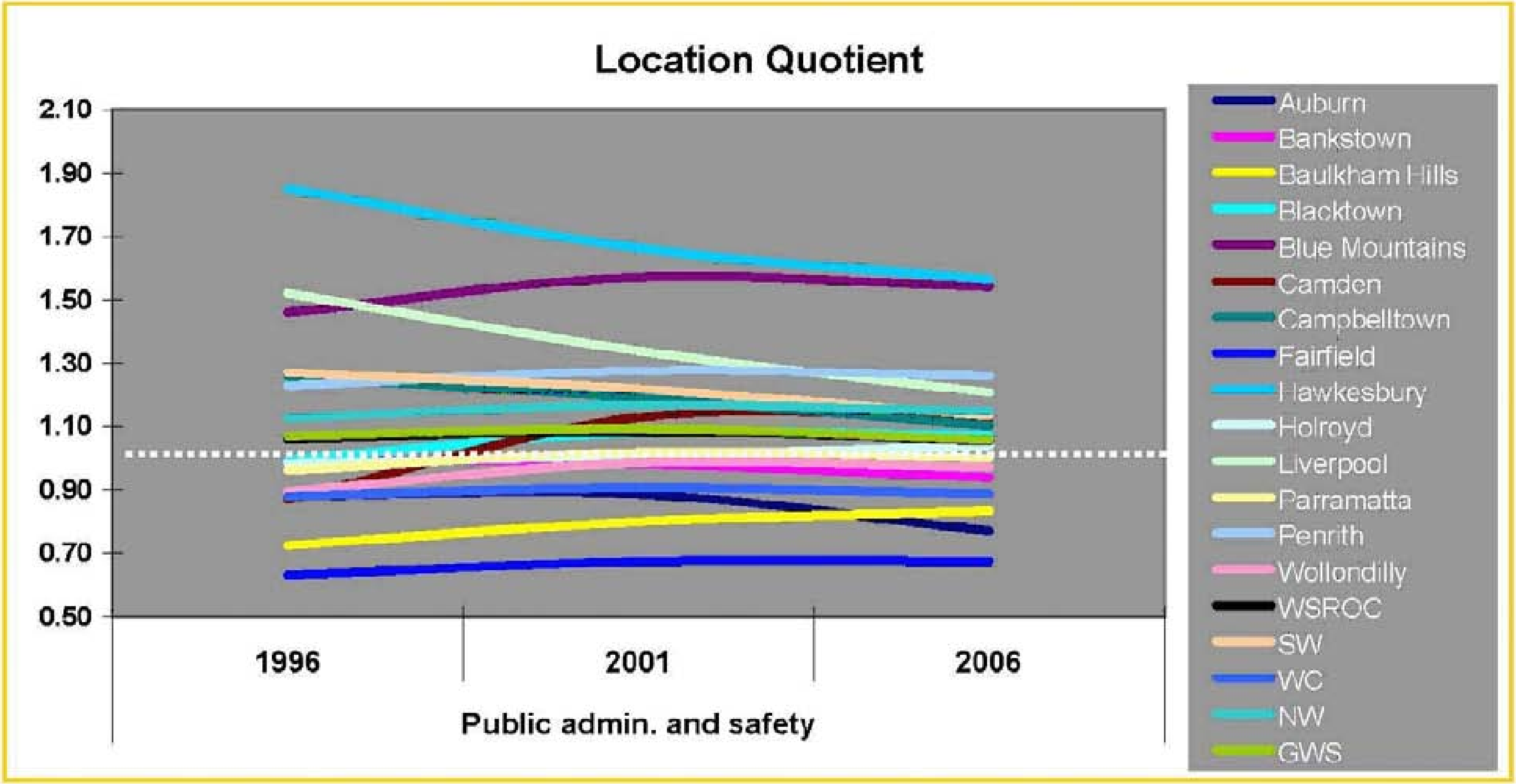


6.15.15 Public administration and safety

Industry per LGA

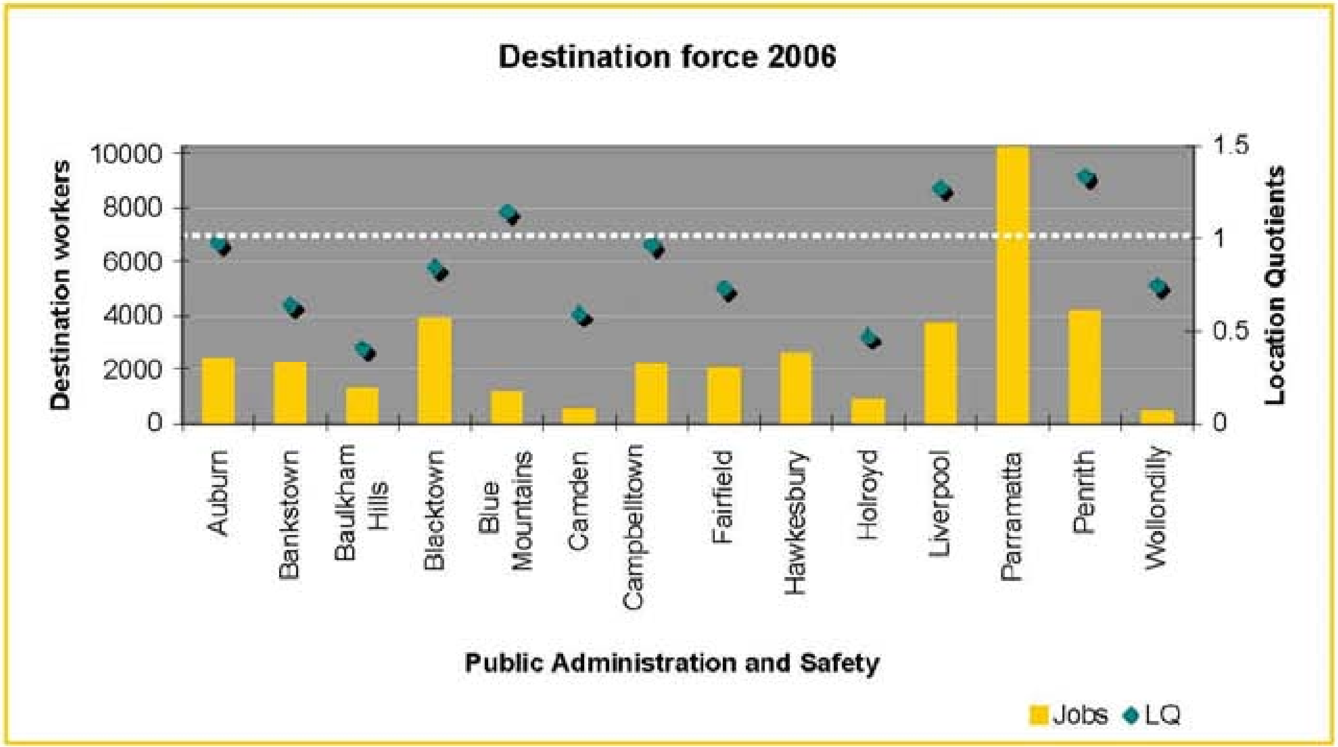
Household data (1996 - 2006)

	Public administration and safety													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01	1996	2001	2006
Auburn	492	310	802	511	310	821	615	376	991	189	170	23.57	20.71	0.88	0.89	0.77
Bankstown	2112	1142	3254	1837	1225	3062	2060	1347	3407	153	345	4.70	11.27	1.00	0.98	0.94
Baulkham Hills	1550	840	2390	1752	1105	2857	2240	1613	3853	1463	996	61.21	34.86	0.72	0.80	0.83
Blacktown	3049	1995	5044	3364	2314	5678	3968	3035	7003	1959	1325	38.84	23.34	1.00	1.08	1.07
Blue Mountains	1563	834	2397	1625	972	2597	1779	1197	2976	579	379	24.16	14.59	1.46	1.57	1.54
Camden	430	265	695	702	473	1175	899	639	1538	843	363	121.29	30.89	0.87	1.13	1.13
Campbelltown	2434	1455	3889	2155	1393	3548	2212	1641	3853	-36	305	-0.93	8.60	1.26	1.19	1.10
Fairfield	1195	904	2099	1150	957	2107	1287	1167	2454	355	347	16.91	16.47	0.63	0.67	0.67
Hawkesbury	1923	718	2641	1593	754	2347	1657	916	2573	-68	226	-2.57	9.63	1.85	1.66	1.56
Holroyd	1091	706	1797	1059	736	1795	1213	988	2201	404	406	22.48	22.62	0.98	1.01	1.04
Liverpool	2843	1094	3937	2804	1343	4147	2987	1550	4537	600	390	15.24	9.40	1.52	1.34	1.21
Parramatta	1863	1118	2981	1753	1264	3017	2043	1569	3612	631	595	21.17	19.72	0.96	1.02	1.00
Penrith	3051	1713	4764	3007	1989	4996	3248	2577	5825	1061	829	22.27	16.59	1.23	1.28	1.26
Wollondilly	423	260	683	496	314	810	589	445	1034	351	224	51.39	27.65	0.89	0.99	0.97
WSROC	20732	11374	32106	20455	12969	33424	23097	16335	39432	7326	6008	22.82	17.98	1.06	1.08	1.05
WC	6753	4180	10933	6310	4492	10802	7218	5447	12665	1732	1863	15.84	17.25	0.88	0.91	0.89
NW	11136	6100	17236	11341	7134	18475	12892	9338	22230	4994	3755	28.97	20.32	1.13	1.17	1.15
SW	6130	3074	9204	6157	3523	9680	6687	4275	10962	1758	1282	19.10	13.24	1.27	1.22	1.13
GWS	24019	13354	37373	23808	15149	38957	26797	19060	45857	8484	6900	22.70	17.71	1.07	1.09	1.06
SSD	55701	31921	87622	52874	34761	87635	61594	43797	105391	17769	17756	20.28	20.26			
NSW	92603	49527	142130	88469	55136	143605	103388	71170	174558	32428	30953	22.82	21.55			
Australia	297986	168541	466527	289015	194675	483690	341902	266703	608605	142078	124915	30.45	25.83			


Location Quotient
2.10
1.90
1.70
1.50
1.30
1.10
0.90
0.70
0.50
1996
2001
2006
Public admin. and safety
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	2370	0.98
Bankstown	2222	0.64
Baulkham Hills	1254	0.41
Blacktown	3883	0.84
Blue Mountains	1099	1.14
Camden	500	0.59
Campbelltown	2177	0.97
Fairfield	1993	0.73
Hawkesbury	2554	2.06
Holroyd	867	0.47
Liverpool	3682	1.27
Parramatta	10227	1.94
Penrith	4146	1.34
Wollondilly	394	0.75
WSROC	34297	1.09
WC	17679	1.12
NW	12936	1.00
SW	6753	1.04
GWS	37368	1.06
SydneySD	102127	1.00

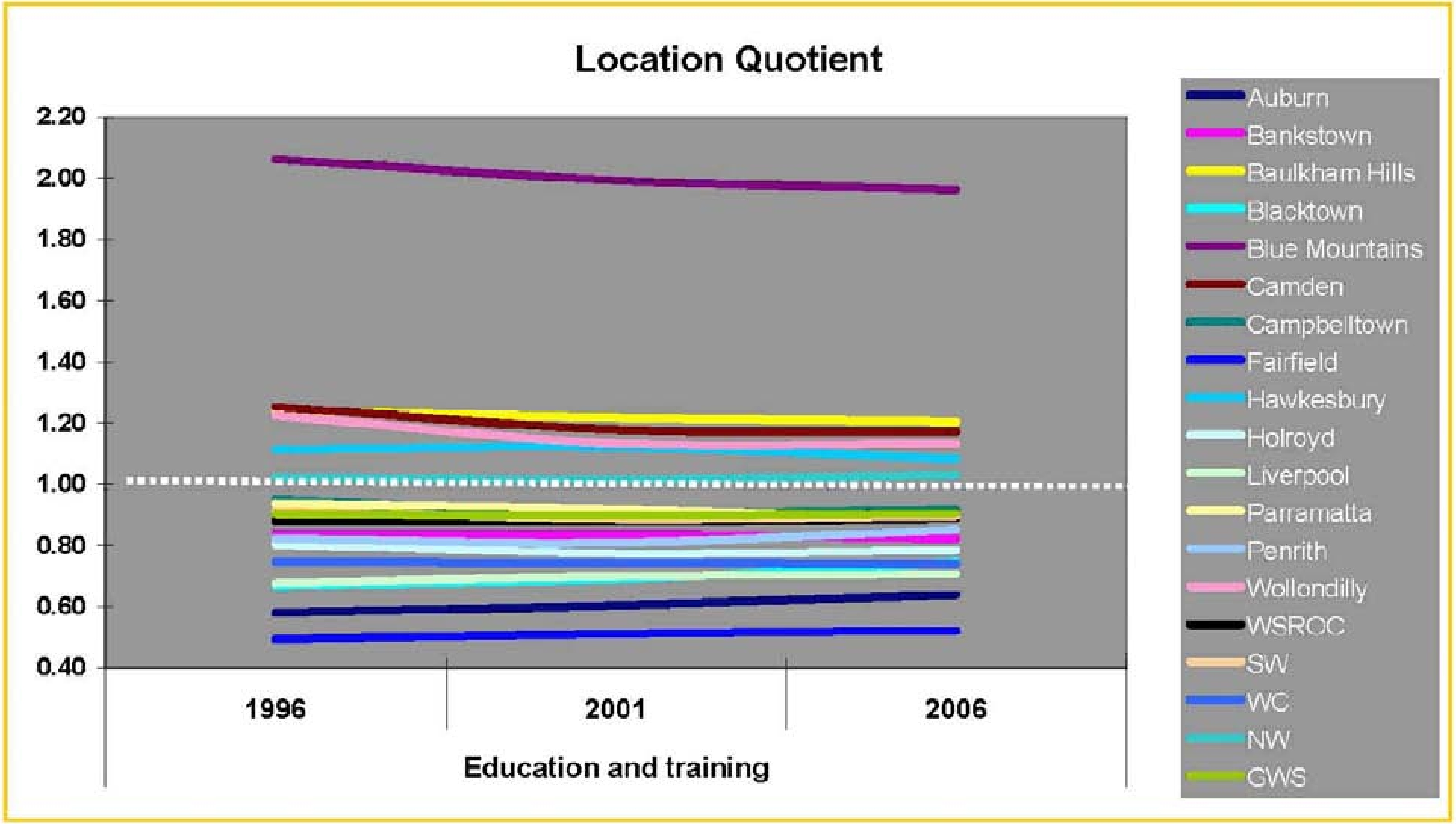


6.15.16 Education and training

Industry per LGA

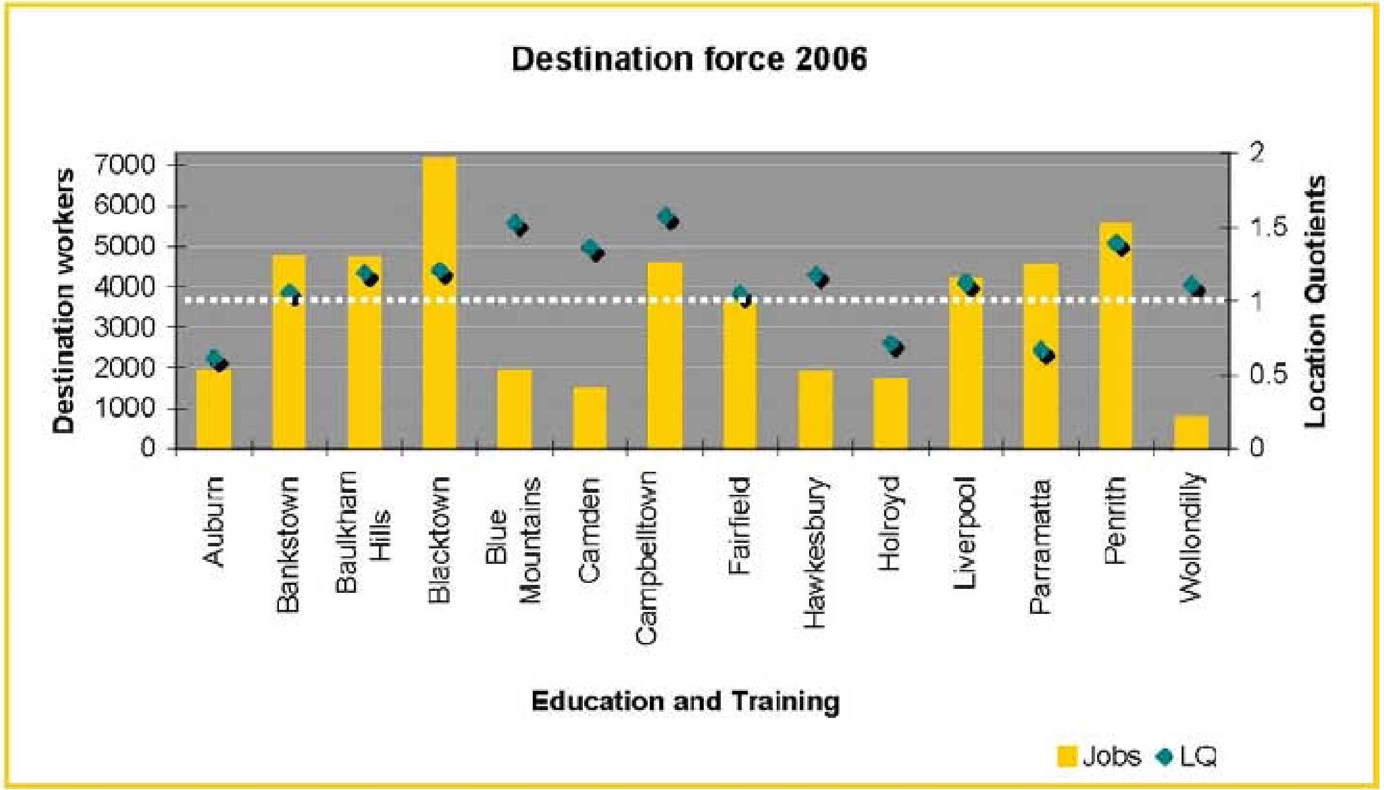
Household data (1996 - 2006)

	Education and training														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01		**1996**	**2001**	**2006**
Auburn	233	435	668	272	507	779	377	686	1063	395	284	59.13	36.46		0.58	0.60	0.64
Bankstown	1078	2364	3442	1055	2562	3617	1049	2807	3856	414	239	12.03	6.61		0.83	0.83	0.82
Baulkham Hills	1493	3693	5186	1704	4360	6064	1932	5285	7217	2031	1153	39.16	19.01		1.24	1.22	1.20
Blacktown	1380	2901	4281	1470	3578	5048	1785	4517	6302	2021	1254	47.21	24.84		0.67	0.69	0.74
Blue Mountains	1656	2634	4290	1673	2911	4584	1740	3165	4905	615	321	14.34	7.00		2.06	1.99	1.96
Camden	418	850	1268	493	1217	1710	551	1516	2067	799	357	63.01	20.88		1.25	1.18	1.17
Campbelltown	1209	2503	3712	1125	2647	3772	1183	2968	4151	439	379	11.83	10.05		0.95	0.91	0.92
Fairfield	681	1396	2077	687	1540	2227	719	1738	2457	380	230	18.30	10.33		0.49	0.51	0.52
Hawkesbury	694	1317	2011	654	1545	2199	647	1656	2303	292	104	14.52	4.73		1.11	1.12	1.08
Holroyd	600	1261	1861	579	1343	1922	619	1529	2148	287	226	15.42	11.76		0.80	0.77	0.78
Liverpool	707	1507	2214	818	2196	3014	868	2567	3435	1221	421	55.15	13.97		0.67	0.70	0.71
Parramatta	1277	2402	3679	1267	2522	3789	1344	2803	4147	468	358	12.72	9.45		0.94	0.92	0.89
Penrith	1301	2735	4036	1266	3139	4405	1360	3723	5083	1047	678	25.94	15.39		0.82	0.81	0.85
Wollondilly	382	802	1184	359	937	1296	413	1148	1561	377	265	31.84	20.45		1.22	1.13	1.13
WSROC	11100	22645	33745	11445	26203	37648	12440	30476	42916	9171	5268	27.18	13.99		0.88	0.88	0.89
WC	3869	7858	11727	3860	8474	12334	4108	9563	13671	1944	1337	16.58	10.84		0.74	0.74	0.74
NW	6524	13280	19804	6767	15533	22300	7464	18346	25810	6006	3510	30.33	15.74		1.02	1.01	1.03
SW	2716	5662	8378	2795	6997	9792	3015	8199	11214	2836	1422	33.85	14.52		0.91	0.89	0.89
GWS	13109	26800	39909	13422	31004	44426	14587	36108	50695	10786	6269	27.03	14.11		0.90	0.89	0.90
SSD	37926	73090	111016	38897	83125	122022	41568	94839	136407	25391	14385	22.87	11.79				
NSW	62339	116875	179214	63467	132954	196421	67074	152183	219257	40043	22836	22.34	11.63				
Australia	194989	364223	559212	203162	423804	626966	212812	484993	697805	138593	70839	24.78	11.30				


Location Quotient
2.20
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
1996
2001
2006
Education and training
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	1911	0.61
Bankstown	4727	1.06
Baulkham Hills	4705	1.19
Blacktown	7164	1.21
Blue Mountains	1892	1.53
Camden	1483	1.36
Campbelltown	4565	1.57
Fairfield	3687	1.05
Hawkesbury	1883	1.18
Holroyd	1706	0.72
Liverpool	4168	1.12
Parramatta	4521	0.67
Penrith	5550	1.39
Wollondilly	752	1.11
WSROC	41914	1.03
WC	16552	0.82
NW	21194	1.27
SW	10968	1.31
GWS	48714	1.07
SydneySD	131549	1.00

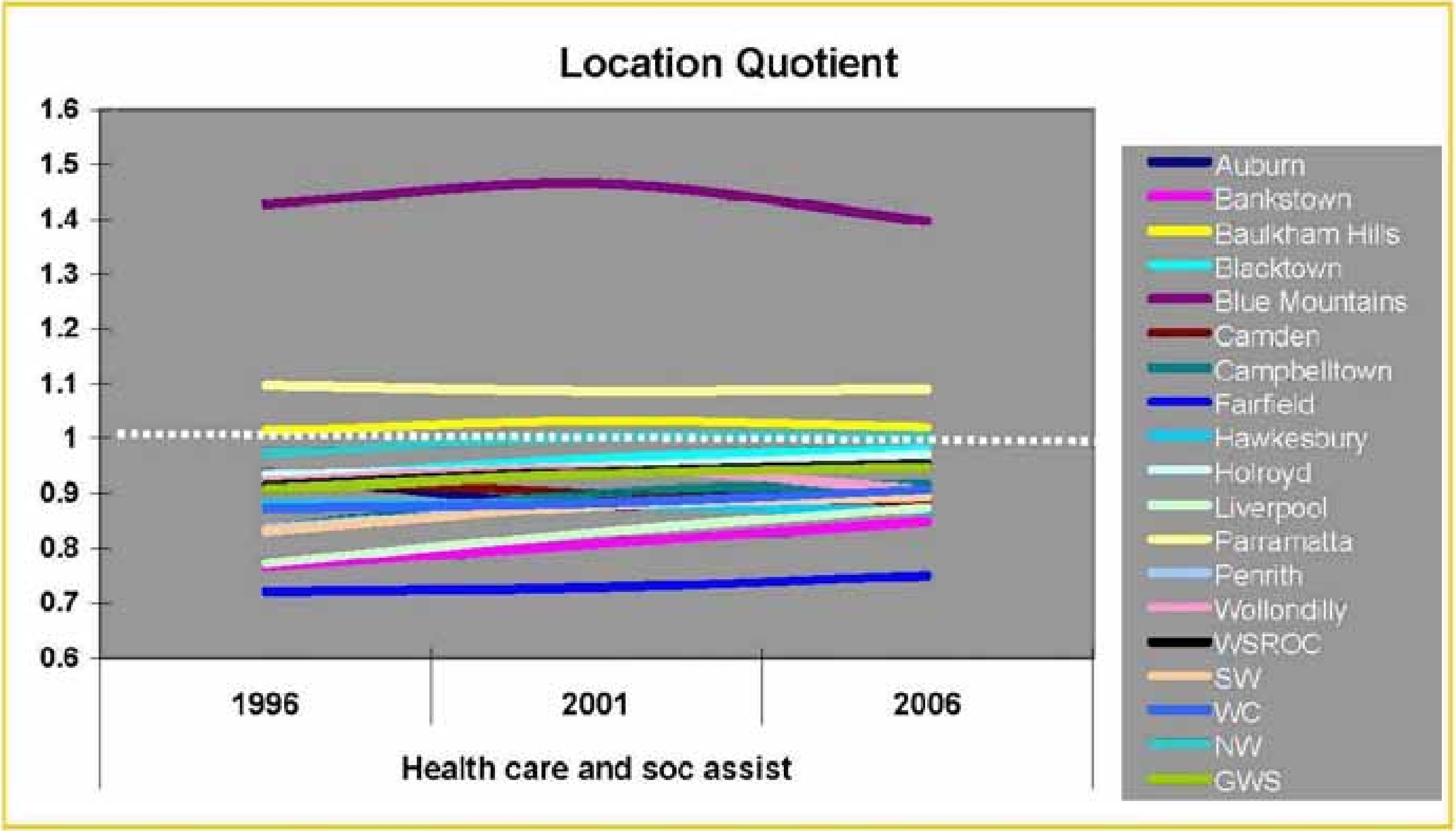


6.15.17 Health care and social assistance

Industry per LGA

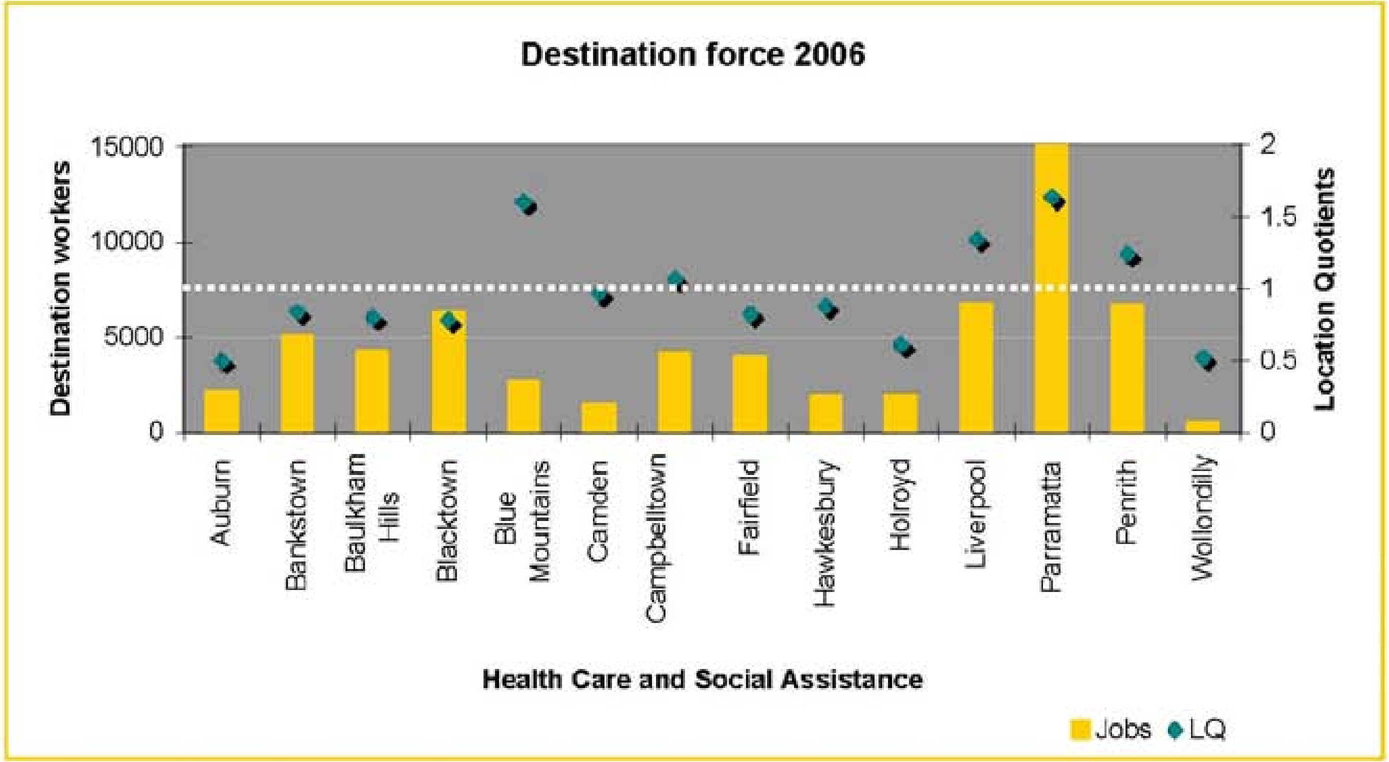
Household data (1996 - 2006)

	Health care and social assistance														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01		**1996**	**2001**	**2006**
Auburn	339	1120	1459	363	1119	1482	565	1514	2079	620	597	42.49	40.28		0.93	0.88	0.90
Bankstown	861	3423	4284	951	3634	4585	1220	4284	5504	1220	919	28.48	20.04		0.77	0.81	0.85
Baulkham Hills	1357	4380	5737	1521	5200	6721	1961	6477	8438	2701	1717	47.08	25.55		1.01	1.03	1.02
Blacktown	1617	6427	8044	1800	7405	9205	2331	9126	11457	3413	2252	42.43	24.46		0.93	0.96	0.98
Blue Mountains	970	3052	4022	1077	3328	4405	1151	3670	4821	799	416	19.87	9.44		1.43	1.46	1.40
Camden	246	1024	1270	291	1419	1710	381	1762	2143	873	433	68.74	25.32		0.93	0.90	0.88
Campbelltown	811	3616	4427	894	3996	4890	1060	4664	5724	1297	834	29.30	17.06		0.83	0.90	0.92
Fairfield	836	3278	4114	879	3265	4144	1061	3806	4867	753	723	18.30	17.45		0.72	0.73	0.75
Hawkesbury	365	1793	2158	385	1874	2259	391	2162	2553	395	294	18.30	13.01		0.88	0.88	0.87
Holroyd	639	2289	2928	691	2387	3078	827	2843	3670	742	592	25.34	19.23		0.93	0.95	0.97
Liverpool	614	2818	3432	869	3804	4673	1131	4738	5869	2437	1196	71.01	25.59		0.77	0.83	0.87
Parramatta	1368	4469	5837	1446	4425	5871	1833	5209	7042	1205	1171	20.64	19.95		1.10	1.09	1.09
Penrith	1092	4464	5556	1171	5103	6274	1396	6015	7411	1855	1137	33.39	18.12		0.84	0.88	0.90
Wollondilly	219	988	1207	217	1196	1413	268	1457	1725	518	312	42.92	22.08		0.92	0.94	0.91
WSROC	10058	37513	47571	11153	41544	52697	13867	49844	63711	16140	11014	33.93	20.90		0.91	0.94	0.95
WC	4043	14579	18622	4330	14830	19160	5506	17656	23162	4540	4002	24.38	20.89		0.87	0.88	0.91
NW	5401	20116	25517	5954	22910	28864	7230	27450	34680	9163	5816	35.91	20.15		0.97	1.00	1.00
SW	1890	8446	10336	2271	10415	12686	2840	12621	15461	5125	2775	49.58	21.87		0.83	0.88	0.89
GWS	11334	43141	54475	12555	48155	60710	15576	57727	73303	18828	12593	34.56	20.74		0.91	0.93	0.95
SSD	35102	115313	150415	37374	122278	159652	44562	143791	188353	37938	28701	25.22	17.98				
NSW	53191	182521	235712	56652	197729	254381	67737	235948	303685	67973	49304	28.84	19.38				
Australia	158753	557410	716163	169673	623718	793391	204496	751648	956144	239981	162753	33.51	20.51				


Location Quotient
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
1996
2001
2006
Health care and soc assist
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	2115	0.50
Bankstown	5077	0.84
Baulkham Hills	4307	0.80
Blacktown	6311	0.78
Blue Mountains	2694	1.60
Camden	1434	0.97
Campbelltown	4190	1.07
Fairfield	3930	0.82
Hawkesbury	1909	0.88
Holroyd	1980	0.61
Liverpool	6780	1.34
Parramatta	15044	1.64
Penrith	6736	1.24
Wollondilly	480	0.52
WSROC	56883	1.03
WC	28146	1.02
NW	21957	0.97
SW	12884	1.13
GWS	62987	1.02
SydneySD	178430	1.00

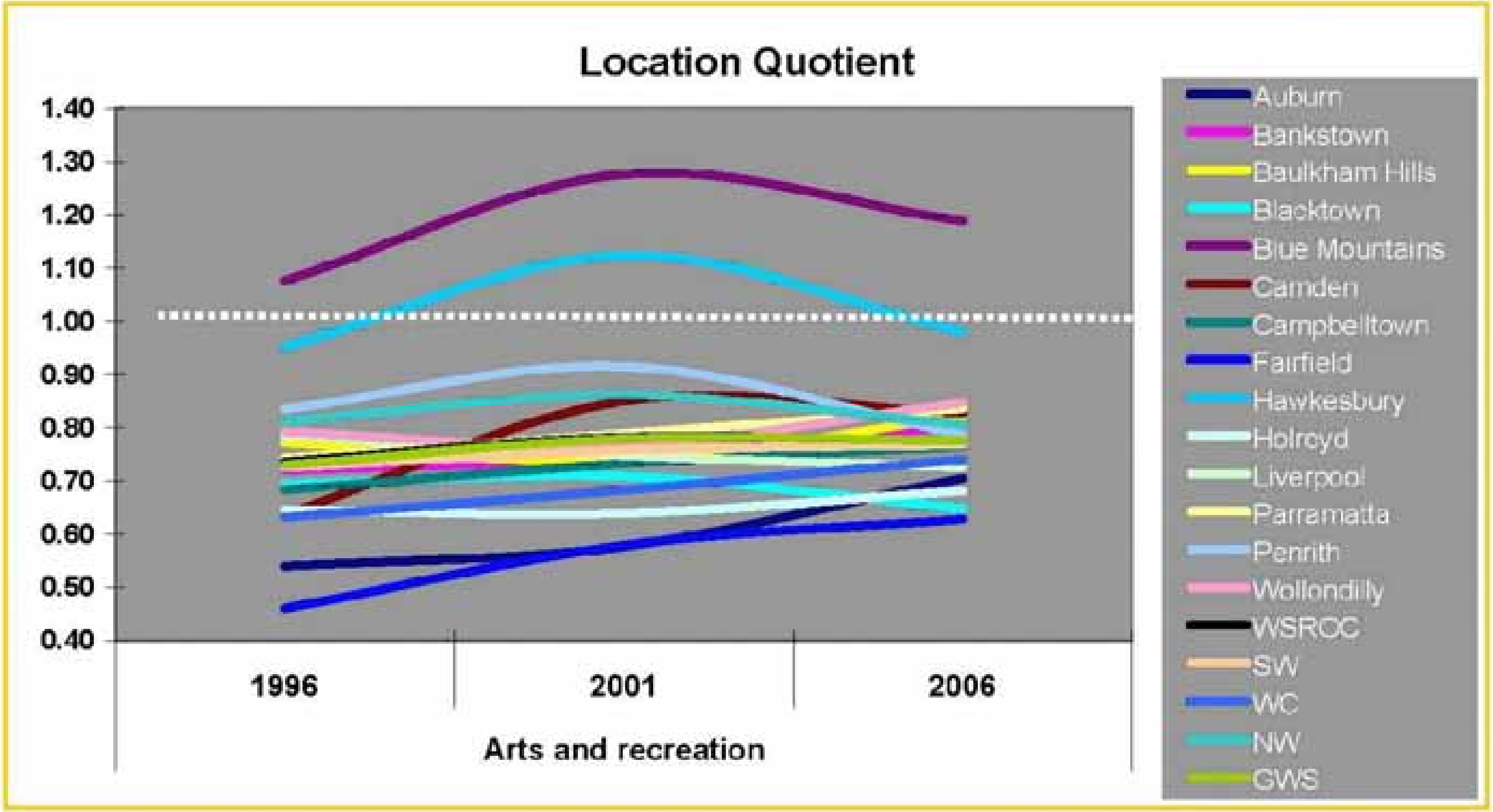


6.15.18 Arts and recreation services

industry per LGA

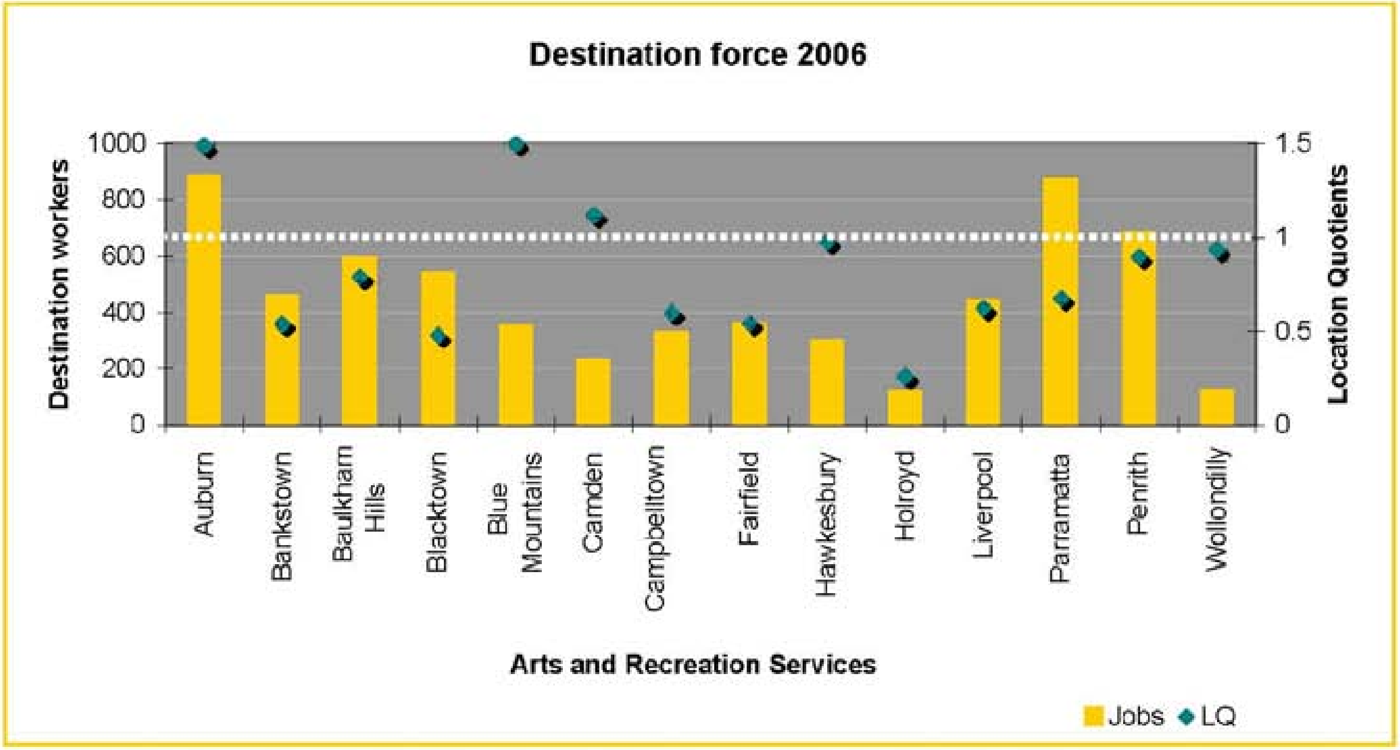
Household data (1996 - 2006)

	Arts and Recreation Services														Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	87	51	138	99	57	156	135	100	235	97	79	-70.29	50.64	0.54	0.58	0.70
Bankstown	348	312	660	395	282	677	414	343	757	97	80	-14.70	11.82	0.72	0.74	0.80
Baulkham Hills	363	353	716	429	341	770	493	493	986	270	216	-37.71	28.05	0.77	0.74	0.82
Blacktown	458	529	987	554	533	1087	595	503	1098	111	11	-11.25	1.01	0.69	0.71	0.65
Blue Mountains	274	223	497	347	269	616	325	270	595	98	-21	-19.72	-3.41	1.08	1.28	1.19
Camden	83	60	143	136	123	259	141	152	293	150	34	-104.90	13.13	0.64	0.85	0.83
Campbelltown	282	312	594	329	309	638	367	326	693	99	55	-16.67	8.62	0.68	0.73	0.76
Fairfield	240	191	431	310	219	529	345	247	592	161	63	-37.35	11.91	0.46	0.58	0.63
Hawkesbury	181	201	382	251	212	463	216	202	418	36	-45	-9.42	-9.72	0.95	1.12	0.98
Holroyd	177	155	332	194	139	333	213	161	374	42	41	-12.65	12.31	0.65	0.64	0.68
Liverpool	324	247	571	360	316	676	356	351	707	136	31	-23.82	4.59	0.78	0.75	0.73
Parramatta	383	264	647	374	309	683	442	341	783	136	100	-21.02	14.64	0.74	0.79	0.84
Penrith	419	491	910	470	577	1047	443	499	942	32	-105	-3.52	-10.03	0.84	0.92	0.79
Wollondilly	104	66	170	105	79	184	136	98	234	64	50	-37.65	27.17	0.79	0.77	0.85
WSROC	3254	3017	6271	3783	3254	7037	3977	3510	7487	1216	450	-19.39	6.39	0.74	0.78	0.77
WC	1235	973	2208	1372	1006	2378	1549	1192	2741	533	363	-24.14	15.26	0.63	0.68	0.74
NW	1695	1797	3492	2051	1932	3983	2072	1967	4039	547	56	-15.66	1.41	0.81	0.86	0.80
SW	793	685	1478	930	827	1757	1000	927	1927	449	170	-30.38	9.68	0.73	0.76	0.77
GWS	3723	3455	7178	4353	3765	8118	4621	4086	8707	1529	589	-21.30	7.26	0.73	0.78	0.78
SSD	12989	11643	24632	13820	11775	25595	14651	12667	27318	2686	1723	-10.90	6.73			
NSW	17611	15446	33057	19601	15874	35475	21264	18256	39520	6463	4045	-19.55	11.40			
Australia	55205	52486	107691	61568	53456	115024	66486	60910	127396	19705	12372	-18.30	10.76			


Location Quotient
1.40
1.30
1.20
1.10
1.00
0.90
0.80
0.70
0.60
0.50
0.40
1996
2001
2006
Arts and recreation
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	885	1.49
Bankstown	459	0.54
Baulkham Hills	596	0.79
Blacktown	540	0.48
Blue Mountains	354	1.50
Camden	232	1.12
Campbelltown	331	0.60
Fairfield	362	0.54
Hawkesbury	298	0.98
Holroyd	117	0.26
Liverpool	441	0.62
Parramatta	871	0.67
Penrith	681	0.90
Wollondilly	121	0.93
WSROC	5604	0.72
WC	2694	0.70
NW	2469	0.77
SW	1125	0.70
GWS	6288	0.73
SydneySD	25081	1.00

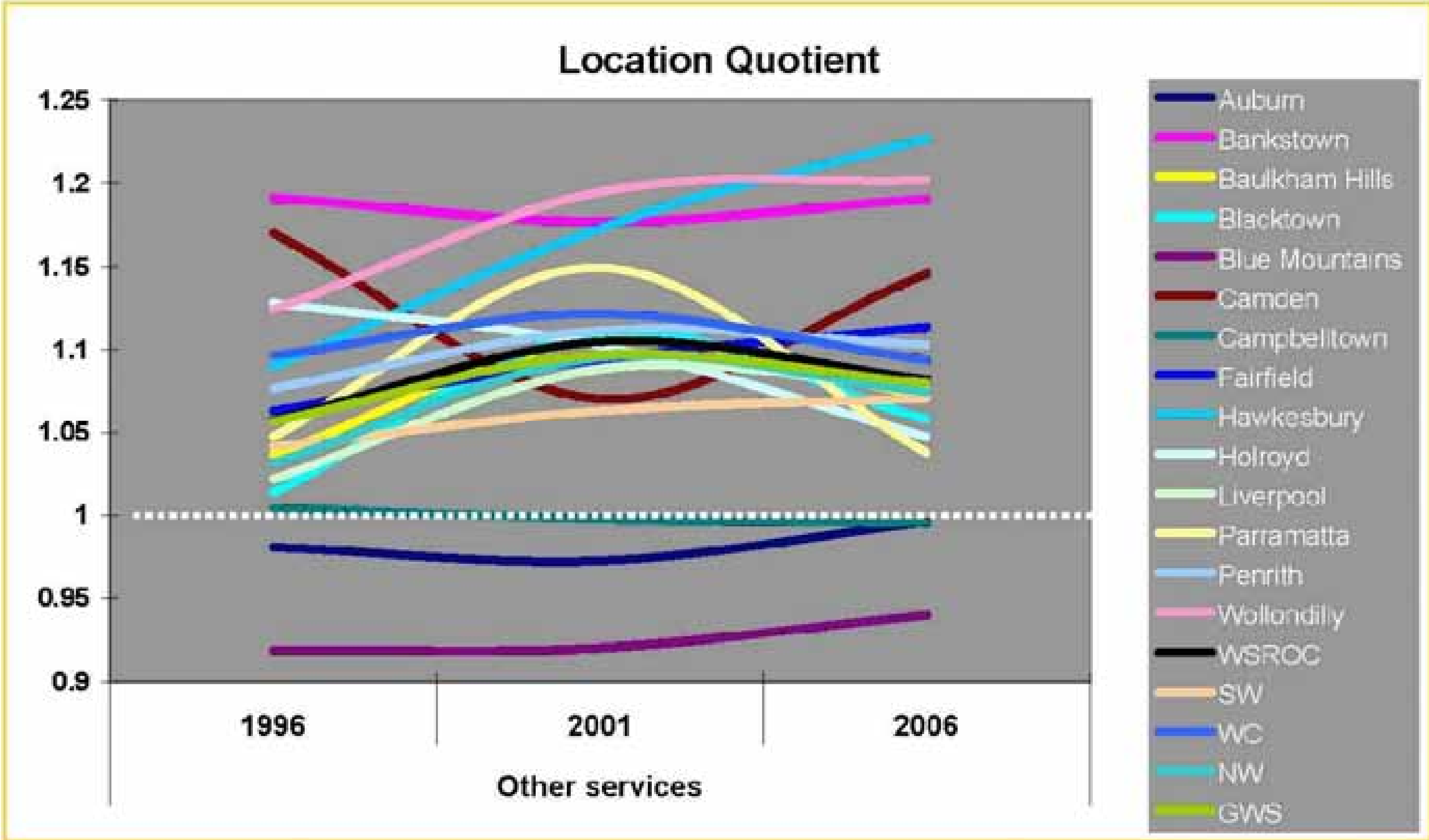


6.15.19 Other services

Industry per LGA

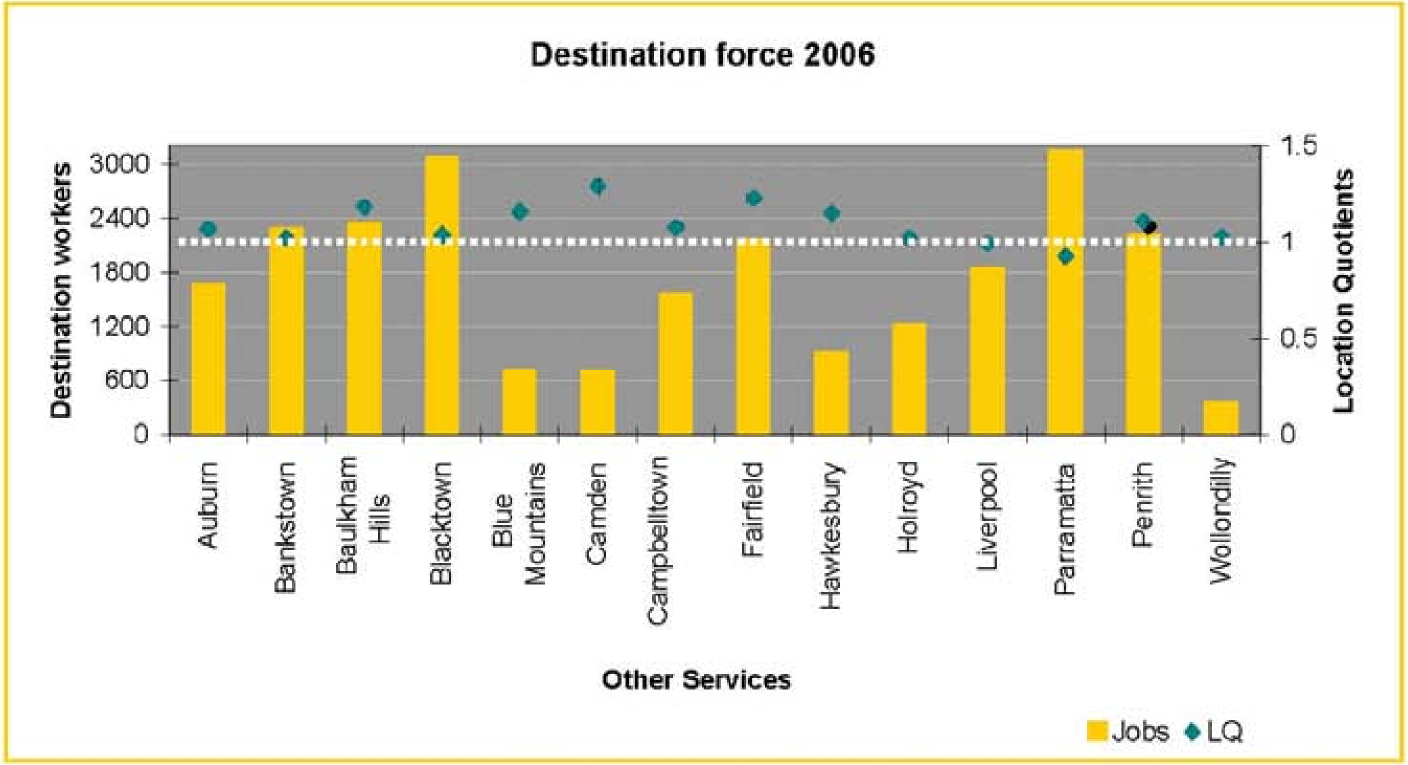
Household data (1996 - 2006)

	Other services														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01		**1996**	**2001**	**2006**
Auburn	539	217	756	517	249	766	546	318	864	108	98	14.29	12.79		0.98	0.97	1.00
Bankstown	2224	1067	3291	2069	1053	3122	1882	1033	2915	-376	-207	-11.43	-6.63		1.19	1.18	1.19
Baulkham Hills	1745	1155	2900	1965	1399	3364	1831	1516	3347	447	-17	15.41	-0.51		1.04	1.11	1.07
Blacktown	2917	1431	4348	3259	1702	4961	2991	1673	4664	316	-297	7.27	-5.99		1.01	1.11	1.06
Blue Mountains	773	506	1279	772	521	1293	707	517	1224	-55	-69	-4.30	-5.34		0.92	0.92	0.94
Camden	498	295	793	630	319	949	635	420	1055	262	106	33.04	11.17		1.17	1.07	1.15
Campbelltown	1687	945	2632	1653	879	2532	1467	879	2346	-286	-186	-10.87	-7.35		1.00	1.00	0.99
Fairfield	2033	969	3002	2002	909	2911	1687	1046	2733	-269	-178	-8.96	-6.11		1.06	1.09	1.11
Hawkesbury	814	504	1318	861	547	1408	784	577	1361	43	-47	3.26	-3.34		1.09	1.17	1.23
Holroyd	1147	602	1749	1079	593	1672	946	550	1496	-253	-176	-14.47	-10.53		1.13	1.10	1.05
Liverpool	1520	724	2244	1940	925	2865	1734	994	2728	484	-137	21.57	-4.78		1.02	1.09	1.08
Parramatta	1738	1015	2753	1836	1064	2900	1552	978	2530	-223	-370	-8.10	-12.76		1.05	1.15	1.04
Penrith	2293	1245	3538	2373	1326	3699	2094	1342	3436	-102	-263	-2.88	-7.11		1.08	1.11	1.10
Wollondilly	454	274	728	548	287	835	514	350	864	136	29	18.68	3.47		1.12	1.19	1.20
WSROC	17743	9435	27178	18673	10288	28961	16754	10544	27298	120	-1663	0.44	-5.74		1.0573	1.105	1.082
WC	7681	3870	11551	7503	3868	11371	6613	3925	10538	-1013	-833	-8.77	-7.33		1.0964	1.122	1.094
NW	8542	4841	13383	9230	5495	14725	8407	5625	14032	649	-693	4.85	-4.71		1.0316	1.095	1.075
SW	4159	2238	6397	4771	2410	7181	4350	2643	6993	596	-188	9.32	-2.62		1.0417	1.063	1.071
GWS	20382	10949	31331	21504	11773	33277	19370	12193	31563	232	-1714	0.74	-5.15		1.06	1.10	1.08
SSD	45612	28678	74290	45504	29033	74537	40724	30370	71094	-3196	-3443	-4.30	-4.62				
NSW	67663	43802	111465	67976	43955	111931	63069	46820	109889	-1576	-2042	-1.41	-1.82				
Australia	201035	133397	334432	198661	131974	330635	191117	147095	338212	3780	7577	1.13	2.29				


Location Quotient
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
1996
2001
2006
Other services
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
SW
WC
NW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	1665	1.07
Bankstown	2278	1.02
Baulkham Hills	2341	1.18
Blacktown	3076	1.04
Blue Mountains	717	1.16
Camden	703	1.29
Campbelltown	1561	1.08
Fairfield	2158	1.23
Hawkesbury	920	1.15
Holroyd	1218	1.02
Liverpool	1849	0.99
Parramatta	3145	0.93
Penrith	2213	1.11
Wollondilly	349	1.03
WSROC	21580	1.06
WC	10464	1.03
NW	9267	1.11
SW	4462	1.06
GWS	24193	1.07
SydneySD	65708	1.00



6.15.20 Inadequately described

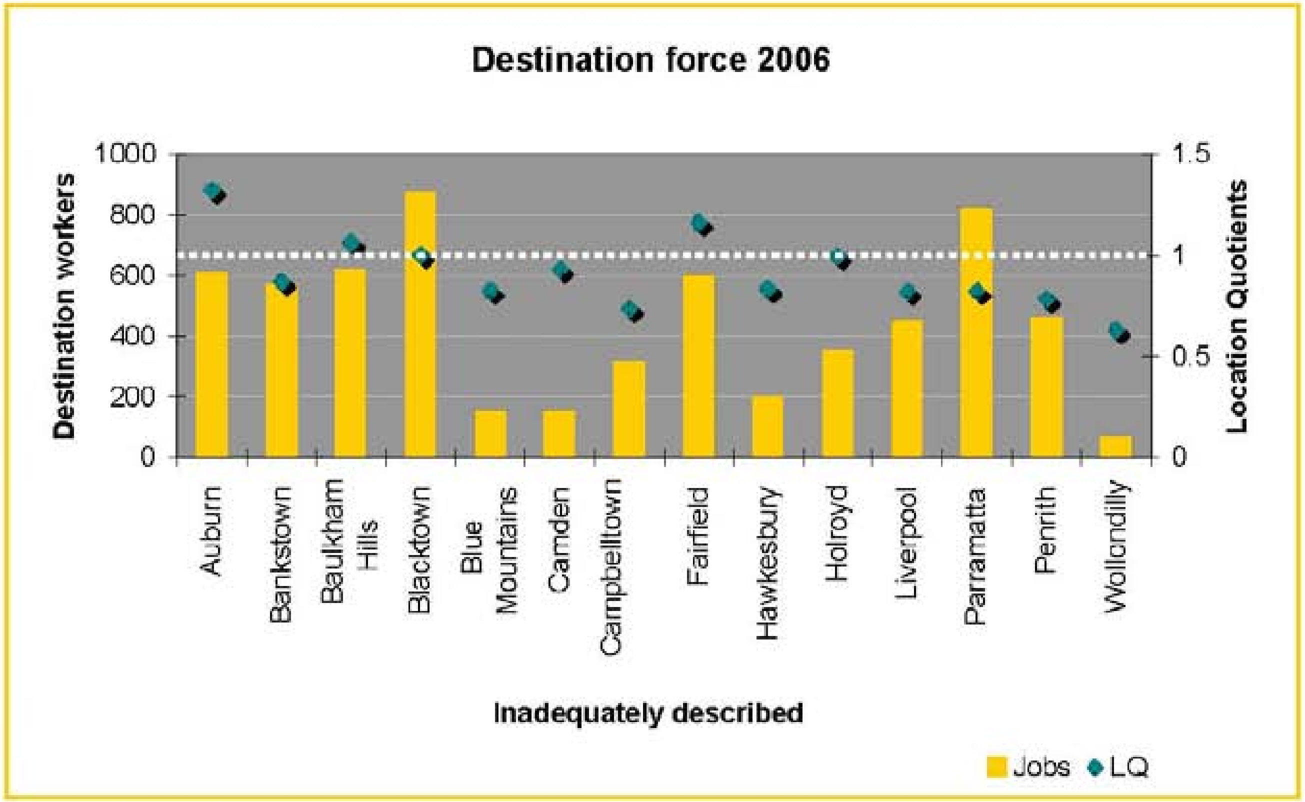
Industry per LGA

Household data (1996 - 2006)

	Inadequately described												
	1996			2001			2006			Abs. change		% change	
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01
Auburn	540	347	887	538	343	881	663	343	1006	119	125	13.42	14.19
Bankstown	1352	955	2307	1197	884	2081	1544	890	2434	127	353	5.50	16.96
Baulkham Hills	928	892	1820	675	677	1352	1164	809	1973	153	621	8.41	45.93
Blacktown	2015	1385	3400	1631	1255	2886	2438	1475	3913	513	1027	15.09	35.59
Blue Mountains	381	343	724	250	237	487	380	276	656	-68	169	-9.39	34.70
Camden	246	193	439	237	208	445	316	244	560	121	115	27.56	25.84
Campbelltown	1020	803	1823	941	719	1660	1130	676	1806	-17	146	-0.93	8.80
Fairfield	1781	1169	2950	1761	1173	2934	1924	1113	3037	87	103	2.95	3.51
Hawkesbury	463	378	841	306	300	606	468	337	805	-36	199	-4.28	32.84
Holroyd	725	497	1222	577	459	1036	743	464	1207	-15	171	-1.23	16.51
Liverpool	1022	759	1781	1162	878	2040	1479	883	2362	581	322	32.62	15.78
Parramatta	1147	845	1992	852	687	1539	1285	754	2039	47	500	2.36	32.49
Penrith	1349	1011	2360	1029	812	1841	1327	872	2199	-161	358	-6.82	19.45
Wollondilly	237	211	448	270	201	471	272	157	429	-19	-42	-4.24	-8.92
WSROC	11703	8581	20284	9978	7705	17683	13415	8216	21631	1347	3948	6.64	22.33
WC	5545	3813	9358	4925	3546	8471	6159	3564	9723	365	1252	3.90	14.78
NW	5136	4009	9145	3891	3281	7172	5777	3769	9546	401	2374	4.38	33.10
SW	2525	1966	4491	2610	2006	4616	3197	1960	5157	666	541	14.83	11.72
GWS	13206	9788	22994	11426	8833	20259	15133	9293	24426	1432	4167	6.23	20.57
SSD	29204	23100	52304	23771	20081	43852	31716	21635	53351	1047	9499	2.00	21.66
NSW	44196	34136	78332	35349	30043	65392	45727	31147	76874	-1458	11482	-1.86	17.56
Australia	144688	110193	254881	103199	89320	192519	140603	95884	236487	-18394	43968	-7.22	22.84

2006 Destination data

LGA	Jobs	LQ
Auburn	606	1.32
Bankstown	569	0.87
Baulkham Hills	619	1.07
Blacktown	873	1.00
Blue Mountains	150	0.83
Camden	149	0.93
Campbelltown	314	0.74
Fairfield	599	1.16
Hawkesbury	196	0.84
Holroyd	349	1.00
Liverpool	448	0.82
Parramatta	819	0.82
Penrith	459	0.78
Wollondilly	63	0.63
Grand Total	6213	0.93
WSROC	5687	0.95
WC	2942	0.99
NW	2297	0.94
SW	974	0.79
GWS	6213	0.93
SydneySD	19294	1.00



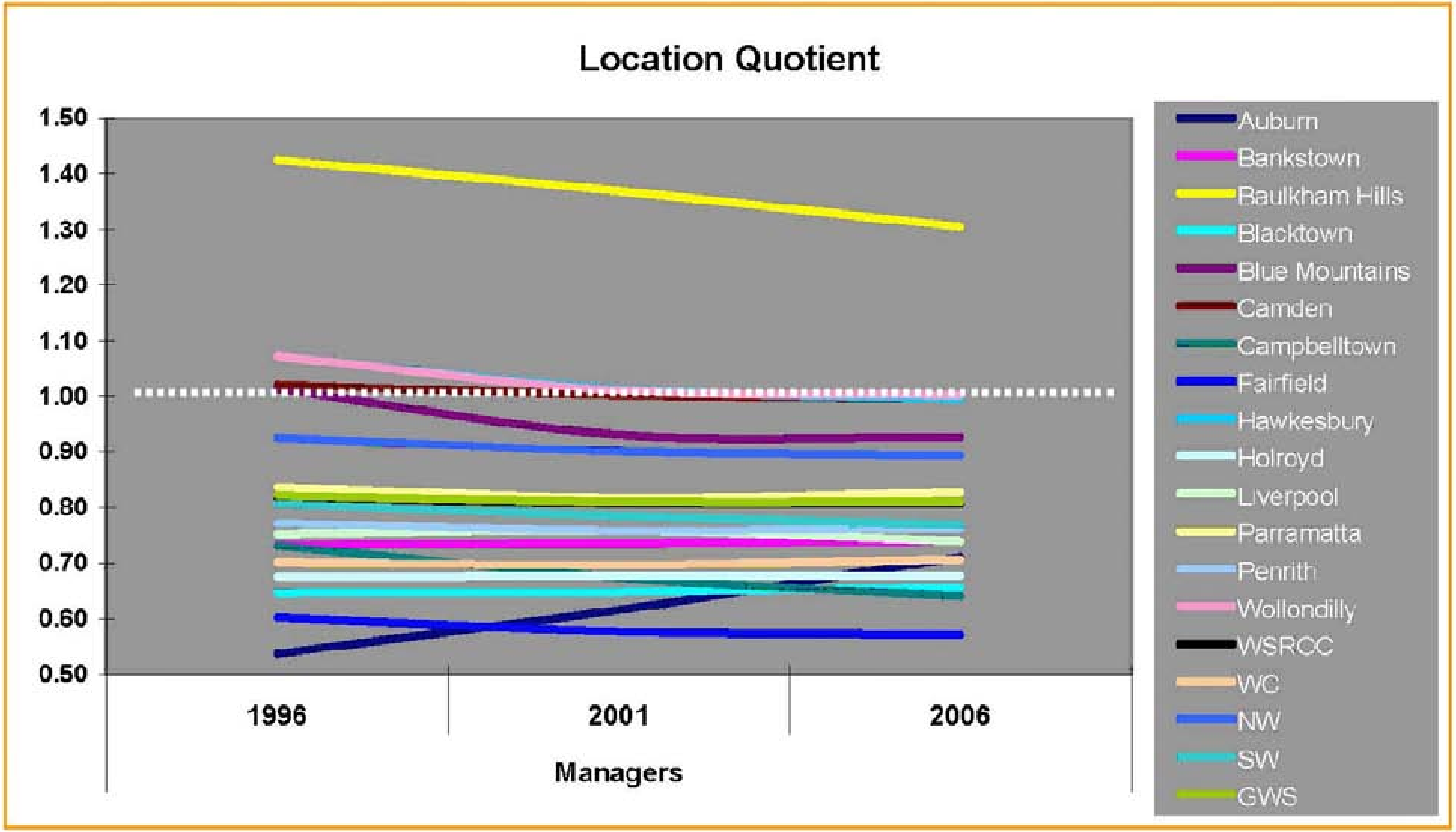
6.16 Occupation

6.16.1 Manager

Occupation per LGA

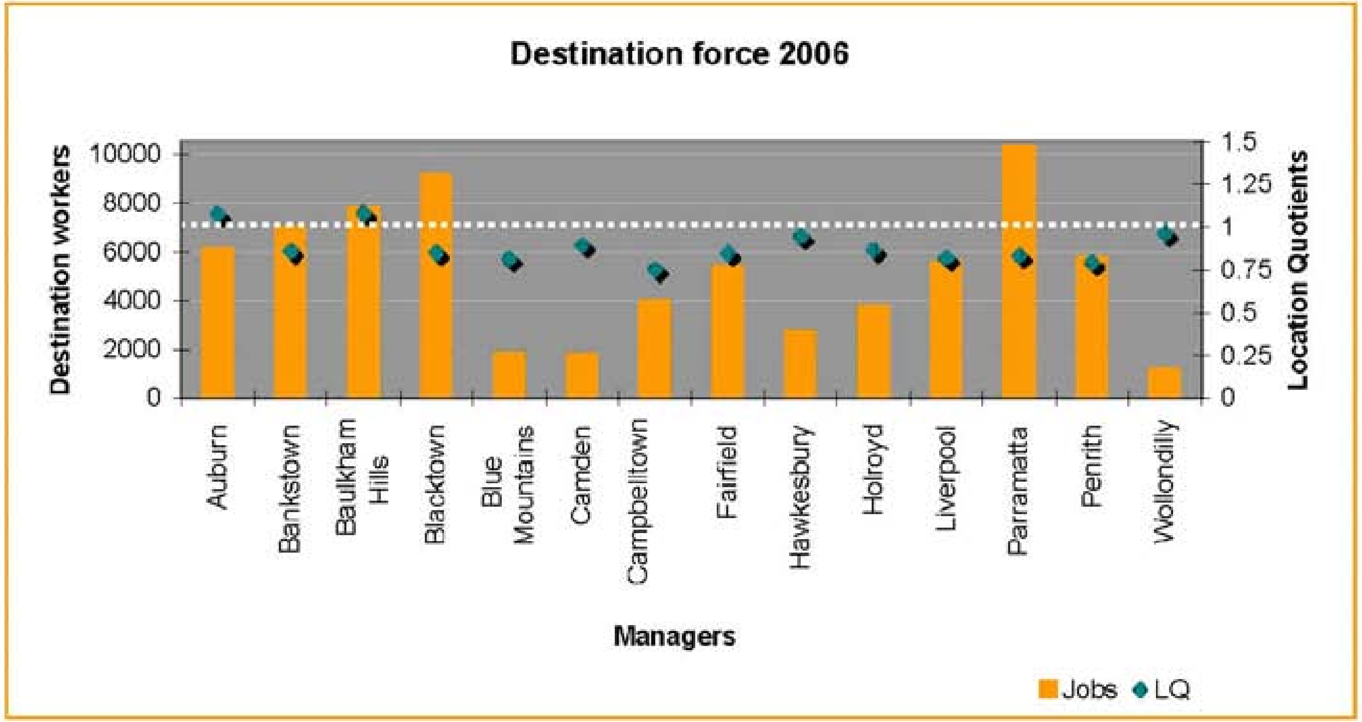
Household data (1996 - 2006)

	Managers														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01		**1996**	**2001**	**2006**
Auburn	791	364	1155	1036	465	1501	1461	705	2166	1011	665	87.53	44.30		0.54	0.62	0.71
Bankstown	4010	1634	5644	4160	1880	6040	4302	2064	6366	722	326	12.79	5.40		0.73	0.74	0.74
Baulkham Hills	8427	2679	11106	9573	3323	12896	10134	4183	14317	3211	1421	28.91	11.02		1.42	1.37	1.31
Blacktown	5475	2259	7734	6181	2787	8968	6724	3448	10172	2438	1204	31.52	13.43		0.65	0.65	0.66
Blue Mountains	2730	1204	3934	2788	1258	4046	2825	1412	4237	303	191	7.70	4.72		1.01	0.93	0.93
Camden	1385	544	1929	1968	784	2752	2189	1035	3224	1295	472	67.13	17.15		1.02	1.00	1.00
Campbelltown	3764	1574	5338	3637	1654	5291	3514	1792	5306	-32	15	-0.60	0.28		0.73	0.67	0.64
Fairfield	3234	1507	4741	3229	1523	4752	3230	1693	4923	182	171	3.84	3.60		0.60	0.58	0.57
Hawkesbury	2527	1087	3614	2610	1155	3765	2613	1266	3879	265	114	7.33	3.03		1.07	1.01	1.00
Holroyd	2082	836	2918	2212	964	3176	2276	1123	3399	481	223	16.48	7.02		0.68	0.68	0.68
Liverpool	3239	1366	4605	4276	1904	6180	4416	2169	6585	1980	405	43.00	6.55		0.75	0.76	0.74
Parramatta	4362	1768	6130	4411	1971	6382	4718	2362	7080	950	698	15.50	10.94		0.84	0.82	0.83
Penrith	5016	2050	7066	5464	2350	7814	5478	2865	8343	1277	529	18.07	6.77		0.77	0.76	0.76
Wollondilly	1348	587	1935	1527	660	2187	1702	830	2532	597	345	30.85	15.78		1.07	1.01	1.00
WSROC	41893	16754	58647	45940	19580	65520	48177	23290	71467	-12820	-5947	21.86	9.08		0.82	0.81	0.81
WC	14479	6109	20588	15048	6803	21851	15987	7947	23934	-3346	-2083	16.25	9.53		0.70	0.70	0.71
NW	24175	9279	33454	26616	10873	37489	27774	13174	40948	-7494	-3459	22.40	9.23		0.93	0.90	0.89
SW	9736	4071	13807	11408	5002	16410	11821	5826	17647	-3840	-1237	27.81	7.54		0.81	0.78	0.77
GWS	48390	19459	67849	53072	22678	75750	55582	26947	82529	-14680	-6779	21.64	8.95		0.82	0.81	0.81
SSD	142519	64566	207085	155675	75020	230695	162533	87168	249701	-42616	-19006	20.58	8.24				
NSW	237731	108358	346089	250627	120315	370942	258144	136517	394661	48572	23719	14.03	6.39				
Australia	711356	329353	1040709	744982	360098	1105080	788630	413636	1202266	161557	97186	15.52	8.79				


Location Quotient
1.50
1.40
1.30
1.20
1.10
1.00
0.90
0.80
0.70
0.60
0.50
1996
2001
2006
Managers
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSRCC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	6130	1.08
Bankstown	7003	0.86
Baulkham Hills	7829	1.09
Blacktown	9200	0.85
Blue Mountains	1839	0.82
Camden	1779	0.90
Campbelltown	3985	0.75
Fairfield	5433	0.85
Hawkesbury	2765	0.95
Holroyd	3769	0.87
Liverpool	5578	0.82
Parramatta	10300	0.83
Penrith	5766	0.79
Wollondilly	1195	0.96
WSROC	61843	0.89
WC	28866	0.89
NW	27399	0.90
SW	12537	0.82
GWS	68802	0.88
SydneySD	239661	1.00

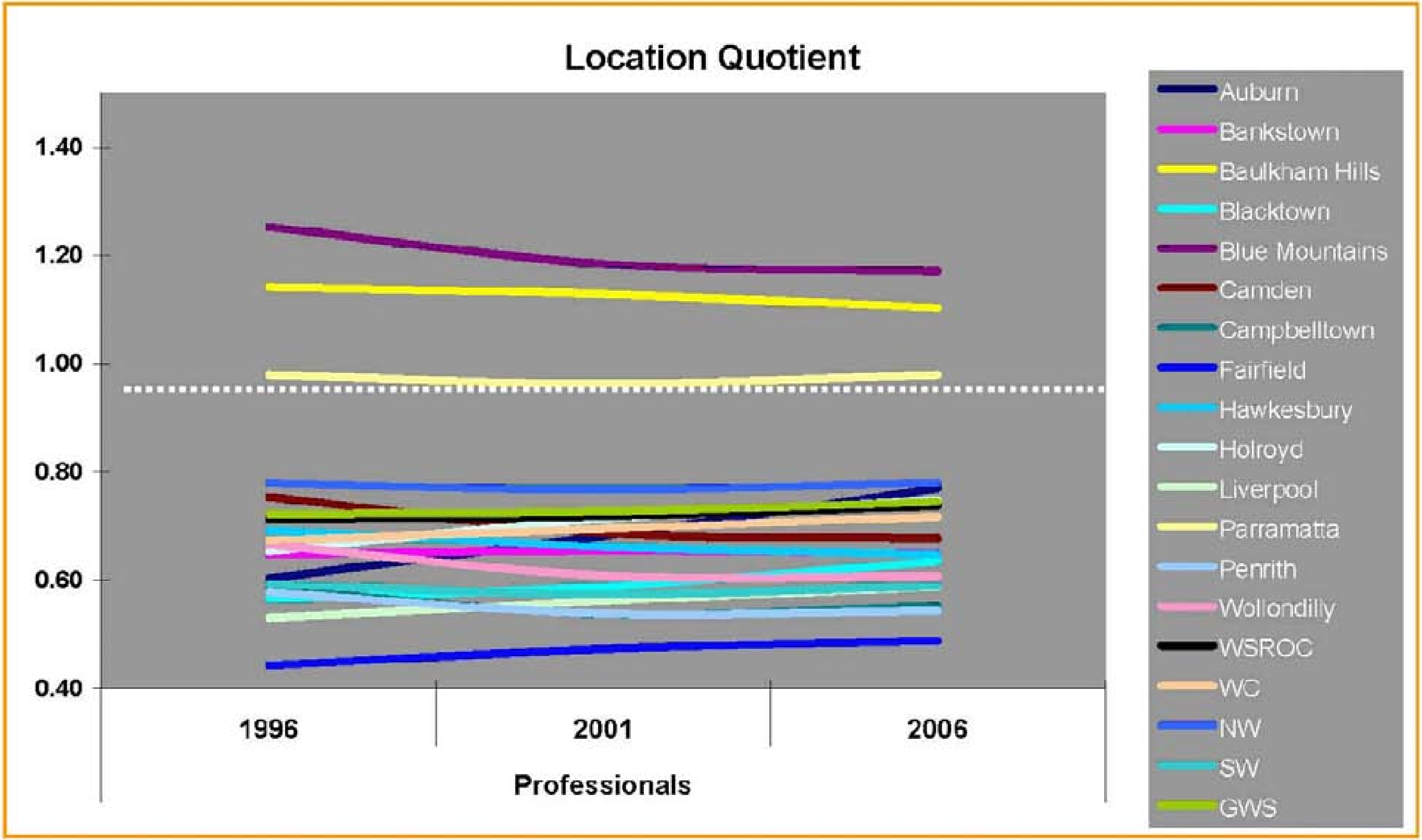


6.16.2 Professionals

Occupation per LGA

Household data (1996 - 2006)

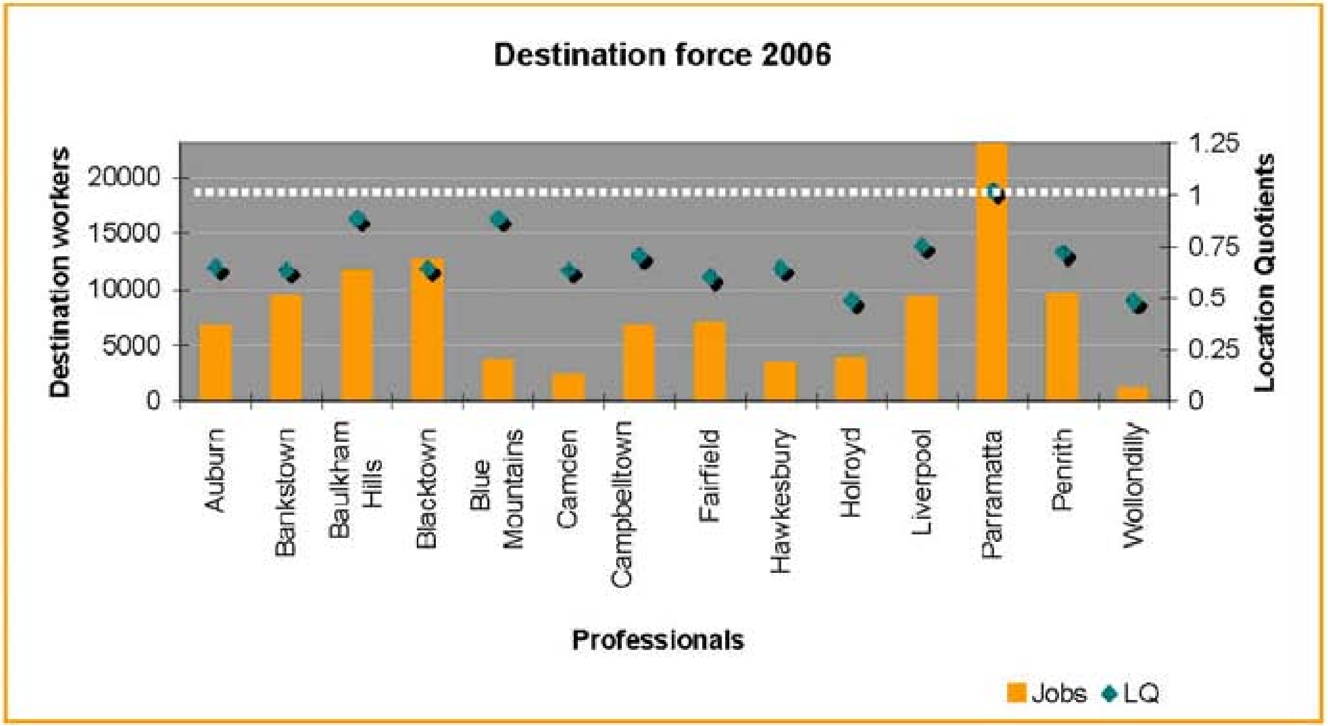
	Professionals														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01		**1996**	**2001**	**2006**
Auburn	1078	1034	2112	1513	1375	2888	2212	2003	4215	2103	1327	99.57	45.95		0.60	0.68	0.77
Bankstown	4049	4074	8123	4606	4728	9334	4752	5281	10033	1910	699	23.51	7.49		0.65	0.65	0.65
Baulkham Hills	7542	6981	14523	9480	9005	18485	10791	10974	21765	7242	3280	49.87	17.74		1.14	1.13	1.10
Blacktown	5470	5571	11041	6803	7324	14127	8275	9394	17669	6628	3542	60.03	25.07		0.57	0.59	0.63
Blue Mountains	3689	4239	7928	4162	4797	8959	4328	5307	9635	1707	676	21.53	7.55		1.25	1.18	1.17
Camden	1092	1229	2321	1399	1878	3277	1624	2313	3937	1616	660	69.63	20.14		0.75	0.69	0.68
Campbelltown	3441	3517	6958	3424	3920	7344	3660	4545	8205	1247	861	17.92	11.72		0.58	0.54	0.55
Fairfield	2832	2849	5681	3294	3475	6769	3582	3982	7564	1883	795	33.15	11.74		0.44	0.47	0.49
Hawkesbury	1777	2022	3799	1835	2440	4275	1847	2687	4534	735	259	19.35	6.06		0.69	0.66	0.65
Holroyd	2256	2344	4600	2850	2969	5819	3299	3451	6750	2150	931	46.74	16.00		0.65	0.71	0.75
Liverpool	2566	2730	5296	3761	4189	7950	4261	5146	9407	4111	1457	77.62	18.33		0.53	0.56	0.59
Parramatta	6018	5680	11698	6687	6394	13081	7606	7478	15084	3386	2003	28.95	15.31		0.98	0.96	0.98
Penrith	4146	4470	8616	4420	5224	9644	4620	6062	10682	2066	1038	23.98	10.76		0.58	0.54	0.54
Wollondilly	857	1101	1958	931	1356	2287	1073	1684	2757	799	470	40.81	20.55		0.67	0.61	0.61
WSROC	41423	41994	83417	49411	51920	101331	55573	61765	117338	-25699	-13093	40.66	15.80		0.71	0.72	0.74
WC	16233	15981	32214	18950	18941	37891	21451	22195	43646	-11432	-5755	35.49	15.19		0.67	0.69	0.72
NW	22624	23283	45907	26700	28790	55490	29861	34424	64285	-18378	-8795	40.03	15.85		0.78	0.77	0.78
SW	7956	8577	16533	9515	11343	20858	10618	13688	24306	-7773	-3448	47.02	16.53		0.59	0.57	0.59
GWS	46813	47841	94654	55165	59074	114239	61930	70307	132237	-37583	-17998	39.71	15.75		0.72	0.73	0.74
SSD	172905	164871	337776	203178	198100	401278	220573	228512	449085	-111309	-47807	32.95	11.91				
NSW	233013	232284	465297	267541	275625	543166	291520	322584	614104	148807	70938	31.98	13.06				
Australia	664276	663380	1327656	757582	795470	1553052	850152	955861	1806013	478357	252961	36.03	16.29				


Location Quotient
1.40
1.20
1.00
0.80
0.60
0.40
1996
2001
2006
Professionals
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	6694	0.65
Bankstown	9352	0.64
Baulkham Hills	11562	0.89
Blacktown	12591	0.64
Blue Mountains	3615	0.89
Camden	2282	0.64
Campbelltown	6733	0.71
Fairfield	6971	0.60
Hawkesbury	3397	0.65
Holroyd	3840	0.49
Liverpool	9247	0.75
Parramatta	22816	1.02
Penrith	9504	0.72
Wollondilly	1093	0.49

WSROC	95749	0.76
WC	45833	0.78
NW	40669	0.74
SW	19355	0.70
GWS	105857	0.75
SydneySD	432938	1.00

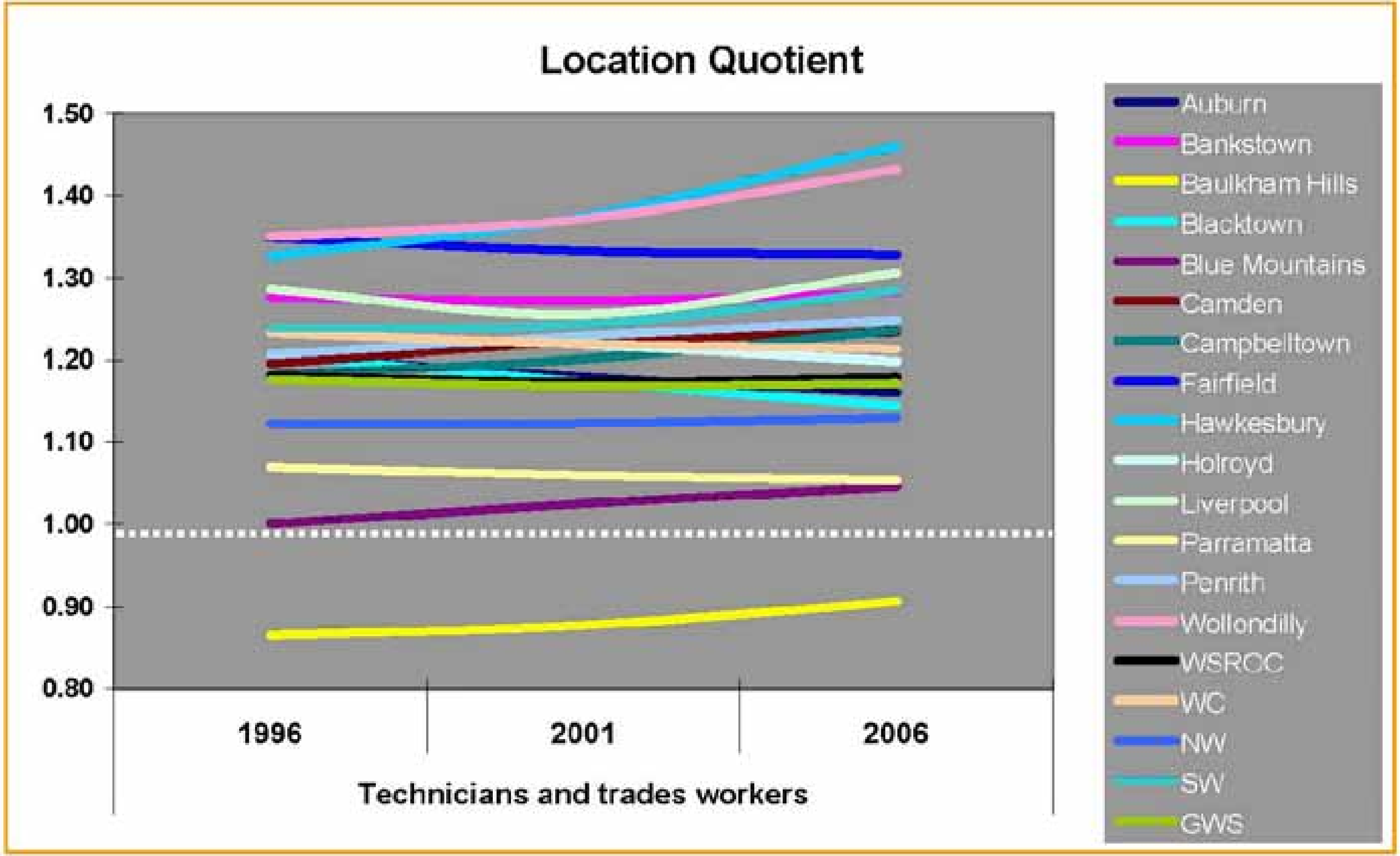


6.16.3 Technicians and trades workers

Occupation per LGA

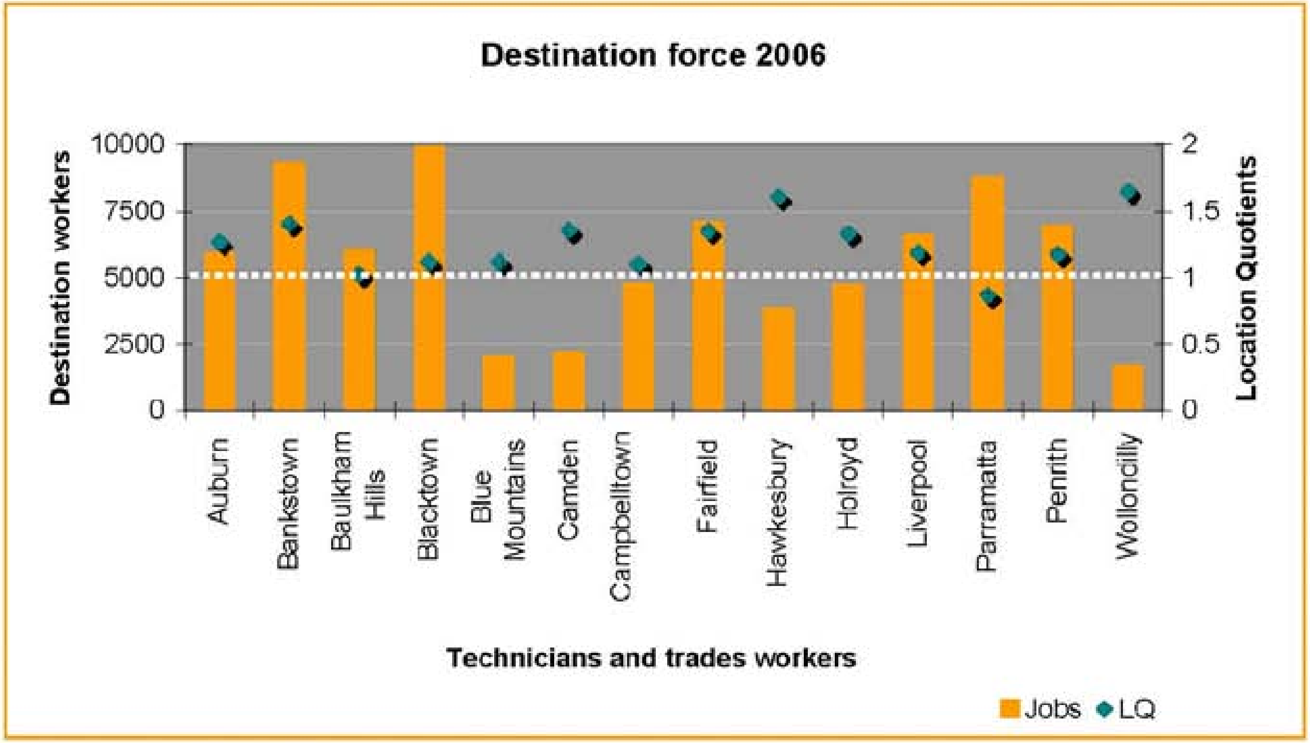
Household data (1996 - 2006)

	Technicians and trades workers													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01	1996	2001	2006
Auburn	2672	348	3020	2683	367	3050	2947	461	3408	388	358	12.85	11.74	1.21	1.18	1.16
Bankstown	10180	1278	11458	9861	1210	11071	9350	1282	10632	-826	-439	-7.21	-3.97	1.28	1.27	1.28
Baulkham Hills	6822	1042	7864	7526	1239	8765	8110	1471	9581	1717	816	21.83	9.31	0.87	0.88	0.91
Blacktown	15031	1779	16810	15227	1993	17220	14896	2192	17088	278	-132	1.65	-0.77	1.21	1.17	1.14
Blue Mountains	3923	601	4524	4036	693	4729	3935	679	4614	90	-115	1.99	-2.43	1.00	1.03	1.05
Camden	2349	284	2633	3179	379	3558	3374	472	3846	1213	288	46.07	8.09	1.20	1.22	1.23
Campbelltown	9068	998	10066	8952	1054	10006	8712	1155	9867	-199	-139	-1.98	-1.39	1.18	1.20	1.24
Fairfield	10974	1403	12377	10264	1375	11639	9660	1379	11039	-1338	-600	-10.81	-5.16	1.35	1.33	1.33
Hawkesbury	4534	679	5213	4744	671	5415	4715	769	5484	271	69	5.20	1.27	1.33	1.37	1.46
Holroyd	5530	679	6209	5349	717	6066	5108	689	5797	-412	-269	-6.64	-4.43	1.23	1.22	1.20
Liverpool	8256	916	9172	9695	1158	10853	9858	1346	11204	2032	351	22.15	3.23	1.29	1.26	1.31
Parramatta	7940	1184	9124	7632	1134	8766	7490	1204	8694	-430	-72	-4.71	-0.82	1.07	1.06	1.05
Penrith	11558	1319	12877	12011	1413	13424	11568	1598	13166	289	-258	2.24	-1.92	1.21	1.23	1.25
Wollondilly	2515	326	2841	2759	389	3148	3027	458	3485	644	337	22.67	10.71	1.35	1.37	1.43
WSROC	87420	11228	98648	89028	11970	100998	87637	13070	100707	2005	993	2.09	-0.29	1.18	1.17	1.18
WC	37296	4892	42188	35789	4803	40592	34555	5015	39570	2618	1022	-6.21	-2.52	1.23	1.22	1.21
NW	41868	5420	47288	43544	6009	49553	43224	6709	49933	-2645	-380	5.59	0.77	1.12	1.12	1.13
SW	22188	2524	24712	24585	2980	27565	24971	3431	28402	-3690	-837	14.93	3.04	1.24	1.24	1.28
GWS	101352	12836	114188	103918	13792	117710	102750	15155	117905	-3717	-195	3.26	0.17	1.18	1.17	1.17
SSD	209667	31678	241345	211426	33290	244716	205257	35428	240685	660	4031	-0.27	-1.65			
NSW	331973	50185	382158	334118	53284	387402	337426	58159	395585	13427	8183	3.51	2.11			
Australia	1005645	156700	1162345	1027480	168248	1195728	1116292	192966	1309258	146913	113530	12.64	9.49			


Location Quotient
1.50
1.40
1.30
1.20
1.10
1.00
0.90
0.80
1996
2001
2006
Technicians and trades workers
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	5881	1.27
Bankstown	9321	1.41
Baulkham Hills	6051	1.03
Blacktown	9879	1.12
Blue Mountains	2059	1.12
Camden	2199	1.36
Campbelltown	4765	1.11
Fairfield	7066	1.35
Hawkesbury	3821	1.61
Holroyd	4723	1.33
Liverpool	6592	1.19
Parramatta	8769	0.87
Penrith	6971	1.18
Wollondilly	1666	1.65
WSROC	66410	1.17
WC	31037	1.17
NW	28781	1.16
SW	15222	1.22
GWS	75040	1.17
SydneySD	195541	1.00

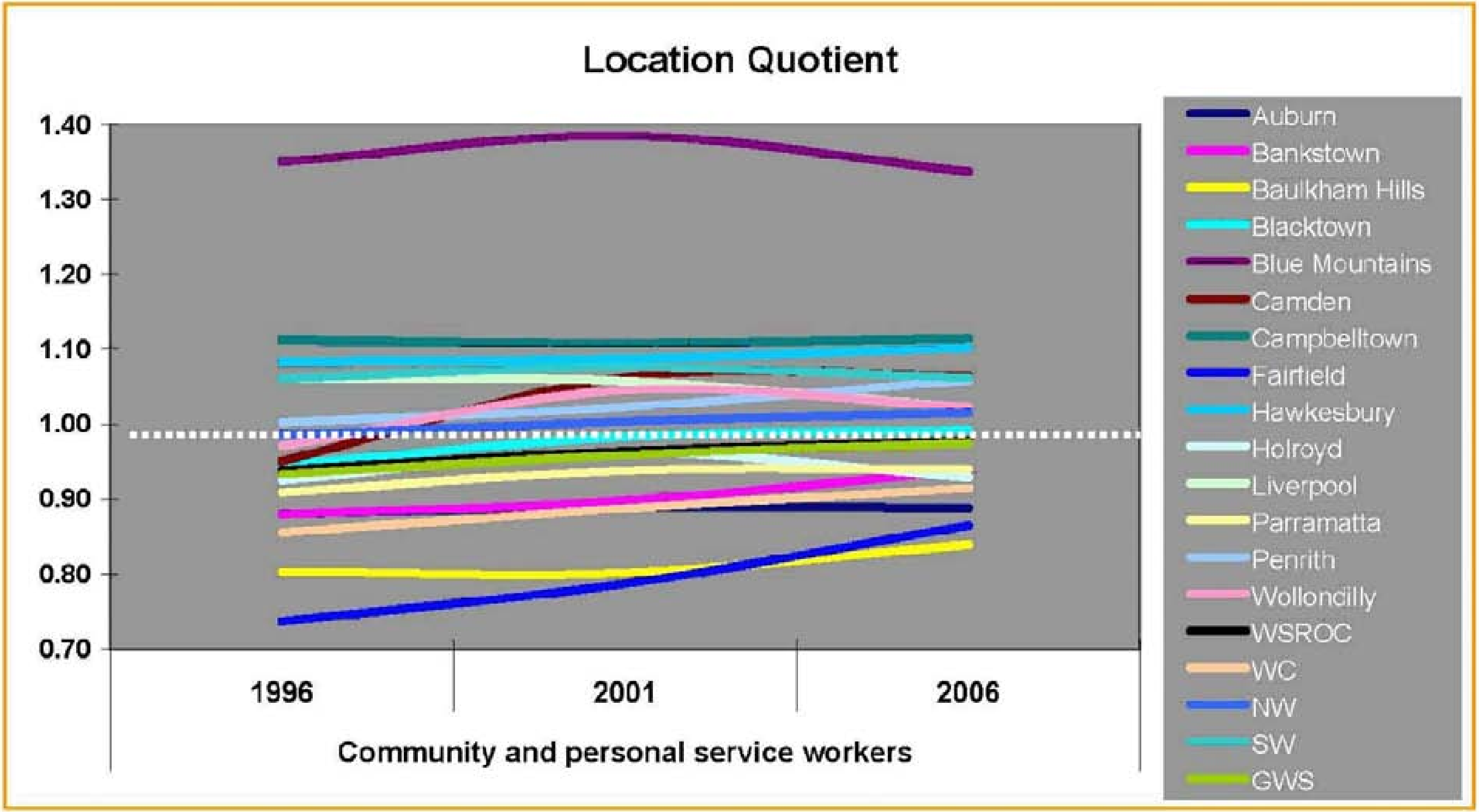


6.16.4 Community and personal service workers

Occupation per LGA

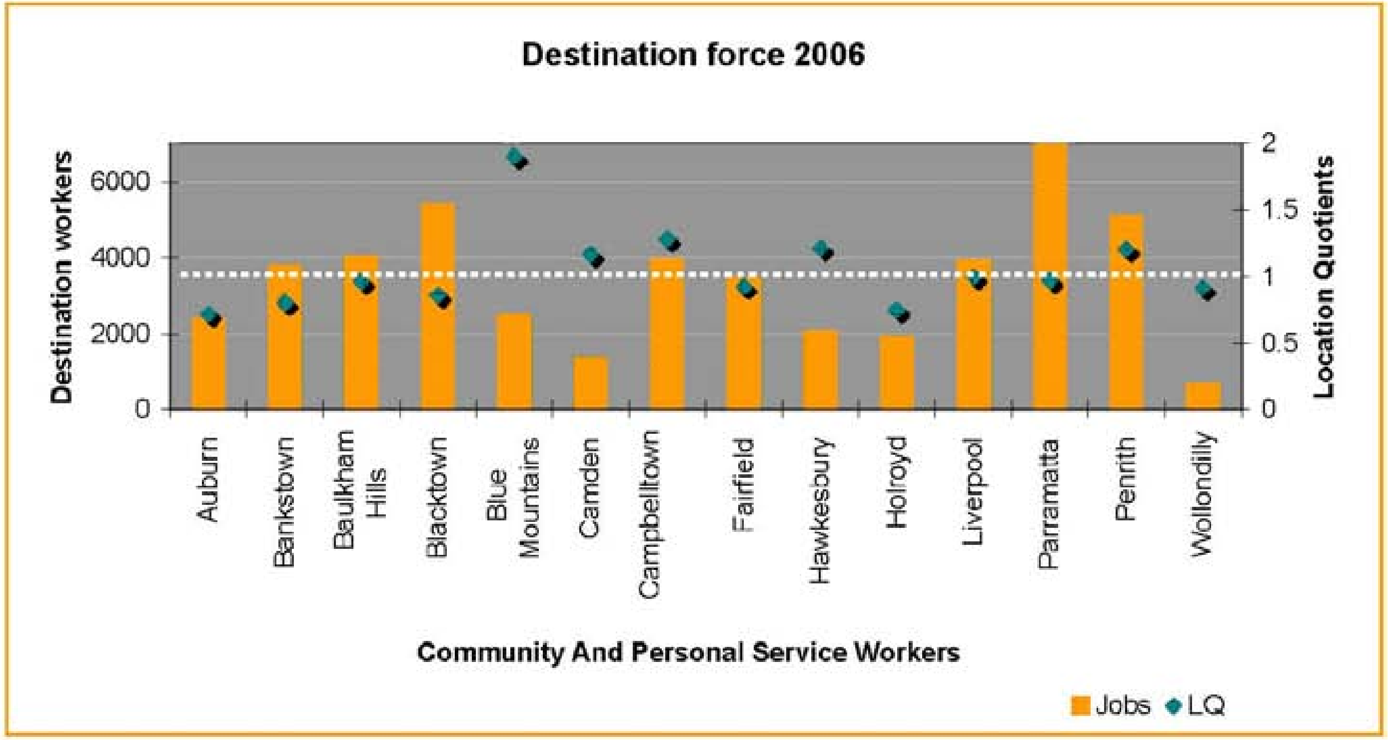
Household data (1996 - 2006)

	Community and personal service workers													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01	1996	2001	2006
Auburn	427	661	1088	536	711	1247	654	995	1649	561	402	51.56	131.93	0.88	0.89	0.89
Bankstown	1498	2400	3898	1633	2604	4237	1755	3162	4917	1019	680	26.14	88.82	0.88	0.90	0.94
Baulkham Hills	1170	2432	3602	1453	2890	4343	1774	3831	5605	2003	1262	55.61	93.94	0.80	0.80	0.84
Blacktown	2426	4075	6501	2858	4966	7824	3148	6204	9352	2851	1528	43.85	88.32	0.95	0.98	0.99
Blue Mountains	1083	1931	3014	1291	2175	3466	1321	2406	3727	713	261	23.66	71.36	1.35	1.39	1.34
Camden	377	656	1033	592	1086	1678	719	1379	2098	1065	420	103.10	93.19	0.95	1.06	1.07
Campbelltown	1796	2881	4677	1783	3224	5007	1774	3852	5626	949	619	20.29	74.50	1.11	1.11	1.12
Fairfield	1183	2155	3338	1328	2401	3729	1434	3105	4539	1201	810	35.98	89.05	0.74	0.79	0.86
Hawkesbury	789	1314	2103	797	1527	2324	816	1800	2616	513	292	24.39	71.32	1.08	1.09	1.10
Holroyd	845	1455	2300	963	1636	2599	940	1898	2838	538	239	23.39	73.47	0.93	0.96	0.93
Liverpool	1719	2016	3735	2145	2814	4959	2098	3444	5542	1807	583	48.38	96.94	1.06	1.06	1.02
Parramatta	1428	2402	3830	1609	2604	4213	1840	3062	4902	1072	689	27.99	88.25	0.91	0.94	0.94
Penrith	2145	3137	5282	2290	3773	6063	2363	4695	7058	1776	995	33.62	87.07	1.00	1.02	1.06
Wollondilly	335	673	1008	419	883	1302	408	1165	1573	565	271	56.05	78.14	0.97	1.05	1.02
WSROC	14713	23978	38691	16903	28101	45004	18143	34602	52745	-10440	-6575	36.32	87.70	0.94	0.96	0.98
WC	5381	9073	14454	6069	9956	16025	6623	12222	18845	-4391	-2820	30.38	89.28	0.86	0.89	0.91
NW	7613	12889	20502	8689	15331	24020	9422	18936	28358	-7856	-4338	38.32	84.97	0.99	1.00	1.02
SW	4227	6226	10453	4939	8007	12946	4999	9840	14839	-4386	-1893	41.96	85.33	1.06	1.08	1.06
GWS	17221	28188	45409	19697	33294	52991	21044	40998	62042	-16633	-9051	36.63	86.35	0.93	0.96	0.98
SSD	45549	73583	119132	49746	82973	132719	53884	98181	152065	-32933	-19346	27.64	83.27			
NSW	69410	120200	189610	76943	138373	215316	82573	166689	249262	59652	33946	31.46	80.14			
Australia	201142	379709	580851	231599	451874	683473	250015	551892	801907	221056	118434	38.06	77.46			


Location Quotient
1.40
1.30
1.20
1.10
1.00
0.90
0.80
0.70
1996
2001
2006
Community and personal service workers
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	2377	0.72
Bankstown	3794	0.81
Baulkham Hills	4030	0.96
Blacktown	5403	0.86
Blue Mountains	2491	1.91
Camden	1347	1.17
Campbelltown	3931	1.28
Fairfield	3444	0.93
Hawkesbury	2047	1.21
Holroyd	1886	0.75
Liverpool	3925	1.00
Parramatta	6941	0.97
Penrith	5096	1.21
Wollondilly	658	0.92
WSROC	39548	0.98
WC	16556	0.88
NW	19067	1.08
SW	9861	1.11
GWS	45484	1.00
SydneySD	138874	1.00

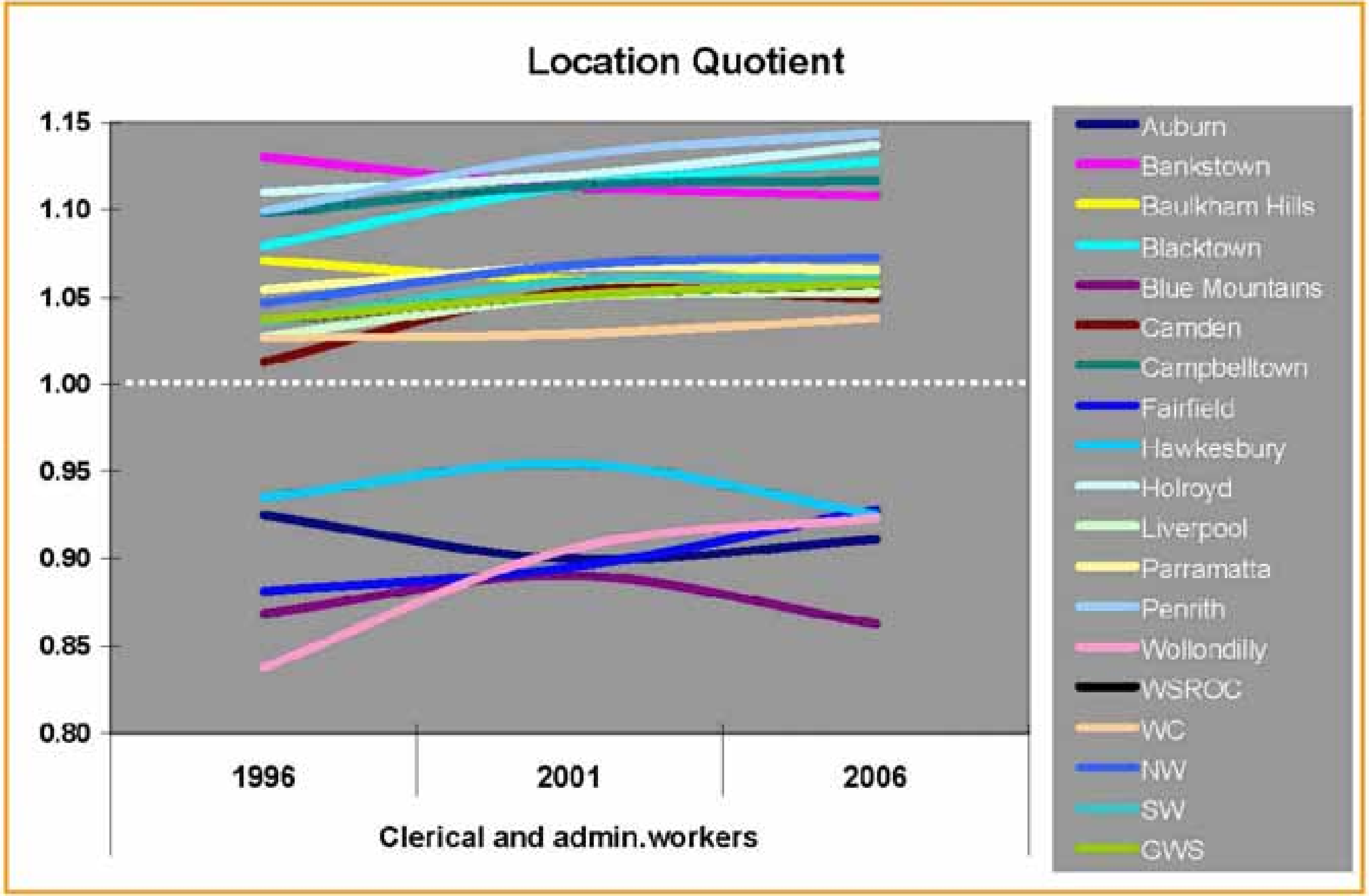


6.16.5 Clerical and administrative workers

Occupation per LGA

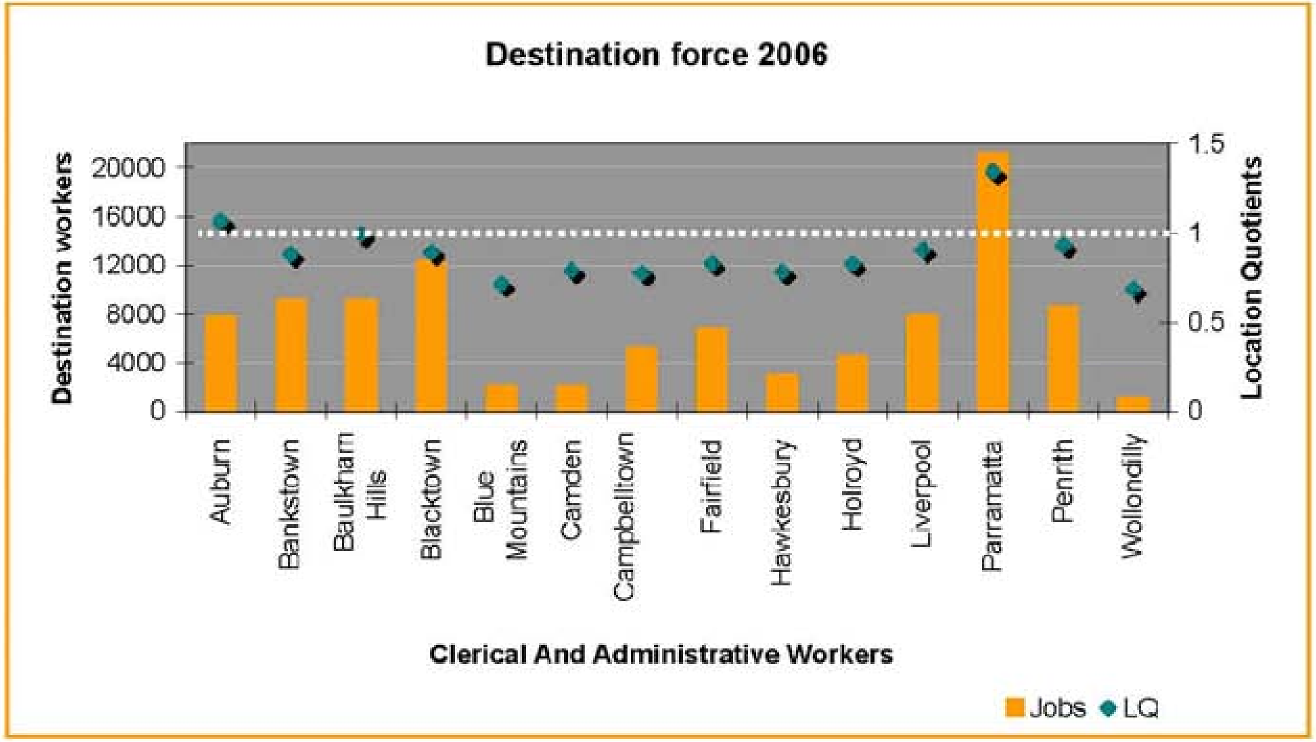
Household data (1996 - 2006)

	Clerical and administrative workers													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	897	2071	2968	898	2186	3084	1116	2408	3524	556	440	18.73	14.27	0.92	0.90	0.91
Bankstown	3249	9751	13000	3054	9795	12849	3199	8899	12098	-902	-751	-6.94	-5.84	1.13	1.11	1.11
Baulkham Hills	2606	9870	12476	2876	11166	14042	3322	11514	14836	2360	794	18.92	5.65	1.07	1.06	1.07
Blacktown	4815	14466	19281	5326	16324	21650	5937	16236	22173	2892	523	15.00	2.42	1.08	1.11	1.13
Blue Mountains	1345	3688	5033	1350	4094	5444	1272	3739	5011	-22	-433	-0.44	-7.95	0.87	0.89	0.86
Camden	517	2340	2857	790	3275	4065	848	3460	4308	1451	243	50.79	5.98	1.01	1.05	1.05
Campbelltown	2989	8987	11976	3032	9264	12296	3046	8695	11741	-235	-555	-1.96	-4.51	1.10	1.11	1.12
Fairfield	2512	7849	10361	2378	7982	10360	2670	7486	10156	-205	-204	-1.98	-1.97	0.88	0.89	0.93
Hawkesbury	942	3766	4708	907	4076	4983	778	3799	4577	-131	-406	-2.78	-8.15	0.93	0.95	0.93
Holroyd	1784	5379	7163	1824	5566	7390	1914	5328	7242	79	-148	1.10	-2.00	1.11	1.12	1.14
Liverpool	2163	7230	9393	2714	9315	12029	2879	9018	11897	2504	-132	26.66	-1.10	1.03	1.05	1.05
Parramatta	2946	8589	11535	3024	8695	11719	3299	8289	11588	53	-131	0.46	-1.12	1.05	1.07	1.07
Penrith	3478	11556	15034	3506	12873	16379	3575	12313	15888	854	-491	5.68	-3.00	1.10	1.13	1.14
Wollondilly	396	1862	2258	479	2275	2754	505	2455	2960	702	206	31.09	7.48	0.84	0.91	0.92
WSROC	26737	84215	110952	27857	92072	119929	29961	89029	118990	-3030	675	7.24	-0.78	1.04	1.05	1.06
WC	11388	33639	45027	11178	34224	45402	12198	32410	44608	419	794	-0.93	-1.75	1.03	1.03	1.04
NW	13186	43346	56532	13965	48533	62498	14884	47601	62485	-5953	13	10.53	-0.02	1.05	1.07	1.07
SW	6065	20419	26484	7015	24129	31144	7278	23628	30906	-4422	238	16.70	-0.76	1.04	1.06	1.06
GWS	30639	97404	128043	32158	106886	139044	34360	103639	137999	-9956	1045	7.78	-0.75	1.04	1.05	1.06
SSD	76147	233165	309312	78202	246186	324388	80996	236047	317043	-7731	7345	2.50	-2.26			
NSW	100891	325215	426106	101736	345118	446854	105385	341599	446984	20878	130	4.90	0.03			
Australia	289084	924573	1213657	294276	997344	1291620	317012	1048795	1365807	152150	74187	12.54	5.74			


Location Quotient
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
1996
2001
2006
Clerical and admin.workers
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	7742	1.07
Bankstown	9153	0.88
Baulkham Hills	9152	0.99
Blacktown	12317	0.89
Blue Mountains	2061	0.72
Camden	2005	0.79
Campbelltown	5243	0.78
Fairfield	6793	0.83
Hawkesbury	2918	0.79
Holroyd	4593	0.83
Liverpool	7826	0.90
Parramatta	21192	1.35
Penrith	8632	0.93
Wollondilly	1086	0.69
WSROC	87786	0.99
WC	44880	1.08
NW	35080	0.90
SW	16160	0.83
GWS	96120	0.96
SydneySD	305743	1.00

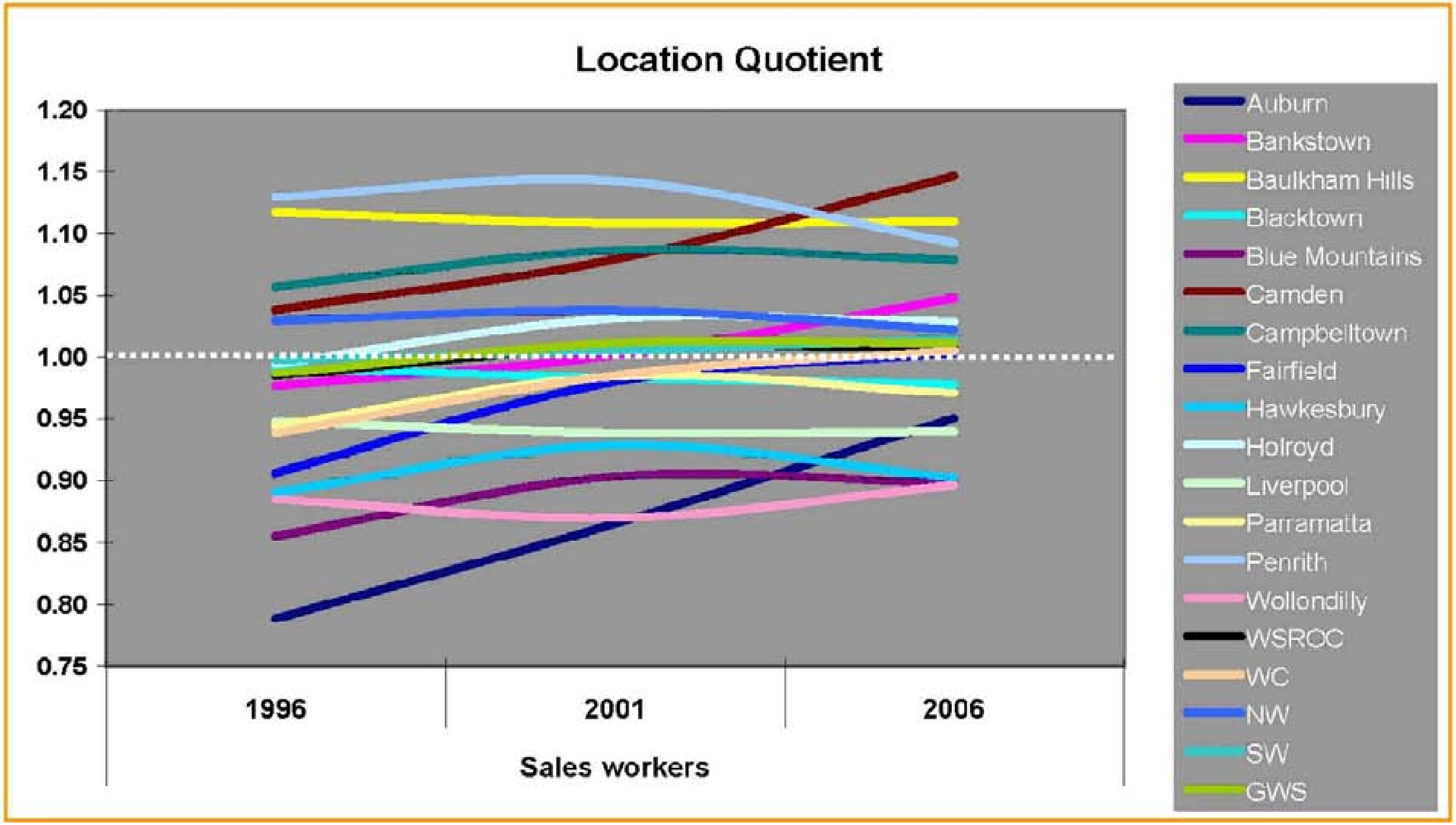


6.16.6 Sales workers

Occupation per LGA

Household data (1996 - 2006)

	Sales workers														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01		1996	2001	2006
Auburn	578	704	1282	727	882	1609	1040	1052	2092	810	483	63.18	30.02		0.79	0.87	0.95
Bankstown	2328	3365	5693	2639	3632	6271	2634	3876	6510	817	239	14.35	3.81		0.98	1.00	1.05
Baulkham Hills	2892	3701	6593	3512	4448	7960	3976	4818	8794	2201	834	33.38	10.48		1.12	1.11	1.11
Blacktown	3419	5551	8970	3936	6441	10377	4220	6722	10942	1972	565	21.98	5.44		0.99	0.98	0.98
Blue Mountains	1067	1444	2511	1238	1758	2996	1196	1772	2968	457	-28	18.20	-0.93		0.86	0.90	0.90
Camden	607	877	1484	905	1354	2259	1024	1655	2679	1195	420	80.53	18.59		1.04	1.08	1.15
Campbelltown	2184	3659	5843	2458	4048	6506	2359	4095	6454	611	-52	10.46	-0.80		1.06	1.09	1.08
Fairfield	2156	3242	5398	2513	3643	6156	2420	3826	6246	848	90	15.71	1.46		0.91	0.98	1.00
Hawkesbury	978	1294	2272	1028	1603	2631	938	1602	2540	268	-91	11.80	-3.46		0.89	0.93	0.90
Holroyd	1308	1945	3253	1507	2186	3693	1551	2178	3729	476	36	14.63	0.97		1.00	1.03	1.03
Liverpool	1754	2637	4391	2288	3545	5833	2335	3708	6043	1652	210	37.62	3.60		0.95	0.94	0.94
Parramatta	2317	2917	5234	2635	3228	5863	2769	3238	6007	773	144	14.77	2.46		0.94	0.98	0.97
Penrith	2995	4834	7829	3371	5608	8979	3175	5460	8635	806	-344	10.30	-3.83		1.13	1.14	1.09
Wollondilly	484	725	1209	568	867	1435	578	1057	1635	426	200	35.24	13.94		0.89	0.87	0.90
WSROC	21792	31634	53426	25394	36974	62368	26254	38252	64506	-7776	-1718	20.74	3.43		0.99	1.01	1.01
WC	8687	12173	20860	10021	13571	23592	10414	14170	24584	-3724	-992	17.85	4.20		0.94	0.99	1.01
NW	11351	16824	28175	13085	19858	32943	13505	20374	33879	-5704	-936	20.24	2.84		1.03	1.04	1.02
SW	5029	7898	12927	6219	9814	16033	6296	10515	16811	-3884	-778	30.05	4.85		1.00	1.01	1.01
GWS	25067	36895	61962	29325	43243	72568	30215	45059	75274	-13312	-2706	21.48	3.73		0.99	1.01	1.01
SSD	65251	91409	156660	73348	102582	175930	75187	105161	180348	-23688	-4418	15.12	2.51				
NSW	95401	142745	238146	107538	163731	271269	110794	170897	281691	43545	10422	18.29	3.84				
Australia	286624	434924	721548	326785	511547	838332	343447	552758	896205	174657	57873	24.21	6.90				


Location Quotient
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
1996
2001
2006
Sales workers
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

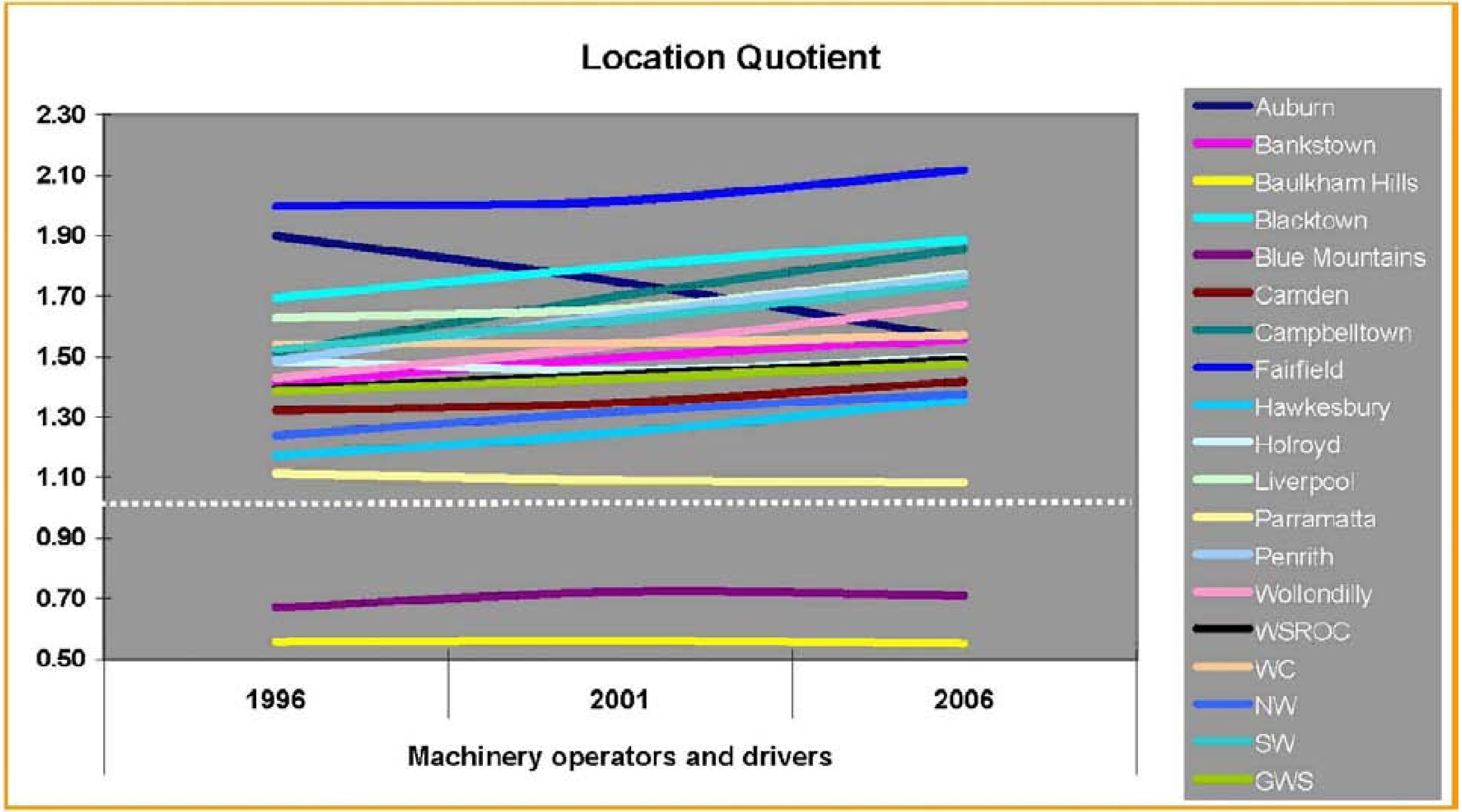
LGA	Jobs	LQ
Auburn	3586	0.90
Bankstown	5777	1.01
Baulkham Hills	7053	1.39
Blacktown	8339	1.10
Blue Mountains	1807	1.14
Camden	1711	1.23
Campbelltown	4933	1.33
Fairfield	4815	1.07
Hawkesbury	1927	0.94
Holroyd	2778	0.91
Liverpool	4893	1.03
Parramatta	6971	0.80
Penrith	6432	1.26
Wollondilly	627	0.72
WSROC	51600	1.05
WC	21149	0.92
NW	25558	1.19
SW	12164	1.13
GWS	58871	1.07
SydneySD	168371	1.00

6.16.7 Machinery operators and drivers

Occupation per LGA

Household data (1996 - 2006)

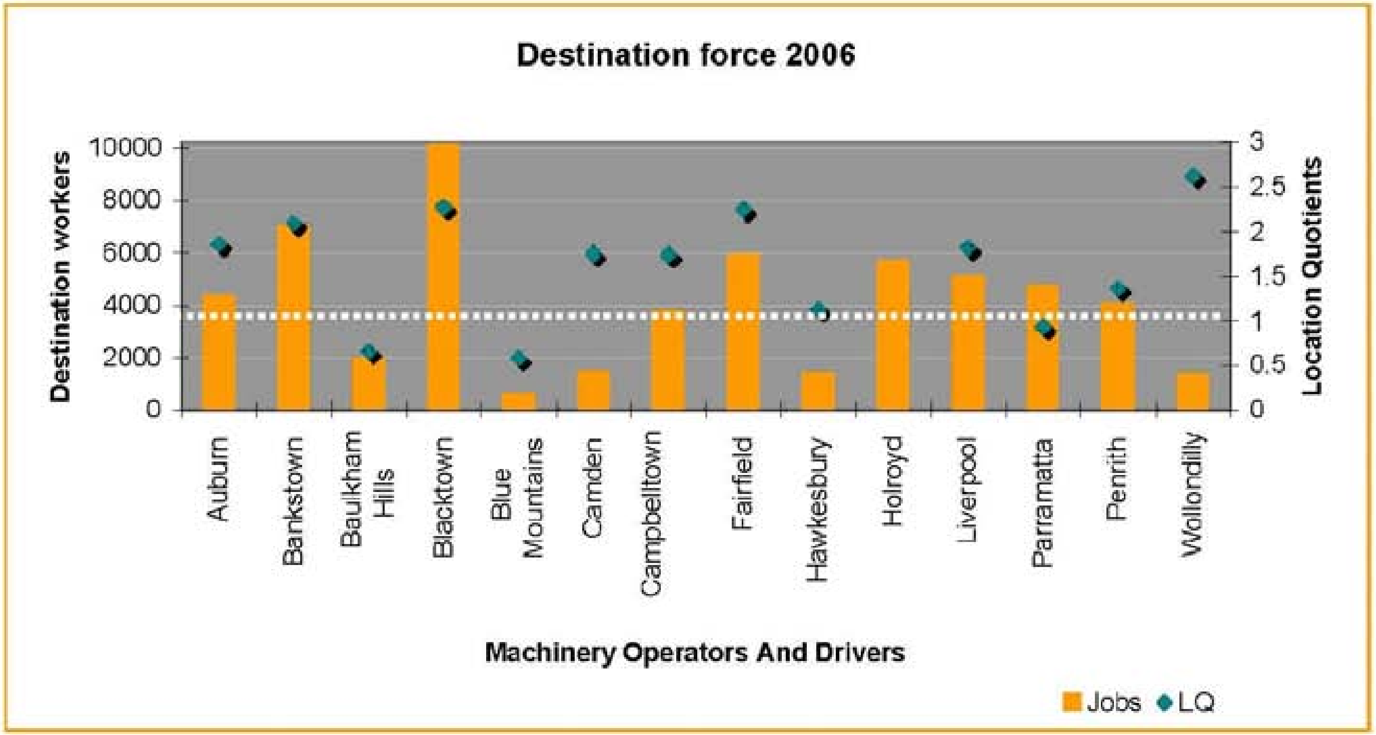
	Machinery operators and drivers													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	1913	485	2398	1886	384	2270	1845	314	2159	-239	-111	-9.97	-4.89	1.90	1.75	1.56
Bankstown	5305	1103	6408	5568	981	6549	5314	786	6100	-308	-449	-4.81	-6.86	1.42	1.50	1.56
Baulkham Hills	2109	438	2547	2413	397	2810	2439	304	2743	196	-67	7.70	-2.38	0.56	0.56	0.55
Blacktown	9998	1911	11909	11355	1910	13265	11618	1668	13286	1377	21	11.56	0.16	1.70	1.80	1.89
Blue Mountains	1330	195	1525	1491	182	1673	1358	118	1476	-49	-197	-3.21	-11.78	0.67	0.72	0.71
Camden	1290	175	1465	1721	250	1971	1900	186	2086	621	115	42.39	5.83	1.32	1.35	1.42
Campbelltown	5482	1021	6503	6086	1034	7120	6167	825	6992	489	-128	7.52	-1.80	1.52	1.70	1.86
Fairfield	7387	1850	9237	7383	1463	8846	7123	1177	8300	-937	-546	-10.14	-6.17	2.00	2.02	2.12
Hawkesbury	1982	339	2321	2141	330	2471	2172	234	2406	85	-65	3.66	-2.63	1.17	1.25	1.36
Holroyd	3201	572	3773	3139	507	3646	3036	380	3416	-357	-230	-9.46	-6.31	1.49	1.46	1.50
Liverpool	4957	899	5856	6207	1007	7214	6291	888	7179	1323	-35	22.59	-0.49	1.63	1.66	1.77
Parramatta	3992	798	4790	3917	622	4539	3760	460	4220	-570	-319	-11.90	-7.03	1.11	1.09	1.08
Penrith	6873	1119	7992	7869	1136	9005	7925	854	8779	787	-226	9.85	-2.51	1.49	1.64	1.76
Wollondilly	1386	131	1517	1577	196	1773	1784	137	1921	404	148	26.63	8.35	1.43	1.54	1.67
WSROC	49047	9709	58756	53369	8919	62288	52881	7183	60064	1338	2154	2.23	-3.57	1.40	1.44	1.49
WC	21798	4808	26606	21893	3957	25850	21078	3117	24195	2411	1655	-9.06	-6.40	1.54	1.55	1.57
NW	22292	4002	26294	25269	3955	29224	25512	3178	28690	-2396	534	9.11	-1.83	1.24	1.32	1.38
SW	13115	2226	15341	15591	2487	18078	16142	2036	18178	-2837	-100	18.49	0.55	1.53	1.62	1.74
GWS	57205	11036	68241	62753	10399	73152	62732	8331	71063	-2822	2089	4.14	-2.86	1.39	1.43	1.48
SSD	101608	20059	121667	105653	17288	122941	100243	13290	113533	8134	9408	-6.69	-7.65			
NSW	169927	29757	199684	172484	25899	198383	168265	18703	186968	-12716	-11415	-6.37	-5.75			
Australia	517697	92612	610309	532078	81921	613999	541626	62990	604616	-5693	-9383	-0.93	-1.53			


Location Quotient
2.30
2.10
1.90
1.70
1.50
1.30
1.10
0.90
0.70
0.50
1996
2001
2006
Machinery operators and drivers
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	4339	1.86
Bankstown	6982	2.10
Baulkham Hills	1951	0.66
Blacktown	10109	2.28
Blue Mountains	541	0.59
Camden	1428	1.75
Campbelltown	3778	1.74
Fairfield	5906	2.25
Hawkesbury	1355	1.13
Holroyd	5679	3.19
Liverpool	5071	1.82
Parramatta	4731	0.93
Penrith	4066	1.36
Wollondilly	1332	2.62

WSROC	45051	1.57
WC	21958	1.65
NW	18022	1.44
SW	11609	1.85
GWS	51589	1.61
SydneySD	98240	1.00

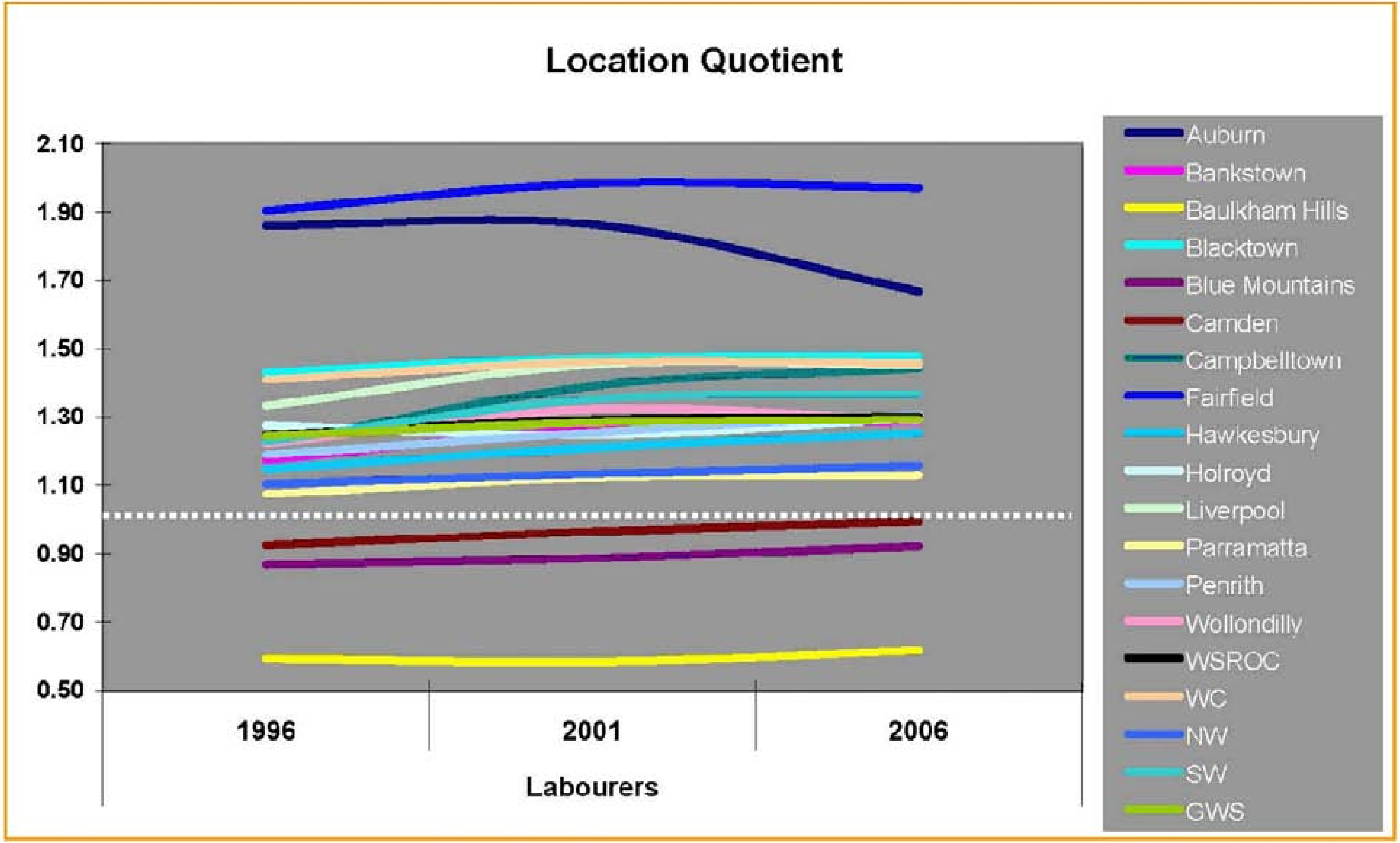


6.16.8 Labourers

Occupation per LGA

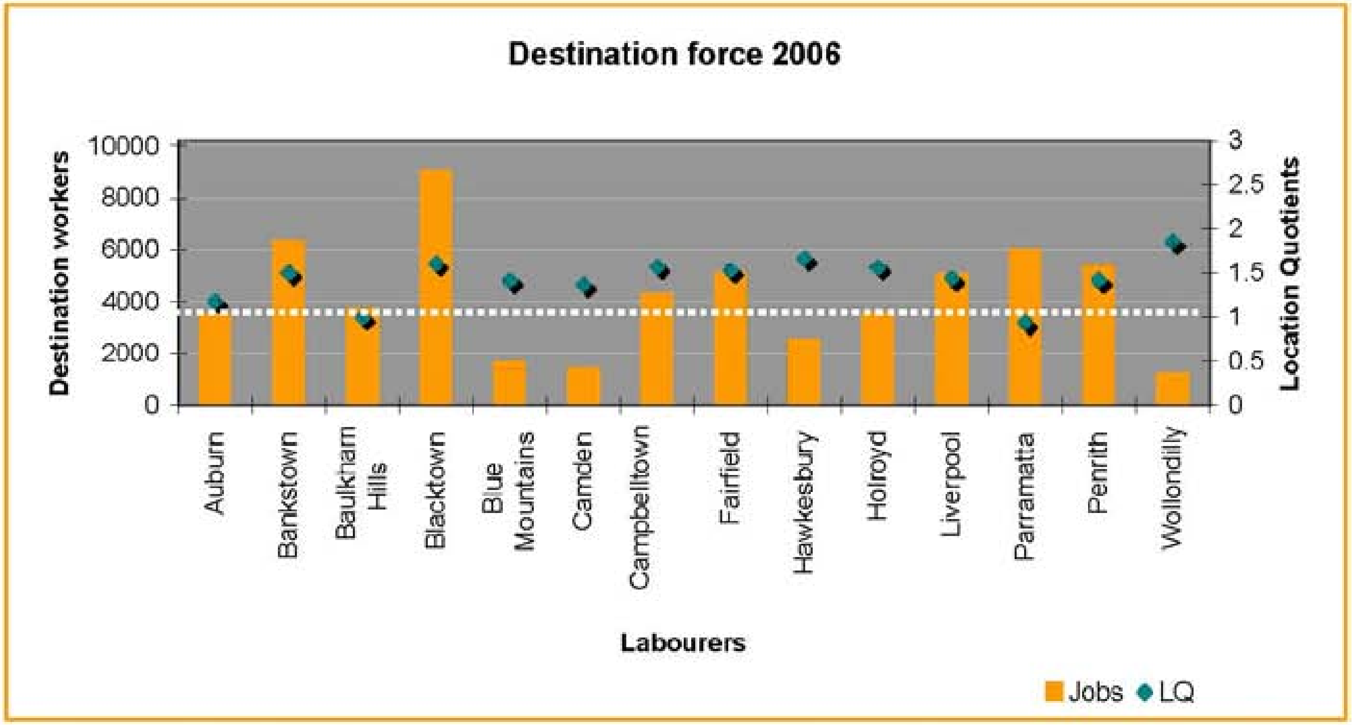
Household data (1996 - 2006)

	Labourers													Location Quotient		
	1996			2001			2006			Abs. change		% change				
LGAs	Male	Female	**Total**	Male	Female	**Total**	Male	Female	**Total**	06-96	06-01	06-96	06-01	**1996**	**2001**	**2006**
Auburn	1541	1168	2709	1754	1125	2879	1912	1203	3115	406	236	14.99	8.20	1.86	1.86	1.67
Bankstown	3873	2246	6119	4244	2333	6577	4485	2309	6794	675	217	11.03	3.30	1.17	1.26	1.29
Baulkham Hills	1966	1168	3134	2329	1152	3481	2791	1359	4150	1016	669	32.42	19.22	0.59	0.58	0.62
Blacktown	6779	4813	11592	7808	5097	12905	8583	5433	14016	2424	1111	20.91	8.61	1.43	1.47	1.48
Blue Mountains	1380	902	2282	1563	881	2444	1643	941	2584	302	140	13.23	5.73	0.87	0.89	0.92
Camden	730	453	1183	1110	566	1676	1336	634	1970	787	294	66.53	17.54	0.92	0.96	0.99
Campbelltown	3718	2318	6036	4260	2655	6915	4492	2828	7320	1284	405	21.27	5.86	1.22	1.39	1.44
Fairfield	6132	4023	10155	6418	3929	10347	6433	3977	10410	255	63	2.51	0.61	1.90	1.98	1.97
Hawkesbury	1526	1096	2622	1808	1037	2845	1898	1090	2988	366	143	13.96	5.03	1.15	1.21	1.25
Holroyd	2300	1435	3735	2406	1298	3704	2653	1333	3986	251	282	6.72	7.61	1.28	1.25	1.30
Liverpool	3281	2248	5529	4583	2922	7505	4890	3030	7920	2391	415	43.24	5.53	1.33	1.45	1.45
Parramatta	3276	2053	5329	3508	2043	5551	3902	2018	5920	591	369	11.09	6.65	1.07	1.12	1.13
Penrith	4580	2796	7376	5339	2842	8181	5679	3089	8768	1392	587	18.87	7.18	1.19	1.25	1.31
Wollondilly	882	611	1493	1164	649	1813	1257	739	1996	503	183	33.69	10.09	1.22	1.32	1.29
WSROC	36634	23948	60582	41760	24659	66419	44869	25782	70651	-5287	-3402	16.62	6.37	1.25	1.29	1.30
WC	17122	10925	28047	18330	10728	29058	19385	10840	30225	-2178	-1167	7.77	4.02	1.41	1.46	1.46
NW	16231	10775	27006	18847	11009	29856	20594	11912	32506	-5500	-2650	20.37	8.88	1.10	1.13	1.16
SW	8611	5630	14241	11117	6792	17909	11975	7231	19206	-4965	-1297	34.86	7.24	1.23	1.35	1.37
GWS	41964	27330	69294	48294	28529	76823	51954	29983	81937	-12643	-5114	18.25	6.66	1.24	1.28	1.29
SSD	86508	53849	140357	93221	52943	146164	98988	54068	153056	-12699	-6892	9.05	4.72			
NSW	153628	92225	245853	166676	92427	259103	178975	97996	276971	31118	17868	12.66	6.90			
Australia	477240	301906	779146	534941	314575	849516	604958	347562	952520	173374	103004	22.25	12.13			


Location Quotient
2.10
1.90
1.70
1.50
1.30
1.10
0.90
0.70
0.50
1996
2001
2006
Labourers
Auburn
Bankstown
Baulkham Hills
Blacktown
Blue Mountains
Camden
Campbelltown
Fairfield
Hawkesbury
Holroyd
Liverpool
Parramatta
Penrith
Wollondilly
WSROC
WC
NW
SW
GWS

2006 Destination data

LGA	Jobs	LQ
Auburn	3494	1.18
Bankstown	6324	1.50
Baulkham Hills	3734	1.00
Blacktown	9026	1.61
Blue Mountains	1658	1.42
Camden	1412	1.37
Campbelltown	4308	1.57
Fairfield	5087	1.53
Hawkesbury	2518	1.67
Holroyd	3524	1.56
Liverpool	5067	1.44
Parramatta	5999	0.94
Penrith	5368	1.42
Wollondilly	1196	1.86
WSROC	48275	1.33
WC	20904	1.24
NW	22304	1.41
SW	11983	1.51
GWS	55191	1.36
SydneySD	124366	1.00



6.16.9 Inadequately described

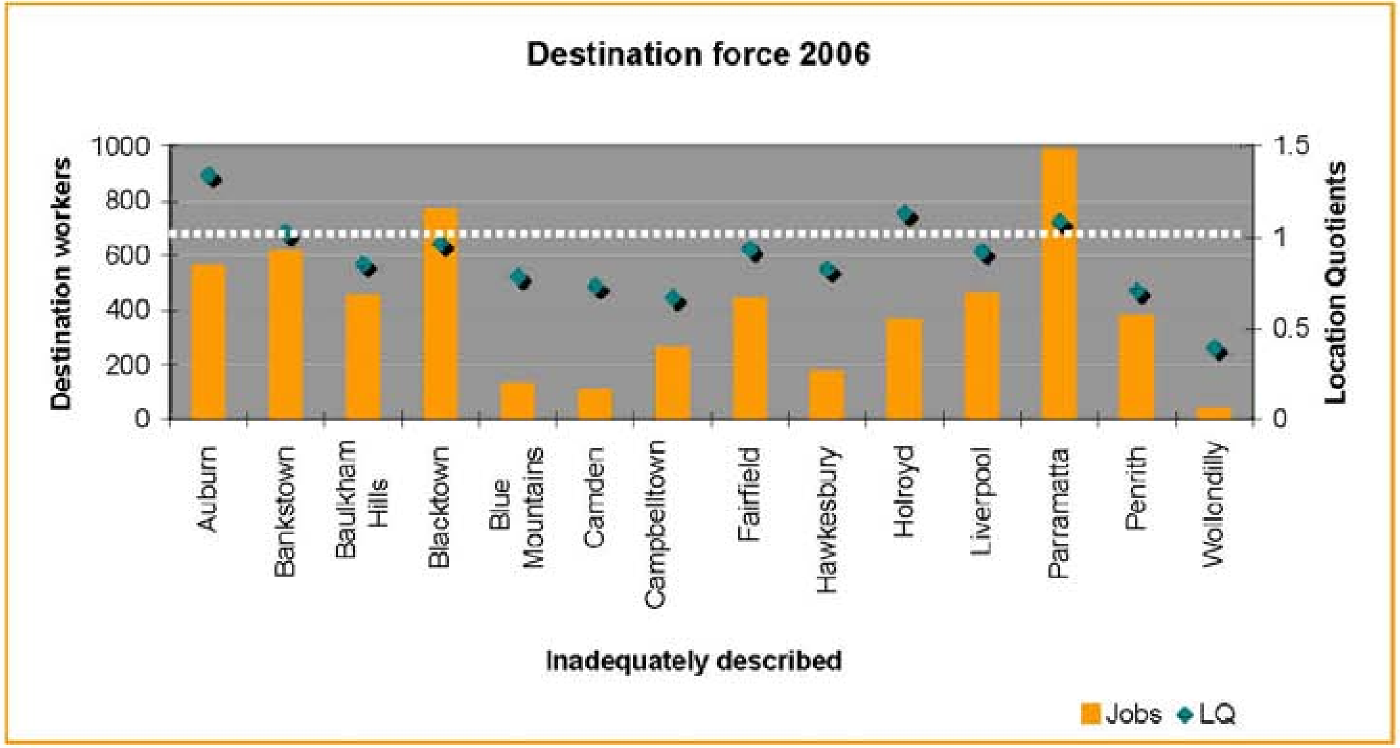
Occupation per LGA

Household data (1996 - 2006)

	Inadequately described														Location Quotient		
	1996			2001			2006			Abs. change		% change					
LGAs	Male	Female	Total	Male	Female	Total	Male	Female	Total	06-96	06-01	06-96	06-01		1996	2001	2006
Auburn	415	236	651	406	256	662	499	293	792	141	130	21.66	209.38		1.49	1.68	1.66
Bankstown	1205	762	1967	1010	673	1683	1110	702	1812	-155	129	-7.88	169.24		1.26	1.27	1.34
Baulkham Hills	697	541	1238	752	600	1352	812	613	1425	187	73	15.11	137.50		0.78	0.89	0.83
Blacktown	1837	1064	2901	1450	1091	2541	1638	1164	2802	-99	261	-3.41	156.83		1.19	1.13	1.15
Blue Mountains	387	252	639	261	217	478	284	181	465	-174	-13	-27.23	114.29		0.81	0.68	0.65
Camden	227	148	375	223	147	370	227	166	393	18	23	4.80	167.35		0.98	0.83	0.78
Campbelltown	1069	629	1698	786	542	1328	790	540	1330	-368	2	-21.67	145.39		1.14	1.04	1.02
Fairfield	1514	882	2396	1335	880	2215	1369	851	2220	-176	5	-7.35	152.27		1.50	1.66	1.64
Hawkesbury	393	230	623	282	247	529	313	224	537	-86	8	-13.80	117.41		0.91	0.88	0.88
Holroyd	658	354	1012	515	347	862	549	363	912	-100	50	-9.88	162.82		1.15	1.13	1.16
Liverpool	961	582	1543	968	656	1624	1060	692	1752	209	128	13.55	167.07		1.24	1.23	1.26
Parramatta	966	620	1586	794	554	1348	877	596	1473	-113	125	-7.12	165.88		1.06	1.07	1.10
Penrith	1255	769	2024	920	677	1597	966	723	1689	-335	92	-16.55	149.48		1.09	0.96	0.98
Wollondilly	220	163	383	187	142	329	175	122	297	-86	-32	-22.45	109.15		1.04	0.94	0.75
WSROC	10288	6292	16580	8693	6198	14891	9477	6402	15879	1119	-732	-4.23	156.20		1.15	1.08	1.05
WC	4758	2854	7612	4060	2710	6770	4404	2805	7209	403	-439	-5.29	166.01		1.27	1.33	1.36
NW	4569	2856	7425	3665	2832	6497	4013	2905	6918	507	-421	-6.83	144.28		1.01	0.96	0.96
SW	2477	1522	3999	2164	1487	3651	2252	1520	3772	227	-121	-5.68	153.67		1.13	1.11	1.11
GWS	11804	7232	19036	9889	7029	16918	10669	7230	17899	1137	-981	-5.97	154.65				
SSD	25076	17051	42127	21595	15799	37394	23044	16097	39141	2986	-1747	-7.09	147.74				
NSW	39579	26353	65932	32363	23598	55961	32833	22423	55256	-10676	-705	-16.19	134.16				
Australia	118987	81111	200098	97060	70746	167806	99004	66588	165592	-34506	-2214	-17.24	134.07				

2006 Destination data

LGA	Jobs	LQ
Auburn	560	1.34
Bankstown	613	1.03
Baulkham Hills	453	0.86
Blacktown	768	0.97
Blue Mountains	130	0.79
Camden	107	0.73
Campbelltown	260	0.67
Fairfield	440	0.94
Hawkesbury	177	0.83
Holroyd	362	1.14
Liverpool	460	0.92
Parramatta	987	1.09
Penrith	378	0.71
Wollondilly	36	0.40
WSROC	4966	0.97
WC	2600	1.09
NW	1906	0.85
SW	863	0.77
GWS	5369	0.93
SydneySD	17599	1.00



7 Unemployment and problems of labour market access

This chapter uses unemployment as an indicator of problems with access to the labour market experienced by a significant proportion of Western Sydney residents. The analysis underpinning this study argues that developing a platform of territorial competence is fundamental for growth and innovation in the West-Central and North-West regions. After briefly exploring trends in unemployment and workforce participation in Greater Western Sydney (GWS), the chapter canvasses those elements of such a platform holding potential for lifting workforce participation for those people generally identified as hard to place. It also briefly considers implications of 'greening' industries generally because this may give rise to enhancing opportunities for existing lower skilled workers in the future. The intention here is to canvass broad approaches that warrant consideration based on Australian and international experience.

7.1 Unemployment in Western Sydney

7.1.1 Unemployment at the 2006 census

Unemployment remains a significant social problem in Western Sydney but in 2006, as in 2001, remains more geographically concentrated than is often realised. Two kinds of data are explored in this chapter:

1. Estimates of unemployment in LGAs provided by the Australian Department of Employment and Workplace Relations (DEWR), commonly lower than those estimated in regular labour market surveys carried out by the ABS

2. The census each five years provides the most accurate snapshot of unemployment in specific places so most importance has been placed here on census data.

Table 7.1 shows unemployment rates recorded at the 2001 and 2006 censuses. In both years, eight of the 14 LGAs in Western Sydney had unemployment rates above the (falling) Sydney metropolitan average. In addition:

7 Unemployment and problems of labour market access

- As in 2001, outer LGAs of Wollondilly, Hawkesbury and Camden experienced below average rates in 2006, along with Baulkham Hills at 3.2%, among the lowest in Sydney and comparable with wealthy north shore LGAs.

- In 2006 Western Sydney still experienced Sydney's highest unemployment rates with Fairfield at 10.5%, down from 12.7% in 2001, and Auburn at 9.1%, down from 11.9% in 2001.

Table 7.1 Census Unemployment Rates – GWS 2001 & 2006 (%)

	2001			2006		
	Males	Females	Persons	Males	Females	Persons
Auburn	12.6	10.9	11.9	9.2	9.0	9.1
Bankstown	8.6	7.0	7.9	7.6	7.1	7.4
Baulkham Hills	3.5	2.9	3.2	3.2	3.2	3.2
Blacktown	8.1	7.1	7.7	6.4	7.2	6.8
Blue Mountains	6.0	5.0	5.5	5.1	4.7	4.9
Camden	3.9	4.4	4.1	3.4	4.4	3.9
Campbelltown	8.7	8.1	8.5	6.9	8.2	7.5
Fairfield	12.5	13.0	12.7	10.0	11.2	10.5
Hawkesbury	4.7	4.7	4.7	3.7	4.5	4.1
Holroyd	8.2	6.5	7.5	6.9	6.9	6.9
Liverpool	8.6	7.9	8.3	6.8	7.6	7.1
Parramatta	7.9	6.2	7.2	6.7	6.6	6.7
Penrith	6.0	5.8	5.9	5.1	5.5	5.3
Wollondilly				3.9	4.8	4.3
SMA	**6.6**	**5.5**	**6.1**	**5.3**	**5.3**	**5.3**

Source: ABS, CDATA, 2001

Table 7.1 also shows strong gender differences in the incidence of unemployment, while signalling three important changes.

- In 1996 and 2001, unemployment rates for men across Western Sydney were consistently higher than for women except in Fairfield (where rates for men and women were uniformly high) and Camden (uniformly low). By 2006, however, male unemployment rates had improved to be lower than those for women in 9 of the 13 LGAs in Western Sydney. While male falls echoed the trend for Sydney as a whole in most LGAs, the improvement was much greater for Auburn where male rates fell by 27% 2001 to 2006.

- LGAs such as Auburn, Bankstown, Holroyd, Liverpool and Parramatta showed steady job shedding from manufacturing from the mid 1980s but from 2001 to 2006 this trend was offset by a significant growth of both construction and managerial jobs and, in Auburn, continued growth of service jobs employing males such as those in motor vehicle and electronics retailing and security.

- The consistently lower unemployment rates for women recorded across Western Sydney in 1996 and 2001 were not sustained in 2006 largely because female rates did not continue to fall between 2001 and 2006 except in Auburn and Fairfield where, nonetheless, male rates fell faster. Unemployment rates for women increased slightly from 2001 to 2006 in Holroyd and Parramatta.

Participation rates, being the proportion of people of working age actually employed or seeking work, are crucial in interpreting changes in unemployment rates (table 7.2). Several significant trends are observable.

- Auburn's residential population had the lowest participation rates at each census and they declined significantly 1996 to 2001. Yet in 2006, Auburn returned to 54% participation. Fairfield shows a similar pattern, its participation rate slumping to 53% in 2001 but returning to its 1996 level of 55% by 2006.

- From 2001 to 2006 unemployment rates fell more rapidly in Auburn and Fairfield than elsewhere in Western Sydney, with many men probably re-entering the workforce through construction and service jobs.

- Yet these LGAs still experience the highest rates of unemployment in Western Sydney and the lowest participation rates; so a significant quantity of disguised unemployment is likely to remain in these areas especially since they experienced major job shedding from manufacturing between 1986 and 1996. This persistence makes effective rates of joblessness higher.

- At the other end of the spectrum, outer LGAs of Camden, Baulkham Hills, Hawkesbury, Penrith and Wollondilly have participation rates reaching or exceeding 70% compared with Sydney's overall rate of 65%.

Table 7.2 Labour force participation rates in GWS (%)

	1996	2001		2006	
LGA	Persons	Persons	Male	Female	Persons
Auburn	54.0	49.1	62.3	46.8	54.8
Bankstown	56.7	54.1	66.5	48.1	57.0
Baulkham Hills	70.4	70.2	78.6	65.8	72.0
Blacktown	62.3	61.5	74.1	57.6	65.6
Blacktown North			78.7	65.4	72.0
Blacktown SE			72.4	55.6	63.8
Blacktown SW			71.1	52.1	61.2
Blue Mountains	61.3	62.3	72.4	59.4	65.6
Camden	68.1	69.8	80.8	65.2	72.7
Campbelltown	64.2	62.6	75.4	59.1	67.0
Fairfield	55.1	52.7	65.7	45.8	55.5
Hawkesbury	68.2	66.9	78.1	63.7	70.7
Holroyd	59.6	58.5	71.0	53.1	61.9
Liverpool	61.3	60.6	73.5	55.1	64.2
Parramatta	58.7	57.3	70.4	54.4	62.3
Penrith	66.9	66.2	77.8	62.3	70.0
Wollondilly			77.1	62.6	69.9
Sydney	**63.2**	**65.0**	**73.0**	**58.7**	**65.6**

Source: Census 1996, 2001, 2006

- By 2006 there remains a distinct inner/outer split in labour force participation in Western Sydney. Outer LGAs, including the expanding mortgage belts, have rates which, while reflecting fluctuations for the SMA as a whole, have been consistently higher. Inner Western Sydney LGAs, by contrast, have maintained rates well below both Western Sydney and Sydney averages although they rose from 2001 to 2006.

- Participation rates for men declined steadily across Western Sydney from the early 1980s, reflecting job shedding from manufacturing especially in Western Sydney's inner western LGAs; indeed, most of Sydney's decline in male full time workforce participation after 1980 occurred in its western suburbs.

- This pattern has been uneven since 1996, however, with participation rates for men well above Sydney averages in outer LGAs by 2006 while those in the inner west, and those with a large residential workforce in manufacturing like Bankstown and Holroyd, remaining below average although improving.

- Female participation rates also declined across Western Sydney from 1991 but at a slower rate than for men and for Sydney as a whole.

- Yet overall, participation rates for women in Western Sydney in 2006 remained lower than those for Sydney as a whole and were especially low in Fairfield, Auburn and Bankstown, all of which have relatively large culturally- and linguistically-diverse (CALD) populations. These lower participation rates reflect women's lower participation in full time work compared to the metropolitan area as a whole since a significant proportion of new net jobs created in these areas has been full time from 2001 to 2006.

- Despite the proximity of retail service and business service jobs to residents of Parramatta and Holroyd LGAs, female participation rates in these LGAs remained below Sydney averages by 2006, while female unemployment rose in both LGAs from 2001 to 2006.

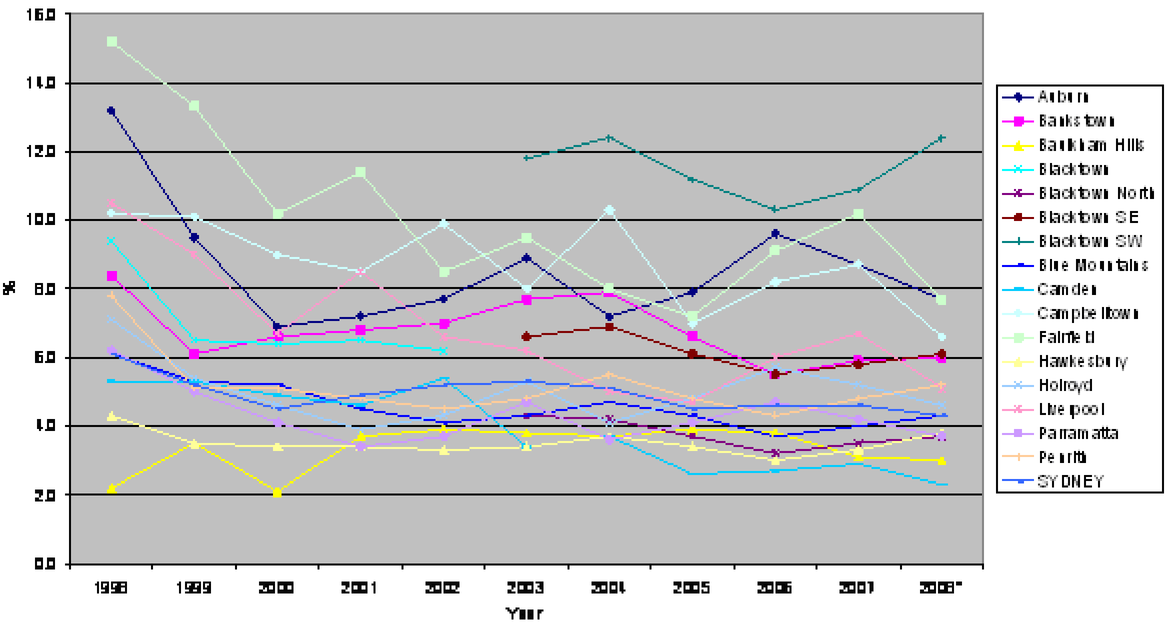
- By contrast, participation rates for women were significantly higher than the Sydney average in outer LGAs, notably in Baulkham Hills and Camden where there has been a significant increase in part time service employment opportunities.

7.1.2 A time series analysis

DEWA provides the only continuous time series for unemployment rates in LGAs and figure 7.1 plots these trends from 1998 to 2008. Some important trends emerged during this decade. Unemployment time series from 1984 to 1996 showed the major impact of national and metropolitan economic recessions on LGAs in Western Sydney with a very significant gap opening up between LGAs experiencing major job losses in manufacturing and those like Baulkham Hills, Camden and Hawkesbury on the outer fringes. Overall, there was some closing of this gap between LGAs in Western Sydney during periods of relative economic stability but more volatility during the economic recessions.

- Figure 7.1 shows the impacts of economic prosperity since 1998. Unemployment rates fell throughout Western Sydney with significant reductions in LGAs with the highest rates (Fairfield and Auburn). By 2000 unemployment rates, although continuing to fluctuate from year to year, were more clustered in Western Sydney than at any time in the preceding two decades and by 2002 only Fairfield and Campbelltown recorded rates close to twice the metropolitan average.

Figure 7.1 Western Sydney unemployment 1998 to 2008



Note: from 2003, DEWR broke Blacktown LGA into 3 sub-regions (see key)
Source: Australia: Department of Education, Employment and Workplace Relations, Small Area Labour Markets, DEEWR, Canberra (quarterly, various years)

- By 2005 the gap between LGAs in Western Sydney with highest and lowest rates was the smallest since well before the major recession of 1981. Yet by 2007 Fairfield and Auburn LGAs maintained rates nearly twice the Sydney average of 4.6% while Baulkham Hills and Hawkesbury maintained among the lowest rates of unemployment in the SMA.

7.1.3 Unemployment in Western Sydney is highly localised

While LGAs are useful for comparing unemployment changes over time they bury a significant amount of variation within them.

- In 2003, DEWR split Blacktown LGA into its three ABS sub-divisions. With by far the largest workforce (126,651 persons), aggregate rates for Blacktown LGA obscured highly significant labour market differences between its northern and southern districts. Bordering Baulkham Hills, Blacktown North shows unemployment rates similar to its northern neighbour and well below Sydney averages. Blacktown South West, however, consistently records the highest DEWR rates in Western Sydney, well above those of Auburn and Fairfield – effectively, Western Sydney's whole range of unemployment experiences occur in localities within Blacktown LGA.

- At the 2006 census, unemployment in Blacktown South-West stood at 9.4%, the second highest rate in Western Sydney after Fairfield. Female unemployment in Blacktown South West (10.1%) was the highest in Western Sydney and twice the Sydney average.

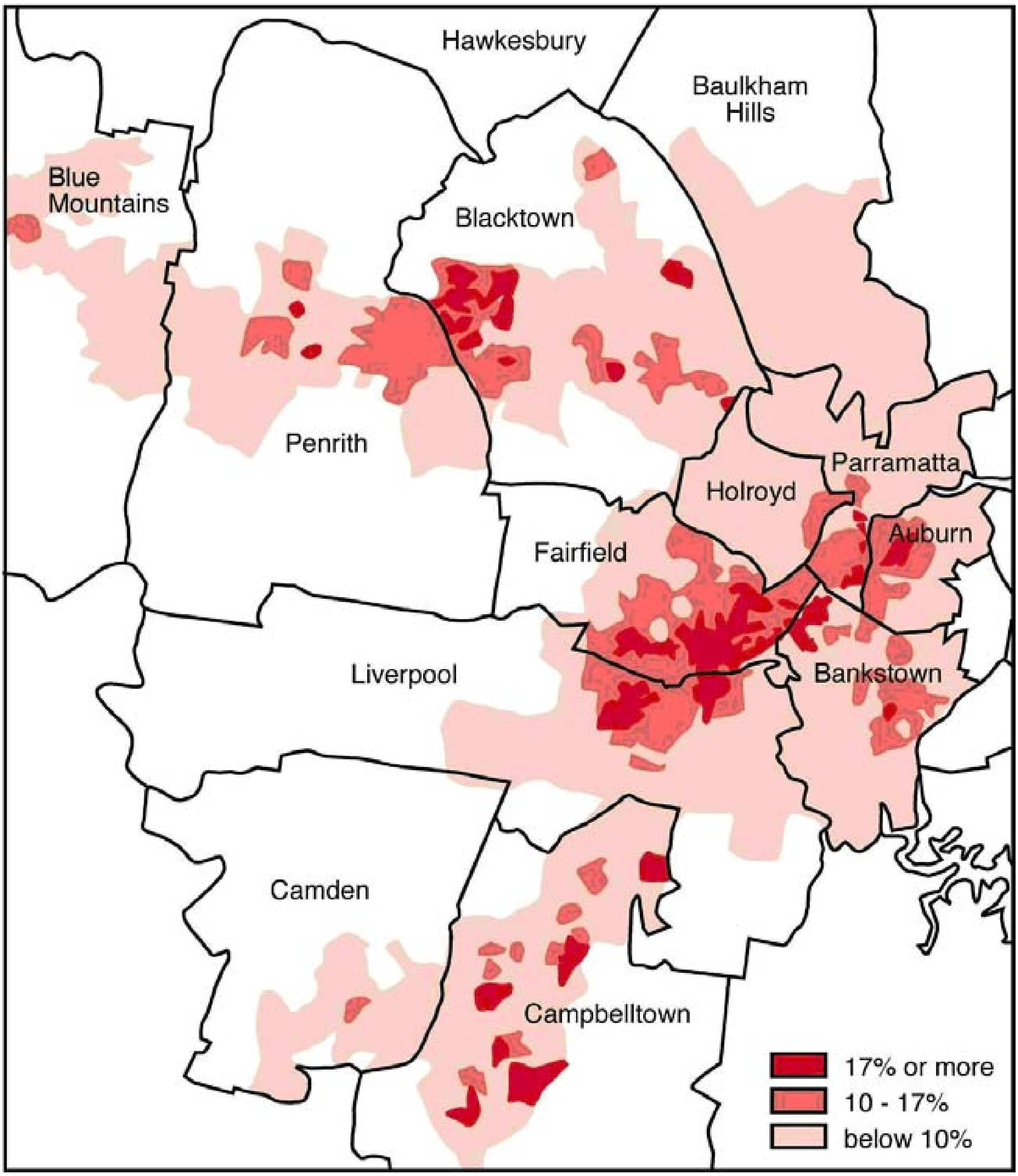
- Census data at collector district (CD) level from 1996 to 2006 show that high unemployment rates in Western Sydney are a highly localised phenomenon.

- In 1991, 1996 and 2001, the same local clusters of high unemployment persisted in suburbs such as Auburn, Cabramatta-Fairfield and parts of Liverpool, Campbelltown and the south-western suburbs of Blacktown LGA (figure 7.2).

- This high degree of localisation remains in 2006. Clusters of census collector districts (CDs) recording rates above 18%, more than four times the Sydney average, remain in north and central Auburn, Villawood, South Granville-Guildford, Fairfield, Cabramatta and Bonnyrigg, the Green Valley district, St Marys and in Dundas Valley (northeast Parramatta). Extremely high rates, rising above 26%, are found in CDs such as Claymore and Airds/Ruse in Campbelltown and Whalen-Tregear and Bidwell-Shalvey in southwest Blacktown, all of which contain large public housing estates (see figure 7.3 for an illustration).

- People in these localities have shared little in the labour market impacts of the decade of overall metropolitan prosperity since the mid 1990s. These are the localities in which hard to place people have been concentrated.

Figure 7.2 Unemployment in GWS 2001 by census collector districts



Source: Derived from ABS, A Social Atlas of Sydney at the 2001 Census, ABS, Sydney, 2003.

The explanation for these remarkably consistent patterns of labour market dislocation from the early 1990s is complex but three things seem clear.

1. The presence or absence of growing employment opportunities in or near these localities provides little explanation for persistent high rates of unemployment. In 2006, for example,

Auburn remains one of Sydney's clear job surplus areas with dramatic job shedding in manufacturing offset by growth in wholesaling, retailing and associated business services, with falling unemployment rates and rising participation rates overall. In addition, the LGA is adjacent to Bankstown and Parramatta, other LGAs where there are more jobs than resident workers. Despite the recent improvements, however, many Auburn residents continue to experience low access to employment opportunities which surround them. Further, their skill profiles and, in some cases, CALD background effectively lock them out of employment opportunities both locally and in the wider metropolis.

2. The strong correlation continues between areas of high unemployment and the larger clusters of public housing in Western Sydney, for example in Blacktown, Liverpool and Campbelltown.

3. CDs with high proportions of recently arrived CALD migrants, and some of those with relatively high Indigenous populations (for example in south west Blacktown), continue to show some of the highest rates of joblessness at the census. The limited research evidence available at grass roots levels suggests unemployment rates can often fall quite rapidly for these groups over time in some localities once access to the labour market improves. Much further research is needed on how local labour markets have really operated after a decade or so of prosperity in the urban economy as a whole.

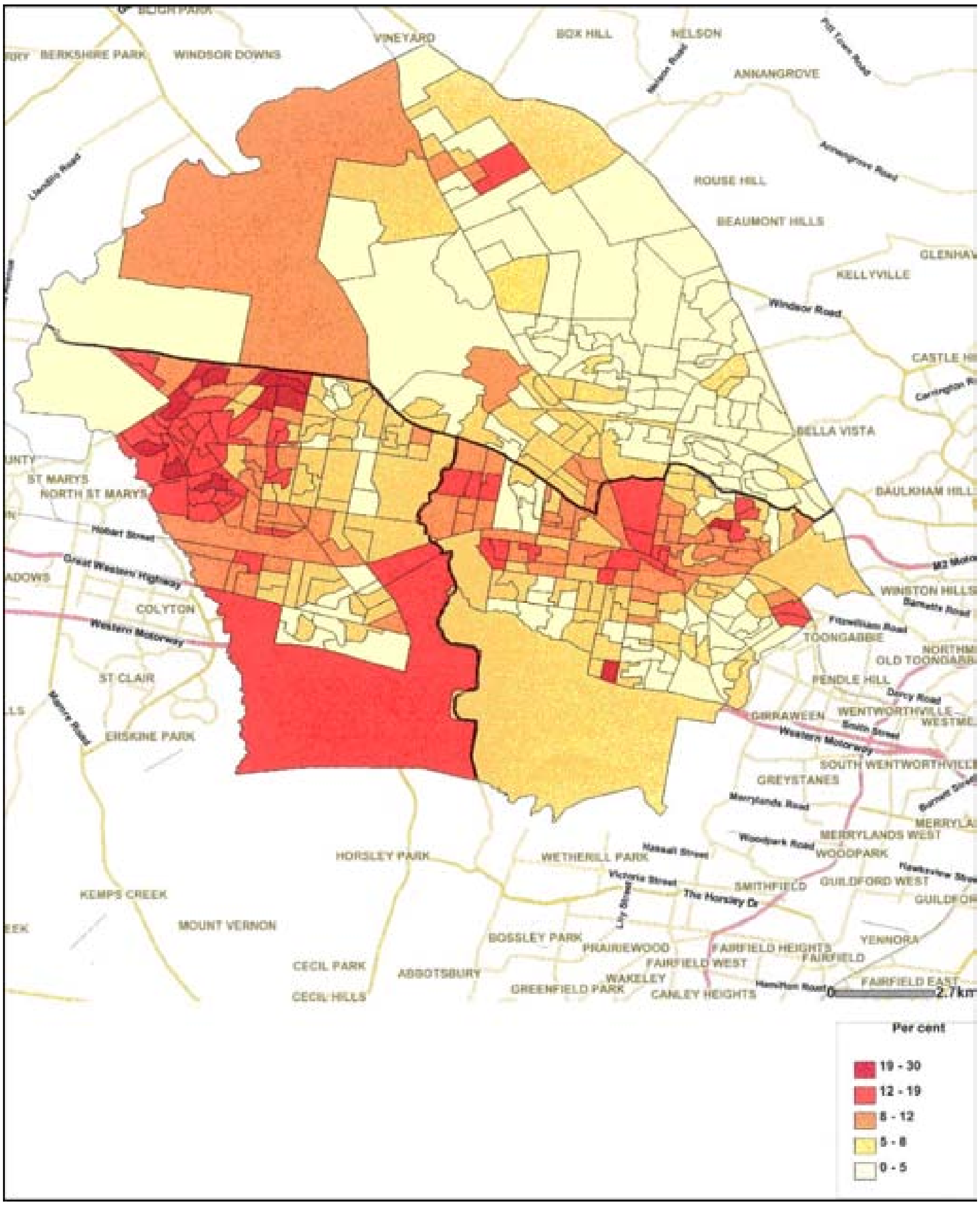
In short, vulnerable people and places remain in Sydney's complex outer suburban labour markets. Regional and local unemployment rates have to be approached with caution despite their widespread use as barometers of relative health in the labour market and indicators of people's access to jobs. Four things are crucial in considering employment strategies for Western Sydney.

1. Both the continued suburbanisation of service employment after the early 1980s and the emergence of Western Sydney as Sydney's principal area of manufacturing production contributed significantly towards growing regionalisation of employment for Western Sydney residents but this process appears to have stalled by 2001.

2. Regional growth in employment opportunities alone does not address problems of labour market access experienced by some residents in particular localities.

3. Regionalisation of the Western Sydney labour market has reflected increased regional self sufficiency in employment and desirable reductions in long distance commuting, but also lack of access (because of skill and experience levels as well as transport problems) by many residents to employment opportunities in the wider metropolitan labour market, especially those based on information and business services.

Figure 7.3 Unemployment in Blacktown LGA 2006 by census collector districts



Source: Australian Bureau of Statistics, accessed at www.censusdata.abs.gov.au/

4. While this study shows that creating enough jobs to meet future labour force growth will be a crucial challenge for Western Sydney over the next two decades, access to employment both locally and in the wider regional labour markets for Western Sydney residents will depend not simply on creating jobs of sufficient variety, but also on improving people's access to social infrastructure and on upgrading skills, qualifications and job experiences within labour pools.

7.2 Hard to place labour

7.2.1 Greater Western Sydney is a national barometer

Whatever challenges the nation faces in bringing the hard to place workers into the workforce, these are heightened in Western Sydney. The dominant policy approach regarding what constitutes full employment, discussed earlier, disguises the fact that workforce participation in Western Sydney is characterised by areas of high, enduring unemployment and underemployment. There is also reliance in both West-Central and North-West sub-regions on sectors, such as manufacturing, transport, construction and retailing that are particularly sensitive to trends in the broader economy.

Having looked at unemployment with specific reference to Western Sydney above, this section considers applicable lessons from existing national and, to a lesser degree, international developments.

As outlined in earlier chapters, population growth has a direct positive effect on employment growth. Neither population growth nor overall economic growth is sufficient, in itself, to ensure opportunities will open up for all those less equipped to participate in the workforce. There are various factors at play in this respect including: a mismatch between education and skill levels and labour market demand; family circumstances; and personal barriers. The analysis earlier in this chapter shows a degree of fragility in the Western Sydney labour market based on these issues and problems of access to employment opportunity.

In light of these circumstances, employment strategies need to give due consideration to securing jobs for those young people, women, Indigenous persons and some people from other CALD backgrounds who are at best marginally attached to the workforce. This is sound both as a matter of economic management as well as for social inclusion reasons.

7.2.2 Overcoming barriers to employment

As indicated in chapter 2, certain groups are disproportionately under-represented in the Western Sydney workforce, notably: women, mature age workers, young people, those from non-English speaking backgrounds and Indigenous persons.

The Allen Consulting Group (2005), reviewing the available international and Australian literature, developed a set of strategies appropriate to specific population groups (see table 7.3). This review concluded that the policy strategies with the greatest potential to increase aggregate labour force participation are actions to improve education and skills, health outcomes and child care services, delay retirement and reform the tax and welfare systems. The policy strategies that have the greatest potential to increase social equity are programmes specifically targeted at disabled, indigenous and long term unemployed individuals (ibid).

Subsequent policy developments in Australia have been consistent with these findings. This is particularly so when it comes to early intervention, child care and to some degree health. These strategies are largely dependent upon action by federal and state governments. Regional initiatives remain critical, however, in ensuring the value of relevant policy (and funding) commitments is realised in policy implementation, in promoting complementary activity at the regional/local level and in developing complementary home-grown initiatives.

7.2.3 The human capital agenda

In 2006 the Council of Australian Governments (COAG) identified the human capital agenda as the next critical phase in national economic reform (Council of Australian Governments 2006). Essentially, it was agreed that enhancing workforce participation and productivity will require the development of the capabilities of the Australian people, our human capital (Council of Australian Governments 2005).

The focus on human capital is hardly surprising. The OECD had previously identified human capital as "the fundamental building block for growth strategies in the knowledge based economy" (OECD 2005).

The Human Capital Agenda recognises that any substantial further lift in workforce participation and productivity is dependent upon properly developing people's skills and capacity. The natural emphasis is therefore upon education and skills development.

Table 7.3 Policy strategies to increase participation across target groups

Policy Strategy and Specific Policies	Relevant Target Group(s)
1 Delay retirement ▪ Tighten pension eligibility rules ▪ Change rate of pension accrual ▪ Increase age of access to superannuation	▪ Mature age
2 Undertake tax and welfare reform ▪ Reduce Effective Marginal Tax Rates ▪ Expand social security services (including, in particular, labour market programs)	▪ All groups
3 Improve child care services ▪ Increase child care facilities and subsidies ▪ Paid parental leave	▪ Women
4 Improve educational attainment and skills ▪ Skill development programs ▪ Increase educational attainment	▪ All groups
5 Improve health status (including OHS plans for current workers, rehabilitation plans and health education for younger workers)	▪ Mature age ▪ Disabled ▪ Indigenous ▪ Long-term unemployed
6 Make work arrangements more flexible	▪ Mature age ▪ Women ▪ Disabled
7 Change attitudes (of employers about potential employees and individuals about the nature of working life)	▪ Mature age ▪ Disabled Indigenous

Source: The Allen Consulting Group.

7.2.4 Education and training: the keys to the labour market kingdom

Education and training are the portal to secure employment, higher incomes and social well being. Over recent years an increasingly strong consensus has emerged as to the key strategies for raising educational attainment and skill levels. Indicative of this is the joint position paper released prior to the 2020 Summit under the banner of the National Skills Collaboration[4].

[4] The National Skills Collaboration consists of the Australian Industry Group, ACTU, Australian Education Union, Group Training Australia and Dusseldorp Skills Forum.

The paper, which was subsequently supported by the Business Council of Australia (2008), proposed key steps for improving the quality and capacity of Australia's workforce (National Skills Policy Collaboration 2008). These included:

- A long term strategy to improve Australia's investment in education and training
- Lifting Year 12 and Certificate III completion rates
- A renewed focus on apprenticeship completions
- A review of the traineeship program
- Skill infrastructure partnerships between public and private sectors
- A national vision and consensus on the future of TAFE.

These are developments that warrant active consideration by regional authorities and other local stakeholders.

Traineeships, for example, have exploded in popularity. Allowing for employment growth between 1996 and 2005 we would have expected traineeships to number around 38,800, up from 33,500 in 1996. The actual number in 2005 was 227,300 (Cully 2006). The prevalence of traineeships is such that they represent some 25 percent of all employees in both the retail and hospitality sectors – giving rise to some question as to whether they are so much a training initiative, as originally intended, or more akin to a labour subsidy program, although this does not bear greatly on our considerations here.

Given the importance of these two sectors to the North-West and West-Central sub-regions, enhancing the effectiveness of public expenditure on traineeships is of obvious local benefit. Similarly, improvements in apprenticeship recruitment and completion rates and more extensive, high quality education-industry partnerships have potentially significant local implications.

Clearly, greater investment in education and health infrastructure will lift employment demand and increase regional economic activity. While it has been noted that investment in such social infrastructure increases in periods of high, sustained growth, the question for the West-Central and North-West regions is what opportunities might exist for encouraging investment in social infrastructure beyond normal growth induced provisioning.

7 Unemployment and problems of labour market access

The importance of local knowledge and activity in skills development that is employment responsive (including for low skilled workers) is underlined by the conclusions of a four year study commissioned by the National Centre for Vocational Research (Richardson and Teese 2008). Among the key messages abut the Vocational Education and Training (VET) sector emerging from that study the following are particularly relevant:

- Greater local interaction between industry and VET will improve understanding of the market, while at the national and state levels policy makers must learn to live with uncertainty

- While higher level skills are increasingly required by industry, so VET must re-focus on middle level and advanced training, although this should not be at the expense of people needing basic training. VET plays a vital and unique role in providing opportunities to the many people who are following unconventional life paths, many of whom are relatively disadvantaged

- The VET system can respond to the fluidity of the training landscape through both community partnerships and market based models of provision. These multiply industry links, create more employment incentives to training, and have a greater focus on individual need through inclusiveness strategies

- A well skilled future cannot be constructed by the VET sector alone. Improved quality of schooling will create the platform for VET to do its distinctive and value adding work in skills training, while stronger employer commitment to training will make greater use of the workplace as a site for skills development.

It should be noted that existing initiatives across the North-West and West-Central Regions reflect key aspects of identified success and suggest that local programmes utilising such lessons can have a positive impact notwithstanding the difficulties and limitations arising from inadequate state and national policy settings.

At Ropes Crossing Delfin Lend Lease has worked closely with local authorities, educational institutions and employment service providers to deliver an estimated job every working day since the establishment of the Skilling and Employment Centre in April 2005. The Ropes Crossing development planned to generate 5000 new jobs in addition to the anticipated 8000 jobs generated in the creation of the Ropes Crossing development itself and the adjoining communities. The Centre was established several years in advance of the development itself. While confronting a number of the challenges identified in this report – including for example, inadequate transport and a need to deliver an estimated 20 jobs per hectare – the Centre's successful job placement rate has been amplified by high levels of containment. Importantly, the Centre's brokerage role has been backed by explicit contractual and resource measures such as local employment clauses and a commitment to multi-year financial support. That said, while such success can be replicated it is not in itself sufficient.

7.2.5 Lifting the numbers of engaged young people

A 2007 OECD report on the transition of young people from school to work observes that high youth unemployment remains a serious problem. The authors suggest that this reflects a variety of factors, including the relatively high proportion of young people leaving school without a basic education qualification, the fact that skills acquired in initial education are not always well adapted to labour market requirements, as well as general labour market conditions and problems in the functioning of labour markets (Quintini et al 2007). The OECD has maintained a strong interest in this area for well over a decade, during which time it has built a strong picture of what does, and does not, work.

More recent work tends to reinforce the conclusions drawn by OECD (2000), that lifting transition rates depends upon a comprehensive set of arrangements that, inter alia, increase educational attainment, provide workplace learning opportunities, and ensure that personal support is available for those young people who may need it.

The 2007 review identifies the characteristics common to successful programs:

- Early action is particularly important for young people as those without work experience are generally not entitled to unemployment benefits or other welfare transfers.

- In terms of content, job search assistance programmes are often found to be the most cost effective for youth, providing positive returns on both earnings and employment. On the other hand, some employment subsidy programmes do yield positive returns.

- Training programmes should be designed in connection with local or national labour market needs. In this respect, mobilising and involving the private sector and communities to assess local or national demand for skills and community needs is most important to project design.

- Targeting of the programmes is also crucial. For instance, there is a need to distinguish between teenagers and young adults and to focus on early school drop outs. Specifically, the most desirable solution to the employment problems of teenagers is to help them to remain in school and acquire educational qualifications, whereas for young adults, help to acquire work experience is more important.

- Tight work search requirements tend to encourage early exit from unemployment, as much for youths as for adults.

- Programmes that integrate and combine services and offer a comprehensive package of initiatives seem to be more successful.

- Greater involvement of social partners, as well as the public authorities at all levels, enhances the effectiveness of programs. A tightly controlled system of certification to ensure the quality and relevance of training programmes may also contribute.

The 2007 reports also highlight the potential value of youth guarantee approaches while cautioning that their value varies with the strength of the supporting structures built into the programme design and implementation; evident, for example, in the differences between Finland's Youth Guarantee and that for Sweden.

These approaches essentially guarantee every young person a place in education, training or employment until a designated age. Inherent in the guarantee are legislative provisions, increased investment in education and training, and the introduction of complementary programmes and support mechanisms. The key features of the Nordic youth guarantees for early school leavers and unemployed youth are:

- a focus upon prevention as well as remediation
- integrated education, labour market and welfare policies

- locally managed delivery mechanisms that track early leavers and are able to co-ordinate services across several portfolios and several levels of government (Spierings 2001).

The OECD research supports work done elsewhere. In Australia, organisations such as the Dusseldorp Skills Forum took these ideas up early, supplementing them with their own research and substantial demonstration projects (see www.dsf.org.au). As early as 1999, the federally funded Australian Student Traineeship Foundation (ASTF) put forward a comprehensive proposal incorporating the international lessons (Australian Student Traineeship Foundation 1999). The strategy was built upon community partnerships as a focal point for regional activity.

Several programmes that were adopted indicated the potential benefits of such an approach. The ASTF itself spearheaded the introduction of school-industry partnerships which saw an initial target of 2500 structured work placements for senior school students break the 100,000 annual student placements mark within the five years from 1995.

Between 1999 and 2001 the Dusseldorp Skills Forum guided the establishment and development of six 'regional youth commitments' across three states. Together they covered nine local government areas, 100 secondary schools and over five percent of the Australian population. A review of this initiative found that the outcomes for early school leavers improved by more than ten percent compared to the national average (Kellock 2005).

Over recent years, reforms to post-compulsory education and training arrangements in most states have adopted the principal elements of these approaches; though NSW is only now tentatively laying out similar plans. Successive federal governments have also recognised the benefits of these approaches in a series of programme initiatives, including the former federal government's Careers Advice Australia and its network of Local Community Partnerships.

While these have been genuinely positive developments, they fall well short with respect to regulatory arrangements, levels of investment, and programme quality. This is evident in the thinly spread levels of personal support, local coordination and ultimately in the mixed outcomes for young people.

7.2.6 A buffer stock strategy

It is apparent that growth alone will not soak up those workers in West-Central and North-West who currently find it difficult to establish a secure foothold in the labour market. The approaches outlined above suggest that there are viable options for particular groups. Education and training are the drivers combined, where necessary, with social and personal support.

While for most, government intervention is warranted, it is broadly limited to investment, human capital development (health, education and training) and targeted programmes (including employment services). However, there is a smaller group of economists who argue for a more direct form of intervention based on a commitment to full employment understood as having a job available, at living wages, for everybody who wants to earn an income (Mitchell and Muysken 2008). The Full Employment Framework reflects the employment emphasis that dominated policy thinking in the period post World War II through to the mid 1970s. It is predicated upon the maintenance of full employment as the "collective responsibility of society, expressed through the macroeconomic policy settings" (ibid). Their argument, in part, is that the benefits are both economic and social, reflected in high levels of social cohesion. This is contrasted to the Full Employability Framework, which the approaches outlined above more closely resemble.

This is not the place to enter into this contested economic debate. However, the point worth noting is that those who espouse the Full Employment Framework argue that,

> "the major reason the economy was able to sustain full employment was that it maintained a buffer stock of jobs that were always available, and which provided easy access to the least skilled workers in the labour force."
>
> ibid

The buffer stock positions were available in the private sector but the public sector was a critical source, operating as the employer of last resort which "absorbs shocks which occur from time to time" (Ormerod 1994, cited in Mitchell and Muysken 2008).

These are the planks for the development of the Job Guarantee:[5]

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[5] Michell and Muysken (2008) note that the Job Guarantee proposal was conceived independently by Mitchell (1998) and W B Mosler (1997-98).

> "Under the JG, the public sector offers a fixed wage job to anyone willing and able to work. This buffer stock expands (declines) when private sector activity declines (expands). The JG thus fulfils an absorption function to minimise the real costs currently associated with the flux of the private sector. When private sector employment declines, public sector employment will automatically react and increase its payrolls. The nation always remains fully employed, with only the mix between private and public sector employment fluctuating in response to the spending decisions of the private sector."
>
> (Mitchell and Muysken 2008)

While the Job Guarantee is conceived as a function of macro-economic policy, this is not to say that the thinking behind such an approach does not have some bearing on approaches to employment in a significant regional labour market such as that across Greater Western Sydney.

7.2.7 Looking ahead to the 'green collar economy'

Adopting a pro-active approach to employment and employment preparedness has the potential to get ahead of the game by using the downward employment cycle to invest in human capital development. This is particularly important for marginally attached workers and for those existing, often older, workers who are either low skilled or whose skills are likely to become outdated.

This point is underlined by a major report by the CSIRO (2008) arguing that economic growth can be decoupled from environmental impact: "with the right policies we can grow our economy and simultaneously reduce our environmental impact". The CSIRO modelling indicates that a rapid transition to sustainability would potentially have little or no impact on aggregate national employment, with projected increases in employment of 2.5 to 3.3 million jobs over the next two decades.

However, if the transition to a low carbon sustainable economy is to be achieved while also generating new jobs as well as the necessary transformations in existing occupations (affecting an estimated 3.25 million workers in industries that have a high environmental impact), it will require a massive mobilisation of skills and training (ibid).

Not surprisingly, and as noted in chapter 1, several of the high materials flow, high carbon polluting industries identified by the CSIRO represent high employment industries in both the North-West and West-Central regions: manufacturing, transport, construction among them.

The authors of the CSIRO report note that changes will not occur automatically through market forces (Hatfield-Dodds et al 2008). The direct implication is that there is a place for government intervention and social partnership (CSIRO 2008). These include but are not restricted to human capital development. Importantly, they depend heavily on substantive collaboration between universities, TAFE and training providers. As is the case with improving transition rates, they reinforce the need for education to be a primary focus in building employment capacity and lifting workforce participation rates. Clearly, maximising the potential benefits of adjusting successfully to climate change is largely dependent on getting the national policy settings and investment strategies right. At the same time, it should be stressed that pro-active regional strategies are critical: not only to be able to take full advantage of national developments, but also to boost local opportunity even where national activity is inadequate or lagging.

In this respect, there are worthwhile examples emerging overseas. One such is the Mayors' Initiative on Green Manufacturing developed by the Mayors of Minneapolis and St Paul (CDC Associates 2008). This is a partnership led by the city governments, the Blue-Green Alliance, Sierra Club and the United Steel Workers. The initiative seeks to establish the region as a national leader in "promoting and developing green manufacturing technologies and products while creating family supporting jobs" (ibid). It is built upon growth and opportunity in green manufacturing; with an emphasis on building products, renewable energy and transportation.

7.3 Conclusion

Improving access to employment within Western Sydney requires a web of arrangements explicitly addressing the question of hard to place workers which this chapter has shown are concentrated in particular localities. These arrangements would include:

1. laying an educational platform for workforce participation
2. providing opportunities for gainful employment (and training) of those who are generally regarded as comprising the buffer stock in the regional labour market
3. delivering targeted assistance and support for those who need it.

Two significant requirements are: first, a mechanism for ongoing monitoring of the nature and scale of marginal workforce attachment within the region-wide context; and second, a more substantial regional role in brokering new ideas for lifting the workforce participation of those currently regarded as hard to place both in the regional labour market and wider metropolitan area.

In the next chapter we re-examine predictions for the sub-regions including an examination of assumptions and projections from the Transport Data Centre.

8 Population and employment forecasts

This section has three objectives: to summarise population and employment forecasting methodologies, to assess sub-regional employment forecasts and to look at other possible scenarios and their implications.

8.1 Population and employment methodologies

The Department of Planning models employment in two ways. First, long term population forecasts are prepared for each statistical local area in NSW. These forecasts take account of ABS forecasts, growth trends, demographic change, and local constraints to accommodate population growth. The forecasts are adjusted within the metropolitan area by the Metropolitan Development Program, which identifies capacity for new dwellings at a local area scale for established and greenfields areas. The population forecasts for an individual SLA or sub-region/region are then used to calculate employment capacity targets (i.e. physical space such as hectares of employment land and square metres of commercial floor space) by using assumptions about the number of residents in the workforce within the specified areas.

Second, the Transport Data Centre (now Centre for Transport Planning and Product Development in MoT) has extrapolated data trends by travel zones for metropolitan Sydney based on time series trends for 26 industries to 2031. This analysis provides estimates of employment growth by industry sector. These employment estimates are then converted into floor space requirements, based on square metres per employee. The Department of Planning is establishing the Employment Lands Development Programme to better monitor and forecast employment lands supply and demand.

Employment growth in the West-Central and North-West sub-regions to 2031 will be driven by external and endogenous factors. External factors include:

- Sydney's share of national population growth and demographic change
- National and metropolitan economic growth rates
- Macro-economic variables including interest rates and exchange rates
- Sydney's economic competitiveness in globally competitive industries
- Changes in energy prices.

The two sub-regions compete with other sub-regions as well as with other city-regions for investment and new households. Endogenous factors influencing employment growth include:

- New land supply for employment and residential development and the economics of renewal
- The attractiveness and competitiveness of new housing for different socio-economic groups
- Competitiveness of sub-regional industries particularly the development of globally competitive industrial clusters and sub-regional skills base
- Capacity and competitiveness of infrastructure including transport, telecommunications, research and education, energy and health
- Territorial competence
- Firm and household locational preferences.

8.2 Assessment of forecasts

An assessment of the sub-regional employment capacity targets for the two sub-regions is as follows.

8.2.1 West-Central

A case could be made to suggest that Metropolitan strategy population growth targets for West-Central are high and employment capacity targets are low. The West-Central sub-region is allocated an additional 150,000 residents between 2001 and 2031. The shortage of large surplus industrial sites in inner city areas as well as political resistance to urban consolidation in inner suburbs have focused attention on West-Central as a region with potential to accommodate above average population growth rates. However, assumptions about higher density residential development may be difficult to realise. Initially much of the high density population growth in West-Central was to be accommodated along the Parramatta Road corridor. More recently, the NSW government appears to be backing away from this area as a high priority corridor for strong population growth.

In contrast to an ambitious population target, the employment capacity target may be low, with only an additional 61,000 jobs expected in West-Central. The draft West-Central sub-regional strategy forecasts that the area will accommodate 95,000 new dwellings. With around 1.2 jobs required per additional dwelling, this indicates that around 114,000 jobs will be required to accommodate the additional labour force. As a consequence of a significant increase in the labour force and a moderate increase in jobs, employment self-containment in the sub-region is expected to decline. This contradicts one of the key principles of the Metropolitan strategy, which is to strengthen sub-regional employment self containment.

The population targets in established areas (i.e. excluding greenfields development) for West-Central (NSW Department of Planning 2007c) are higher than for any other sub-region with around 95,500 new dwellings by 2031, compared with 60,000 for North-West and 55,000 for Sydney City, the next highest sub-regions. As noted, much of this population growth is expected to be accommodated in the Parramatta Road corridor, as well as around railway stations and in redeveloped public housing estates such as Bonnyrigg.

The sub-region is well positioned to capture new opportunities from urban renewal, because of demographic change, old housing stock and relatively good public transport access to the Sydney CBD and other major employment areas. Auburn, which is forecast to accommodate around one third of West-Central population growth, is forecast to experience the highest growth with its population almost doubling. Parramatta, Bankstown and Holroyd are forecast to experience moderate growth. The sub-regional strategy forecasts that Fairfield, with an ageing population, slow growth local economy and lack of redevelopment sites, is expected to experience population decline.

One key assumption appears to be that industrial restructuring will continue to result in job losses in employment lands in West-Central. Over 90% of all net job growth, predominantly services based jobs, is predicted to occur in the five strategic centres of West-Central: Parramatta, Westmead, Sydney Olympic Park, Bankstown and Bankstown Airport-Milperra. Strong employment forecasts for Parramatta, Sydney Olympic Park and Westmead, as well as moderate growth forecasts for Bankstown and the specialised centre of Bankstown Airport/Milperra appear realistic and achievable, although Bankstown may be too low. On the other hand, there may be opportunities to encourage redevelopment of strategic brownfields sites of West-Central including in Smithfield-Wetherill Park, Chullora, Camellia and Rydalmere. New developments at Greystanes and Pottsville Reservoir will also stimulate net job growth. Strategies to stimulate job growth outside the strategic centres include broadening restrictive industrial zonings to encourage more office type developments, improving amenities in brownfields areas (e.g. childcare centres and retailing services) to encourage new investment, encouraging site amalgamations and more intensive utilisation and remediation of older sites.

Increasing employment lands prices in established areas (driven by scarcity), increasing real energy prices, climate change responses and possible infrastructure investments such as the M4 East, may facilitate new activity and employment stabilisation in older employment lands areas.

8.2.2 North-West

Strong population growth in the North-West is an important driver for the sub-region's employment growth. The sub-region is forecast to accommodate close to 300,000 new residents by 2031. A growing consumer market, including a significant segment with high incomes, will spin off substantial local employment opportunities. From 2001 to 2031, high population growth is forecast for Blacktown and Baulkham Hills, with 43% and 33% forecast sub-regional population growth to be accommodated in these two localities respectively. Penrith is forecast to accommodate moderate growth, whilst Blue Mountains and Hawkesbury are forecast to grow relatively slowly. This allocation of forecast population growth between LGAs is defendable under most scenarios. Both Baulkham Hills and Blacktown are becoming more centrally linked to the whole metropolitan area and both have significant greenfields areas designated for urban development. Penrith also contains new areas for urban growth, including the ADI site (which it shares with Blacktown) but it is more distant from other major centres. Blue Mountains, with world heritage listed sites, and Hawkesbury, with a significant proportion of flood prone land, have significant physical constraints on growth.

The North-West's strong population forecasts are widely seen as realistic. The sub-region has experienced strong population growth and is increasingly well connected with some infrastructure improvement. However, the sub-region may fall short of the 300,000 growth forecast for a number of reasons. Factors that may slow population growth below the forecast include:

- Reduced international and domestic migrant flows to Sydney due to a lagging metropolitan economy
- Out-migration driven by ageing of the population and high relative property prices
- Slow release of new residential areas
- Increased urban densities in inner areas.

The North-West sub-regional strategy forecasts that net employment will increase by 130,000 jobs. The sub-region is expected to grow more jobs than any other sub-region in Sydney. The implications of this forecast are significant. There is no precedent for an outlying area of metropolitan Sydney to have the largest share of the basins' total job growth. To achieve this outcome will be a major challenge.

The draft North-West sub-regional forecasts reflect basic assumptions regarding market dynamics and policy directions in regards to the growth of metropolitan Sydney. The key assumption is that dispersal of jobs to the northwest will outweigh the longstanding trend of centralisation of jobs around North Sydney, Sydney CBD and Sydney Airport. A key organising principle of the Metropolitan Strategy - City of Cities is a commitment to the transformation of Sydney into a multi-centred Sydney with stronger employment self-containment across all Sydney's sub-regions.

The primary employment focus of the Metropolitan Strategy is to transform the metropolitan economy, build on the success of the 'global economic corridor' and to grow more jobs across the metropolitan area, particularly in Greater Western Sydney; with the focus for job growth increasingly shifting to Greater Western Sydney. New jobs are to be compacted in strategic centres including in business parks. The Metropolitan Strategy forecasts assume slower employment growth rates in the City of Sydney LGA, with its share of total metropolitan employment forecast to decline from 21.5% in 2001 to 19.5% in 2031 (Transport Population Data Centre 2006).

Job dispersal to northwest Sydney and slower growth for central Sydney (particularly City of Sydney LGA and North Sydney) are expected to be driven by a number of factors. These are now elaborated.

8.2.3 Population growth and agglomeration economies

Selective centres and sub-regions are attaining a critical mass of economic activities which reinforces future growth. Larger populations and population growth are driving new opportunities for business services, retail, community and personal services, especially in suburban centres such as Penrith, Castle Hill, Blacktown and Rouse Hill.

8.2.4 Accessible centres

Improved public transport and increased investment in convenient parking facilities are occurring in emerging centres such as Rouse Hill and Castle Hill. These centres are accessible to a relatively large and growing population catchment. Building a retailing base, which encourages more investment in transport infrastructure, they are becoming more attractive for retail, commercial, hospitality and other service investment to these new centres.

One risk to attaining the North-West employment target is higher employment growth in the Sydney CBD than forecast. The Metropolitan strategy includes a moderate job forecast for the Sydney CBD. New commitments from the NSW government such as expanding the commercial office component of Barangaroo indicate that more attention is being given to reinforcing the historical centre rather than encouraging dispersal to outlying centres. Greater market interest in the Sydney CBD than forecast and slower delivery of new transport infrastructure to the northwest may result in slower job growth in the sub-region than forecast. This would reinforce the mono-centred city rather than the policy of transforming Sydney into a multi-centred city.

8.2.5 Employment lands and the growth of business parks

The North-West sub-region is forecast to accommodate the biggest share of new employment lands in Sydney. Most of the new investment around the Western Sydney Employment Hub involves low employment density development, particularly in warehousing and distribution activity resulting in employment densities of around 10 to 20 jobs per hectare (Greater Western Sydney Economic Development Board 2006, p. 12). To increase employment outcomes in accessible locations, more diverse and higher order employment opportunities are required to complement the growth of lower employment density transport and logistics investments.

One solution is to encourage greater diversity of economic activities through establishing a major new business park or business parks in the North-West. Business parks are premium employment lands with high employment densities, accommodating technology-based and other high value-adding firms. Business parks have been the most rapidly growing employment areas in suburban Sydney over the past 15 years.

The business park market is expected to exhibit high employment growth in metropolitan Sydney to 2031. Between 1996 and 2001, employment in Sydney's major business parks grew by 6.6% p.a. (SGS Economics and Planning 2004, p. 93); and 6.3% p.a. between 1991 and 1996. According to Journey to Work estimates for 2001, 69,930 workers were employed in major business parks in Sydney in 2001. The Transport Data Centre adjusts these figures upwards by 10% to take account of under-enumeration in the Census i.e. to 76,923[6]. If employment grew at 5% per annum in these business parks between 2001 and 2006, Strategic Economics estimate that employment was 98,175 – or around 100,000 – by 2006. In order to plan for new business parks in Western Sydney to 2031, a range of employment outlooks should be considered. If higher growth rates are maintained at around 5% p.a. to 2031, then 332,500 jobs will be located in Sydney's business parks. If a lower rate of job growth of 2.5% p.a. occurs, then 182,000 jobs will be located in business parks in 2031. A baseline employment outcome of 250,000 jobs in business parks by 2031 (or around 10% of total metropolitan jobs) would be a useful guide for local and state planners. With business parks expected to grow jobs at a faster rate than strategic centres, the North-West is well positioned to capture new employment growth opportunities from new business parks.

The features which attract firms to business parks include the following:

- Zoning flexibility to encourage diversity and to meet the needs of individual owners and tenants. Many firms seek campus style accommodation with large floor plates, plentiful parking and opportunities to integrate research, manufacturing, management and distribution activities
- A sizeable labour force catchment containing a large proportion of households with knowledge based skills and competencies including scientific, technology, finance and management skills, as well as lower skilled workers including truck drivers, process workers and storemen
- Proximity to clusters of innovative firms and higher education facilities
- Quality amenities including childcare facilities, entertainment, recreational and cultural facilities
- Efficient transport, energy and communications infrastructure with good access for suppliers and customers.

The main criteria likely to be considered by state and local governments for the selection of new business park locations include:

- Proximity to the orbital road system and/or

[6] Based on unpublished data provided by the Department of Planning. The selected business parks are Macquarie Park, Sydney Olympic Park/Carter Street, Rhodes, Norwest, Frenchs Forest, Austlink, Greystanes, Australian Technology Park, Caringbah, Williamson Road.

- Location on existing and proposed public transport networks with efficient links to suppliers and customers
- Access to a significant residential labour force catchment
- Opportunities for efficient-energy use including plant design and reduction in car dependence
- Implementation measures to minimise waste and pollution
- Integration into regional industry and innovation networks.

The North-West sub-region is well positioned to meet industry requirements in a number of these including attractive greenfields sites, good road infrastructure and a large and diverse labour force. Some of the requirements need to be worked on, particularly planning for good public transport services, telecommunications and proximity to world class research and educational institutions.

Due to its growing professional and skills base, and improved accessibility, the North-West sub-region is well positioned to attract new business parks. If a policy and planning framework is put in place, the North-West could be expected to attract an additional 30,000 to 40,000 jobs into new business parks. Large possible sites include Box Hill, Marsden Park, Riverstone North and UWS Werrington. If the North-West is not successful in developing one or more major business parks, it may struggle to attain a net additional 130,000 jobs by 2031.

8.2.6 Improvements in transport infrastructure

The Sydney orbital has improved mobility and accessibility to and from Sydney's strategic centres and from other activity centres and residential areas. This is inducing investment in a broader range of locations in the North-West sub-region. All of the strategic centres have secured some benefits from the completion of the orbital network. They are better connected with each other and more accessible as employment centres from residential areas. However, the impact of rising real energy prices and greenhouse mitigation measures needs further investigation. On the one hand, higher energy prices have the potential to strengthen the multi-centred city strategy with more emphasis of clustering activities closer to each other and in proximity to rapidly growing areas. Conversely, higher energy prices may accelerate public transport investment, which may reinforce the attractiveness of existing centres and limit opportunities for more dispersed centres which are poorly served by public transport.

8.3 Alternative employment scenarios

Given the issues raised in the above sections it is considered that some alternative employment scenarios should be considered. In general, the view is that greater employment growth can be generated in the West-Central sub-region, while a more conservative employment growth estimate is appropriate for the North-West sub-region. Some revised estimates are contained in table 8.1.

Table 8.1 Alternative employment scenarios for the sub-regions

	2001 employment	2031 estimate		Revised 2031	
	2001 estimate	sub reg strategy forecast	growth	estimate	growth
North-West					
Baulkham Hills	53,000	100,000	47,000	90,000	37,000
Blacktown	83,000	128,000	45,000	113,00	30,000
Blue Mountains	19,000	26,000	7,000	26,000	7,000
Hawkesbury	24,000	27,000	3,000	27,000	3,000
Penrith	58,000	86,000	28,000	76,000	18,000
Total	**237,000**	**367,000**	**130,000**	**337,000**	**100,000**
West-Central					
Auburn	43,300	55,300	12,000	63,300	20,000
Bankstown	71,700	77,700	6,000	87,700	10,000
Fairfield	57,000	72,000	15,000	73,000	16,000
Holroyd	35,500	36,500	1,000	37,500	3,000
Parramatta	102,000	129,000	27,000	133,000	31,000
Total	**309,500**	**370,500**	**61,000**	**380,500**	**80,000**

Source: TDC, Urban Research Centre, Strategic Economics

8.4 Conclusion

This chapter has assessed the draft sub-regional employment forecasts for the West-Central and North-West sub-regions and considered a range of employment growth scenarios. One scenario considered that employment growth may consolidate further in West-Central and grow at a slightly lower rate in the North-West. In this case, the growth in employment in the North-West sub-region could be in the order of 100,000 jobs, whilst the equivalent figure for West-Central will be in the order of 80,000 jobs. The North-West sub-region is more likely to attain its employment capacity target of 130,000 additional jobs if policies to identify and develop new business parks are successful. This has significant implications and requires undergoing dialogue and action involving WSROC, individual councils, Greater Western Sydney Economic Development Board, the Department of Planning and the Transport Data Centre.

The following chapter makes an assessment of infrastructure needs to support the employment strategies.

9 Infrastructure

9.1 Introduction

A major key to expanding employment opportunities in the region is the provision of first-rate infrastructure. The link between infrastructure provision and economic development is widely acknowledged in the literature (see, for example, Eberts, 1990).

The public infrastructures needed to support employment generation are reasonably straightforward:

- An appropriate labour force needs to be available (education and training infrastructure)
- The labour force needs to be able to get to workplaces (people transport infrastructure)
- Material inputs and outputs need to be delivered (freight transport infrastructure)
- Stakeholders in the economy need to be able to communicate with each other (telecommunications infrastructure).

It is clear that Western Sydney does have not access to the range of infrastructure required to support a 21st century economy. Concerns with infrastructure were a common theme amongst informants consulted in this study. The inadequacies of Western Sydney infrastructure were also highlighted by a recent workshop sponsored by the Greater Western Sydney Economic Development Board.

The workshop identified the following as the main infrastructure issues.

- Inadequacy of public and freight transport infrastructure, particularly
    - north-south road access routes for both outer and inner Western Sydney
    - ‘pinch points’ on east-west road and rail networks

- Lack of access to ports with
    - inadequate road and rail capacity
    - no intermodal freight hubs

- Inadequacy of IT and broadband telecommunications

- Inadequate infrastructure planning
- Inadequacy of the arterial road network.

The State Infrastructure Strategy (2006/07 to 2015/16) which was recently refreshed by the NSW government has a range of major projects that address some of these issues, including:

- North West Rail Link (now the North West Metro)
- North West Transitway
- The development of 43 strategic bus corridors in the region
- The purchase of 412 buses for private contractors
- The delivery of 122 new outer suburban rail cars
- The south west rail link
- Extension of the rail clearways program
- Intermodal logistics centres at Enfield and Milperra
- Growth works in the South West and North West corridors of the Growth Centres.
- Extension to the M4 (not approved but in program).

However, the NSW government has frequently made infrastructure announcements that have not been carried through to completion. For example, a key railway project, the Epping to Parramatta rail link, was announced in 1998, received planning approval in 2002, but was postponed indefinitely in 2003. The project has now reappeared in the latest infrastructure plan as the Parramatta to Epping rail corridor with an asterisk - which means that it is not approved "but forms part of the $110 billion strategy to 2015-16".

Uncertainty in the nature and timing of infrastructure for Western Sydney is a major source of economic uncertainty for the region and an impediment to future employment creating investments.

9.2 Key infrastructure issues for the region

The background for considering the development of infrastructure in the region to support employment growth is dominated by four issues:

- The increasing price of transport fuels

- What Professor Ross Garnaut has so aptly described as the diabolical policy problem of climate change
- The desire expressed in the Metropolitan Strategy, for employment to be increasingly generated in centres
- The increasing knowledge intensity of the new jobs being created in the metropolitan economy.

These issues suggest that infrastructure aimed at increasing employment in the region needs to be directed towards:

- improving accessibility, especially by public transport where possible
- supporting the development of centres particularly those nominated in the Metropolitan Strategy
- increasing interactions between employees and knowledge generators in the region.

With these objectives in mind, the second part of this chapter makes some suggestions about an effective infrastructure platform for employment growth in the sub-regions. However, it is clear that Western Sydney lacks a long term strategy for infrastructure planning. One of the failings of metropolitan planning in Sydney has been the inability of the metropolitan plans to effectively manage or influence the delivery of infrastructure in the greater metropolitan region. Hopefully this will not be the case for the current Metropolitan Strategy.

9.2.1 Transport

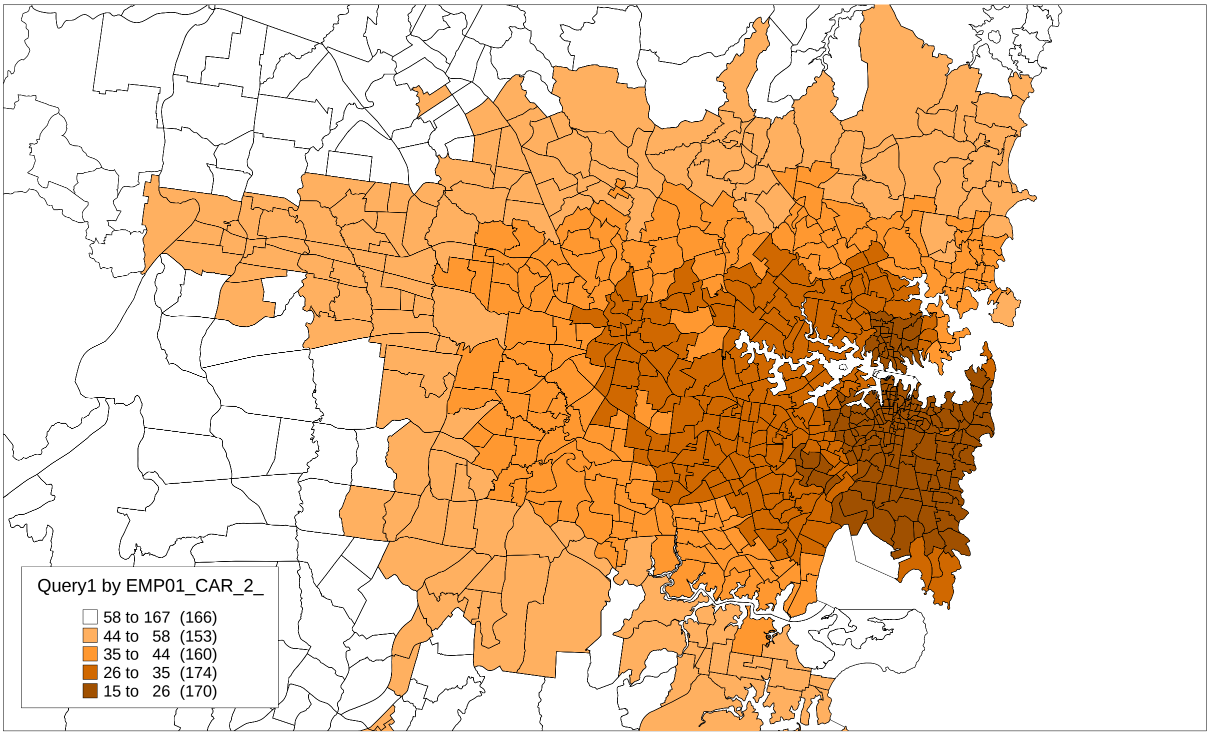
It is clear that public transport in Western Sydney has suffered from chronic under-investment. The region's rail network has remained largely unchanged in coverage since the 1930s, while over 120 kilometres of motorway have been developed at a time when Western Sydney's population has increased dramatically. As a result the region is heavily car-dependent. Journey times for commuters on key parts of the rail network have actually increased over the last twenty years.

The road network has expanded through a number of motorways but has sections which are at or over capacity at peak periods, resulting in long commuting trips and high fuel bills for Western Sydney commuters, especially as fuel prices continue to rise. In addition, many arterial roads in the region are operating beyond capacity as population growth continues to generate traffic for the regional road network.

The high car dependency of the region generates significant greenhouse gas emissions. As climate change mitigation efforts continue and an emissions trading scheme is introduced, the residents of Western Sydney will face increasing financial pain as the inequities in decades of transport investment in Sydney become even more apparent.

The outcomes for the people of Western Sydney are shown in figures 9.1 and 9.2. These show the relative accessibility of people in Sydney to employment based on the distribution of employment as at 2001, and the travel times on road and public transport networks at that time.

Figure 9.1 Relative accessibility to employment by car in Sydney, 2001

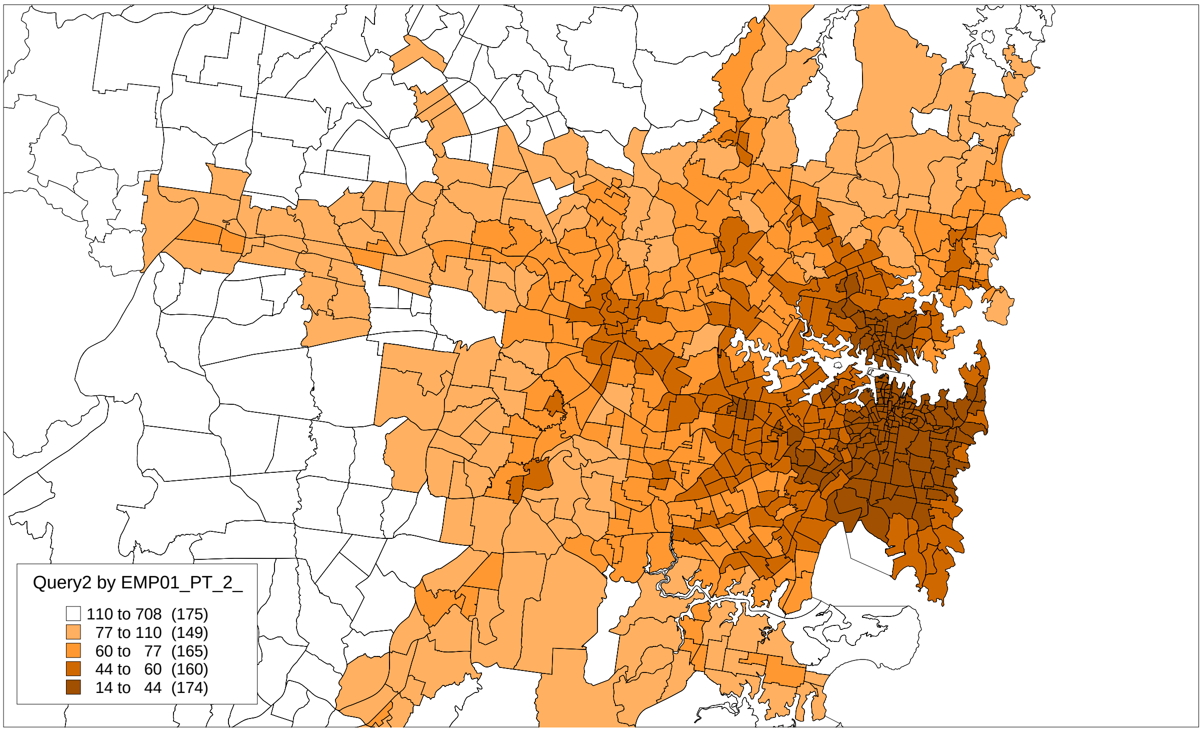


Source: Glazebrook (2004)

Zones with the highest relative accessibility are shown in dark brown; those with the lowest are in white. As can be seen, the study region falls in the range of low to medium accessibility to employment.

This situation has not really changed in recent years. Hurni (2006) examined the issue of transport and social disadvantage in Western Sydney. She concluded that while the uneven distribution of transport services in the Sydney urban area shows that poor levels of transport accessibility are not confined to Western Sydney, transport disadvantage, is highly concentrated in the Western Sydney region. Moreover, the study found that access to employment opportunities and educational facilities, including to TAFE, English language classes and the University of Western Sydney for young people and sole parents, were highly constrained by transport availability and costs.

Figure 9.2 Relative accessibility to employment by public transport in Sydney, 2001



Source: Glazebrook (2004)

The work of Dodson and Sipe (2006, 2008) also reveals that some localities situated in the middle and outer suburbs of Western Sydney are among the most vulnerable to the impacts of rising fuel prices. Better transport access will generate a number of employment benefits for the residents of the region. First, it will improve their access to employment: even if they have to travel outside the region for employment, the trip length will be reduced. Second, it will improve access to the region for workers outside the region and hence encourage employers to locate businesses within the region.

9.3 Transport projects in detail

This section assesses those projects proposed in the NSW government's State Plan.

9.3.1 North West Metro

The NSW government has committed to the construction of the $12 billion North West Metro rail project. There will be 17 stations along the 38 kilometre route between Rouse Hill and the Sydney CBD. Construction of the North West Metro is projected to commence in 2010 and the first trains will operate along part of the route between Epping and The Hills Centre by 2015. The full route between Rouse Hill and the City will be operational by 2017.

This project will replace the previously announced expansion of the north-west rail network. There has been some concern expressed about the feasibility of a metro that is 38 km long and the extent to which the North West Metro plan undermines some previous initiatives such as the integration of transport and land use planning and the provision of additional capacity in a CBD network that is running close to full capacity (see Planning Institute of Australia 2008). There is also a concern that the residents living in the north west who want to access employment at Macquarie Park – who will have to change at Epping onto the Epping Chatswood line – may be frustrated by a lack of capacity.

However, the delivery of a fast modern public transport system that connects the rapidly expanding north west sector of Sydney with the Sydney CBD will be a major asset for Western Sydney. However, in the detailed planning for the route needs to consider:

- the capacity of the system to enable access from the lower north shore to the north west employment areas
- commuter flows in the reverse direction
- capacity issues in accessing the Sydney CBD.

9.3.2 The South West Rail Link

When designing this route, it is key that appropriate car parking facilities be provided at each station and that strategic bus routes be connected into each of the major stations, with the provision of appropriate transport interchanges. This project should be viewed as a high priority project. The deadline for its completion should not go beyond the current strategy of commencing construction in 2010 with completion by 2017.

One concern with recent changes to the proposed rail network is that there is no longer a new CBD crossing linking the North West and South West rail lines. This may have some negative impacts on network reliability.

The following section assesses possible projects for consideration for Western Sydney infrastructure provision.

9.3.3 West Metro

Although not planned or formally announced the West Metro is a clear and much supported rail network initiative. Its completion will strengthen Parramatta as a regional city and provide major links for commuter passengers to the Sydney CBD labour market. It will also relieve capacity constraints on the western line.

Importantly, planning for a West Metro should include provisions to enhance rail access beyond Parramatta to Penrith. In other words, the West Metro should be seen as a transport service for the entire western corridor not just its inner western portion.

9.3.4 The Epping to Parramatta Rail Link

The NSW government granted planning approval in February 2002 for the construction of the Parramatta Rail Link project. The project originally approved was for a 28 kilometre railway linking Parramatta and Chatswood via Epping. The rail link would have added four new stations to the CityRail network and upgraded seven existing stations, including new transport interchanges at Parramatta and Chatswood.

In May 2001 the government allocated funding for the completion of the Epping to Chatswood works and the Parramatta Transport Interchange. However, in August 2003 the Epping to Parramatta section of the line was postponed indefinitely largely because of concerns about the patronage levels in relation to the considerable capital costs (approximately $1.3 billion).

The original rationale for the scheme was that it provided direct benefits in terms of faster commuting times for those wishing to travel between western Sydney and northern Sydney. The scheme also had the advantage of reducing the amount of traffic that was travelling from western Sydney on the Strathfield to Central part of the network (which is approaching capacity). It also would have provided improved public transport access to the UWS campus at Rydalmere which like every other UWS campus suffers from poor public transport access.

In its 1998 transport manifesto, the NSW government said the rail link would “provide vital extra capacity to the CityRail network and a renewed focus on Parramatta as Sydney's second city”; that the main western line was “rapidly reaching capacity”; and that population and economic growth in the area had not been matched by public transport improvements.

It would seem that these claims still apply. Moreover, with rising costs of fuel and the importance of reducing greenhouse emissions, joining up a missing part of the rail network to reduce the load on the Strathfield to Central section of the network and to connect the fastest growing residential areas with the major employment hubs of Sydney’s inner north would be a valuable public investment.

9.3.5 Other public transport improvements

While the major improvements of the network listed above will have major advantages for North-West Sydney, a large number of Western Sydney residents and workers will not benefit directly, particularly those living near the main western line who work in the Sydney CBD. In order to improve public transport outcomes for this group a number of initiatives is required. The objectives here should be to

1. Improve public transport service frequency on all main rail lines and bus corridors, especially in off peak times, with a minimum 15 minute service

2. Introduce express train services across the region that link the main regional centres with the Sydney CBD

3. Increase the reliability of public transport

4. Complete the harmonisation and integration of fares on private bus services with the range currently available on government buses, including a realistically-priced day ticket allowing multiple trips on all trains, government, bus and other public transport services

5. Expand and improve commuter facilities at all rail stations in the region

6. Rollout the strategic busways in Western Sydney that complement the rail network and address movement between public transport modes. In addition, areas that are currently poorly served by public transport need to be serviced. Busways should also connect the major centres identified in the Metropolitan Strategy that have poor public transport access, focussing on the north-south corridors.

9.4 The road network

This section assesses infrastructure needs across Western Sydney's road network.

9.4.1 The M4

The M4 has been a major benefit to the region by reducing travel times along the Homebush to Penrith corridor and linking this corridor directly to the Sydney orbital network. However for many, the M4 is also a road that fails to reach its destination. The road stops abruptly at North Strathfield forcing commuters to use a variety of rat runs through many inner western residential streets. The lack of a link between the end of the M4 and Port Botany is also a major problem for freight traffic coming to and from Western Sydney, particularly given the severe congestion on the M5.

After investigating some possible routes the NSW State government shelved plans for the M4 East in April 2005. While it is clear that the route selection process for the M4 East must recognise the problems the construction and operation of the road could create for the residents of the inner west of Sydney, a resolution of these issues is possible.

It is recommended that detailed planning of the M4 East be resumed and that the creation of a freight route between the end of the existing M4 and Port Botany be expedited. In both planning and implementation phases, however, priority needs to be given to improved public transport capacity along this corridor so that it is completed prior to the operation of an M4 East extension. This ordering will promote public transport usage.

9.4.2 The arterial network

While public transport improvements will have major benefits for the radial road network, it is also clear that large parts of the intra-region road network require substantial upgrading. Of particular importance are the improvements to some north-south connections in the region. While it is not possible in a study such as this to make detailed suggestions, it is clear that the task is a substantial one and will require major expenditure.

9.4.3 Movement of freight

Of major concern to industry in the region are the bottlenecks associated with lack of access to ports because of inadequate road and rail capacity and the lack of intermodal freight hubs. This concern has been echoed by the federal government's Standing Committee on Transport and Regional Services (2007).

Globalisation, technological innovation and industrial restructuring are driving significant increases in freight volumes across the metropolitan area. Imports are increasing dramatically, exports are increasing at a slower rate, and supply chains are becoming more fragmented.

Container trade through Sydney has been increasing at around 7.5% p.a. over the past 20 years and is forecast to increase by 5% to 7% p.a. over the next 20 years. The Port Botany Expansion Project, by adding a new container terminal, will increase capacity of this port from 1.375 million TEU in 2005 to 3.2 million TEU in 2025. Sydney Ports estimates that 85% of containers passing through Port Botany originate from or are destined to within a 40 kilometre radius of Port Botany.

The Western Sydney Employment Hub will be the most significant growth area for transport and logistics in NSW in the coming decade, driven by the construction of dedicated facilities by large developers, and the availability of transport infrastructure and of land. The NSW government has designated a much larger area, the Western Sydney Employment Lands Investigation Area (WSELIA), to accommodate further growth when the hub reaches capacity.

A westward shift in freight transport and logistics is occurring with growth in jobs in transport, postal and warehousing exceeding Sydney's average rate. Opportunities are driven by the completion of the M7, new greenfields sites and investment in new distribution and freight facilities. The increased freight traffic includes export and import of containers, interstate movements and the distribution of freight within metropolitan Sydney itself. Major corporations are investing in warehousing and distribution centres. The combined Western Sydney Employment Hub and WSELIA will create the major origin and destination areas for freight in metropolitan Sydney over the next 50 to 100 years.

Australia's largest corporations engaged in transport and distribution are locating in the area, including Coles Myer, Woolworths, Kimberly-Clark, LG, DHL, Toll and Coca-Cola. Major industrial developers such as Australand, Macquarie Goodman and Walkers are acquiring greenfield sites in the Western Sydney Employment Hub and WSELIA with the intention of having them rezoned for employment lands to accommodate growth in warehousing and distribution facilities.

Yet Sydney is not handling increased freight movements well. Increased traffic congestion, land use conflicts and environmental damage are some of the consequences of increases in freight traffic. The NSW government has a policy to increase rail's share of container freight transported to and from Port Botany to 40%, up from the current 23%. The Minister for Planning established the Freight Infrastructure Advisory Board in 2004 to report on how this target could be achieved. The target is looking increasingly unlikely.

The federal and NSW governments are looking at improving the efficiency of the metropolitan freight network as part of strategies to upgrade state and national freight systems. The NSW government is investigating new intermodal infrastructure to manage the significant increase in freight movements in the Sydney basin over the next 25 years.

The Freight Industry Advisory Board strategy proposed that containers be transported by rail from Port Botany to a network of intermodal terminals throughout Sydney. The proposal involved building an intermodal terminal at Enfield, followed by two large intermodal terminals at Moorebank and then at Ropes Creek, as well as expanding capacity at the existing terminal at Minto and the development of a new planned facility at Ingleburn.

New rail infrastructure is required to support freight movements to and from rapidly growing employment lands in the North-West sub-region. The rapid uptake of employment lands in the Western Sydney Employment Hub is accelerating the need for a new intermodal facility to accommodate growth in container freight. While the Enfield intermodal terminal has been approved, the completion of the facility needs to be expedited.

9.5 Employment lands

As noted, the NSW government has announced the creation of a new major employment hub near the intersection of the M4 and M7 motorways. The 2,450 hectare site is well positioned to become a major job generating precinct because of its strategic location near these two major roadways. The employment hub includes portions of the LGAs of Penrith, Blacktown and Fairfield.

As part of the announcement of the employment lands, the Department of Planning, in recognising the importance of public transport access to these lands, suggested that suitable infrastructure would include rail access from the Western and Southern lines. However, no details of public transport access have been forthcoming. They should accompany further detailed plans for these lands. A longer term transport infrastructure strategy needs to be developed for these lands not only to meet freight demand but also to improve access for workers, particularly by public transport. The employment lands will not attain their potential if they cannot be integrated into Sydney's freight and public transport network to provide good access for workers. This need for access is particularly relevant to decisions about business park location and development.

A similar concern can be raised about the employment expansion plans of Sydney Olympic Park. Whilst the addition of new jobs in the precinct is welcome, the use of a spur line to provide rail access to the site reduces the quality of the access. This line is also of little use to most of Greater Western Sydney. As the area develops, the improvement of public transport to the site should be a major priority. This might initially consist of express bus services from Strathfield Station, but in time could involve dedicated bus transit ways or a station on a Sydney western metro line.

9.6 Telecommunications

The quality of telecommunications infrastructure has long been identified as a key factor affecting economic development (see Cieślik and Kaniewska, 2004). As the internet is used more by firms to do business with customers, suppliers and regulators, it is very clear that access to a high speed internet connection is a key component of any modern business. A common complaint of Western Sydney businesses is the poor standard of internet access in the region. For example, the highest speed of internet ADSL access (ADSL2) is not available in many parts of the region. Moreover, mobile broadband is not available in large parts of the region.

The federal government has acknowledged that poor quality of internet access is an issue in many parts of Australia and is committed to creating a new world class National Broadband Network. The government has promised to invest about $5 billion to establish the National Broadband Network in partnership with the private sector. This will be over a five-year period. The target speed will have a minimum of rate 12 megabits per second. However, until this network is completed businesses in the Western Sydney region will still be at a comparative disadvantage.

Hence it is recommended that the federal government expedite the completion of the national broadband network, paying particular attention to the speed and thickness of the network in Western Sydney.

9.7 Higher education

The economic development literature highlights the importance of universities in fostering innovation and providing skilled graduates for key regional employers (e.g. Barrio-Castro and Garcia-Quevedo, 2005). As the world becomes an increasingly urbanised place, the production and attraction of knowledge in urban areas also rises in importance. Universities and research-intensive organisations have both of these functions embedded: the production of knowledge through teaching and research and the attraction of knowledge through investing in new staff, staff mobility and scientific networks.

Universities are increasingly recognised as knowledge hubs, exercising strong influence in the intellectual vitality of the city in which they are embedded. However, the Western Sydney region remains under-represented in higher education qualifications and attendance. Only one university, the University of Western Sydney, caters specifically for the region's needs and this university's unique but necessary multi-campus nature makes its operation comparatively more costly. The university also has limited capital invested in key areas of regional innovation including science and IT. It is recommended that the federal government provide additional recurrent funding for the University of Western Sydney because of its unique role as a metropolitan regional university with an expensive multi-campus structure and that the federal government look favourably at applications from the University of Western Sydney to the Higher Education Endowment Fund that will increase the capacity of the University to support businesses in Western Sydney.

9.8 Strengthening centres

A key role of infrastructure provision should be to strengthen the centres identified in the Metropolitan Strategy. While some of the infrastructure projects already discussed in this chapter address this objective (especially the transport projects), it is clear that some additional infrastructure in these centres would be beneficial. The Victorian government has an urban improvement programme for centres identified in its Melbourne 2030 Plan. It is suggested that a similar fund for minor infrastructure in each of the centres be established.

9.9 An integrated transport study and plan for Western Sydney

The transport infrastructure issues outlined in sections 9.3 and 9.4 have highlighted the size of the transport task confronting Western Sydney. It is considered that an efficient mechanism for delivering a set of transport priorities in Western Sydney would be the development of an integrated transport plan for Western Sydney. The plan would help to develop a set of transport strategies which would reflect the Metropolitan's Strategy's aspirations to develop the regional cities and major centres in the region.

The goals of the transport strategy would include:

1. To improve access from the west to higher order jobs elsewhere and to jobs within the region
2. To improve access to education and training services
3. To reduce reliance on private vehicles
4. To support the integrated and ongoing development of the region's cities and major centres within the City of Cities Metropolitan Strategy
5. To provide a set of transport priorities for Western Sydney.

It is suggested that the planning process would be managed by the NSW Department of Planning and the Ministry of Transport with inputs from local government and federal transport agencies. The plan should be completed as a matter of urgency. The outputs of the plan would help to prioritise transport infrastructure projects in Western Sydney.

9.10 Summary of infrastructure provision recommendations

A detailed summary of infrastructure recommendations is contained in chapter 11.

Box 9.1 A case study of knowledge transfer into the urban region of Western Sydney

The University of Western Sydney Nanotechnology Network Project was established in 2003 funded by the Department of Transport and Regional Services (DoTaRS) Sustainable Regions Programme in South-West Sydney. The objective of the project was to identify and build nanotechnology business potential, specifically in the area of nano-materials working with existing organisations.

The project was designed as a 'Knowledge Intensive Service Activity' (KISA) where the UWS Office of Regional Development would organise activities providing specific knowledge, specialised information and opportunities to discuss nanotechnology and possible applications to manufacturing processes. The UWS Nanotechnology Network meets quarterly to discuss, attend lectures or seminars and showcase products. Attendance is around 50 people at each meeting which is facilitated by a part-time regional facilitator who compiles a newsletter and maintains both a mailing list with over 300 members and the website. Networking at the quarterly meetings is carefully planned with quality catering and preparation to provide opportunities for people to meet and discuss in an informal setting. The mix of private, public and community sector is also strategically planned so as to facilitate emergence of partnerships.

The industry responses to the UWS Nanotechnology Network and its effects were measured via two small surveys in 2003 and 2005 and three in-depth case studies in 2005. The industry breakdown in the 2003 survey of the network (279 members) shows that the majority of businesses were in manufacturing (32%), followed by business services (19%), government (17%), university and research and education organisations (29%) and other businesses in the area of biotechnology, ICT, health or packaging (3%). Of the responses to the 2003 survey, only 27% of these firms knew about nanotechnology and only 6% were using nanotechnology. Six percent had plans to introduce nanotechnology, 24% were in partnership with a university conducting a particular project and 42% of the firms wanted to network with other members of the network.

Of the responses to the 2005 survey, 46% had participated regularly in the network activities and 51% had gained significant new knowledge as a result of their participation. Of the respondents, 26% had plans to introduce nanotechnology into their companies and 14% had already invested funds in nanotechnology R&D. Up to 26% of the companies had initiated new partnerships during their participation in the network. These partnerships were significantly more frequent with other companies rather than with universities, regional organisations or industry associations. Universities and research and technology organisations were, however, top providers of knowledge and information for nanotechnology. Firms applying nanotechnology were more reluctant to trust in-house sources of knowledge and information probably due to the early path creation of nanotechnology when compared with more established technologies.

An interesting result of the survey is that the perceived barriers for the introduction of nanotechnology in a firm's product development have more to do with issues of 'relevance and information' than with the market or the expertise. While funding was seen as a barrier to the introduction of nanotechnology by 29% of the respondents, issues of relevance for the firm and of information seem to be far more important (72% of respondents). Three of the UWS Nanotechnology Network companies were selected for in-depth case study on this issue of 'relevance of knowledge'. The analysis focused on the firm's innovative activity, the type of nanotechnology knowledge intensive service activities (KISA) undertaken and the internal transforming processes used by the firm for the adoption of nanotechnology.

These cases show that knowledge intensive service activities associated with nanotechnology are not very frequent; most are undertaken in-house, with other consulting businesses or with UWS, industry associations and government departments. The companies considered it important to link to UWS for their innovation processes because of UWS's diffusion of knowledge of new technologies and facilitation of meetings with other companies looking for similar solutions. Collaboration partners in the innovation process were found to be local – in a radius of 20 kilometres – and featuring especially UWS, suppliers and clients.

Local universities therefore can have a high impact on firms' competitiveness through partnering in the co-production of knowledge and innovation. Networks also seem to be selective in the knowledge they produce, customising it to the needs of participants.

10 Spatial analysis

This section deals with identification and analysis of key strategic precincts and employment lands. The central organising concept of the Metropolitan Strategy is a City of Cities, the sub-title of the Strategy. The City of Cities refers to the transformation of Sydney from a predominantly mono-centred city to a multi-centred city, with economically competitive centres accessible to growing residential areas located across the metropolitan area. The aim is to increase the number of good jobs, amenities and services, predominantly in strategic centres, closer to where people live. The concept is reinforced by the *State Plan: A New Direction for NSW* in its section *Priority E5: Jobs closer to home*. This is designed to achieve less travel, more productive businesses, less road congestion and less pollution, and more successful regional cities and centres.

The concept is illustrated in figure 10.1 which expresses a normative goal of a 1 hour city, where residents do not have to travel more than 1 hour a day to and from work, shopping, amenities, entertainment and cultural facilities. Although daily movements are more complex than outlined in the map, it does provide a vision of how to strengthen economic and social activities across metropolitan Sydney.

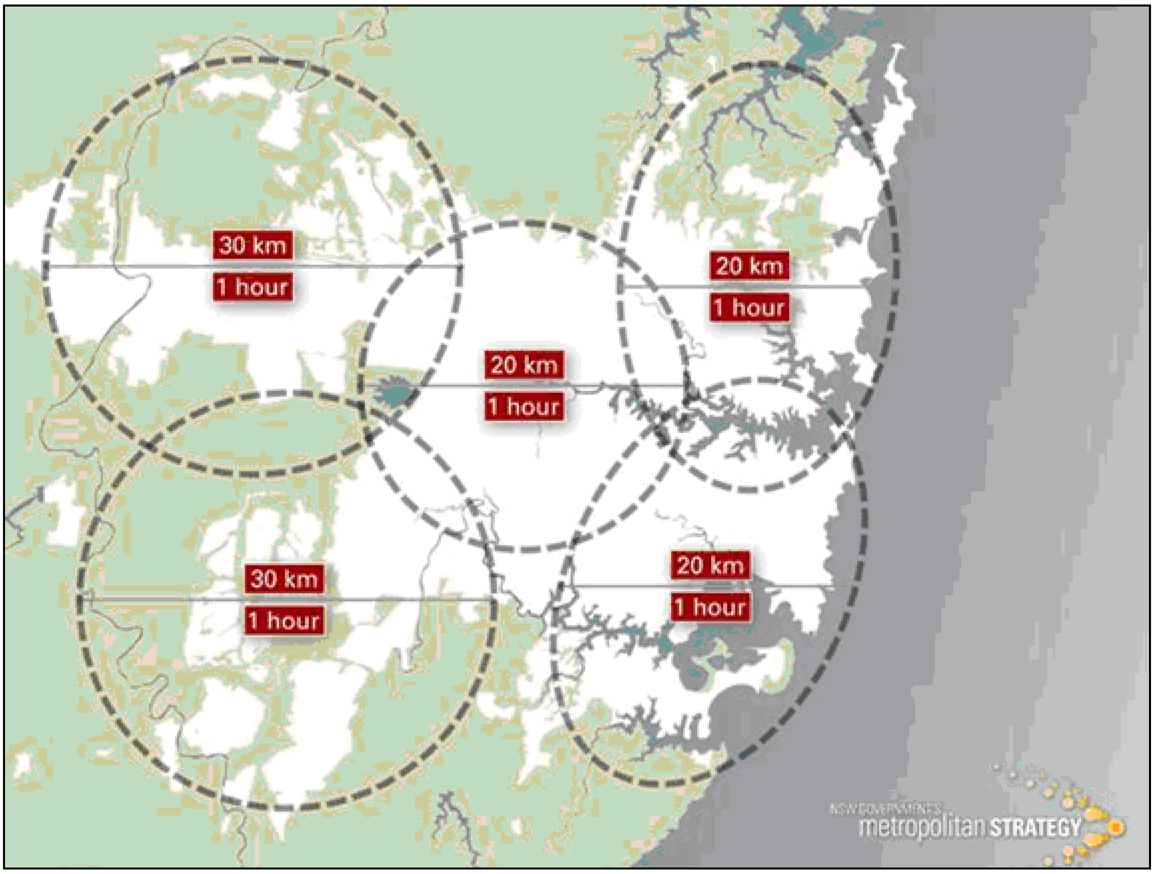
Over the past 25 years, Sydney has grown into a third or second tier global city with concentrated finance and business services industries around its centre, including Sydney CBD and North Sydney, and along the global economic corridor stretching from North Ryde through these centres to Sydney Airport in the south. Although the sub-regions of Greater Western Sydney experienced strong job growth during the period of rapid economic growth, they also experienced job losses in manufacturing industries and loss of opportunities for low skilled workers.

In relation to employment, the Metropolitan Strategy has two explicit elements:

1. Build on the strengths of the global economic corridor
2. Grow jobs across the metropolitan area, particularly in Western Sydney.

The Metropolitan Strategy gives priority to building a stronger economy and accelerating job growth in GWS and its sub-regions. Revised Metropolitan Strategy forecasts nominate a net increase of 150,000 jobs in the global economic corridor, and a net increase of 280,000 jobs in the sub-regions of GWS, including 110,000 net additional jobs in the North-West and 61,000 net additional jobs in West-Central.

Figure 10.1 Jobs closer to home



Source: adapted from NSW Department of Planning (2005a, p. 8)

Job growth is to be accommodated in centres, employment lands and dispersed locations including specialised facilities (such as Richmond Air Base), schools and home-based businesses. A key objective is to concentrate more jobs in strategic centres, which would bring a number of economic, social and environmental benefits. Economic benefits include clustering of competitive service based industries and better utilisation of public transport and communications infrastructure. Social benefits include strengthening of social capital and improvements in amenities and services for people living in centres or accessible to centres (NSW Department of Planning 2005b, p. 87). Environmental benefits include the reduction of emissions resulting from compacting activities in centres well served by public transport, rather than dispersing them to areas with poor public transport.

10 Spatial analysis

The Metropolitan Strategy outlined a typology for Sydney's strategic centres: global centre, regional cities, specialised centres and major centres. Together, the Sydney CBD and North Sydney form a major focal point for Australia's interaction with the world in terms of capital flows, knowledge exchange and tourism. Given the geographical spread of Sydney, population growth and improvements in technological innovation (particularly information and communications technologies), the Metropolitan Strategy designated three regional cities in GWS: Parramatta, Liverpool and Penrith. These centres are projected to be dominant cities for large and rapidly growing sub-regions. Parramatta has the status of Sydney's second CBD, and has been given priority for government investment over four decades. The NSW government, in collaboration with councils, established a Regional Cities Task Force to prepare plans for these regional cities.

An important innovation of the Metropolitan Strategy is the designation of specialised centres including major airports, ports, health and education centres and business parks. These are high intensity activity centres that perform vital economic, social and employment roles. Designation as specialised centres provides a framework to enhance their economic and social value building on their dominant activities, as well as guiding infrastructure priorities. Previously these strategically important activity centres were seen as out-of-centre developments, which downplayed their significance. It is now time to focus public transport investments on these strategic centres and build their economic competitiveness and social significance. Three specialised centres are in West-Central: Westmead, Bankstown Airport/Milperra and Sydney Olympic Park/Rhodes (although Rhodes is in the Inner-West sub-region, making integration more difficult). The North-West has one specialised centre, Norwest.

Finally, the Metropolitan Strategy identifies a number of major centres, which are major shopping, civic and business centres for their local areas. Major centres in North-West are Castle Hill, Blacktown and Rouse Hill, which is an emerging major centre. Bankstown is a major centre in West-Central.

The distribution and availability of employment lands is an important influence on employment location. Employment lands accommodate industrial activities such as light industrial, manufacturing, wholesale, transport and storage, as well as technology and business parks. Around one quarter of all Sydney's jobs are located in employment lands, but the share of jobs in employment lands is greater in GWS compared to the rest of Sydney. According to the Department of Planning around 43% of all jobs in West-Central and 39.5% in the North-West are located in employment lands. Both sub-regions have significant employment lands (table 10.1), with around 55.5% of all of Sydney's zoned employment lands. The two sub-regions are dealing with slightly different issues in relation to employment lands. The North-West has the largest share of new greenfields sites, located around the Western Sydney Employment Hub and, in future, the Western Sydney Employment Lands Investigation Area. West-Central employment lands are predominantly brownfields sites, with key issues surrounding the regeneration of older developed sites.

Table 10.1 Employment Lands Distribution in Sydney 2006

Sub-region	Area Zoned	Share of metropolitan Sydney (%)
North-West	**4,173.4**	**28.22%**
West-Central	**4,031.0**	**27.26%**
South West	2,062.9	13.95%
Inner West	361.3	2.44%
South	758.6	5.13%
Sydney City	236.3	1.60%
East	659.9	4.46%
Inner North	193.8	1.31%
North East	301.4	2.04%
North	167.8	1.13%
Central Coast	1,840.4	12.45%
Sydney Total	**14,786.8**	**100.00%**

Source: Department of Planning, unpublished data

The remaining jobs in the two sub-regions are accommodated in smaller centres (e.g. Prairiewood, Seven Hills), special use areas (e.g. Kingswood, Werrington and Rydalmere campuses of UWS) and dispersed along enterprise corridors or in home-based businesses.

10.1 Strategic areas of West-Central

1. **Parramatta**
2. **Westmead**
3. **Bankstown Airport/Milperra**
4. **Bankstown**
5. **Sydney Olympic Park**
6. **West Central Employment lands**

10.1.1 Parramatta

Parramatta was Australia's second colonial settlement and its first planned town. Parramatta is emerging as Sydney's second CBD. Parramatta was identified as a key centre in the 1968 Sydney Region Outline Plan and has since been the centrepiece of the NSW government's centres policy. Over the past 40 years the centre has sustained high employment growth and the centre is on a strong growth trajectory. The Metropolitan Strategy forecast that employment in Parramatta would increase from around 41,500 to 60,000 in 2031. The Regional City Task Force, a partnership between the Department of Planning and Parramatta City Council which followed the release of the Metropolitan Strategy bullishly increased the 2031 job forecast for Parramatta from 60,000 to 70,000.

The Parramatta City Centre, as defined in the Local Environmental Plan, covers the area from the north at Church Street to the South at 'Auto Alley', from Parramatta Park in the west to the east past the ferry wharf.

State government and council planning and investment, with occasional support from the federal government, have demonstrated a longstanding commitment to the centre. Major commitments include redevelopment plans for the city centre, government office relocations, investments in transport infrastructure and services, protection of heritage and recreational assets, and commitments to cultural facilities and the public domain. Recent development and plans include the relocation of Sydney Water and NSW Police to Parramatta, the establishment of a Justice Precinct, creation of the civic precinct, a major upgrade of Parramatta Station and investments in the Parramatta-Liverpool and North-West Transitways.

Parramatta's competitive strength is its location within a major population catchment and its role as a transport hub. This is the major reason why it is becoming one of Sydney's most significant employment destinations. Its accessibility is one of its key assets. Parramatta is planned to be the primary activity centre outside of the Sydney CBD. The centre is a focal point for major rail and bus routes in western Sydney. This includes the Western Rail line, connection to the south west through Harris Park and the Cumberland line and proximity to the (under-utilised) Carlingford line, as well as the relatively new Parramatta-Liverpool and North-West Transitways. The centre's relative proximity to the Sydney CBD (27 minutes by express train), and access by ferry along the increasingly populated Parramatta River, is attracting investment in commercial back-offices. Parramatta is also at the centre at a network of sub-regional centres including Westmead nearby; Sydney Olympic Park, Rhodes and Burwood to the east; Castle Hill, Rouse Hill and Norwest to the north; Blacktown to the west; and Liverpool to the south. Parramatta also services local employment lands including Camellia, Rydalmere, Silverwater and Clyde. The centre contains around one third of all jobs in the local government area.

Public investment and the centre's geographical advantages are catalysts for private sector investment. Major activities include finance and business services, government administration, community and health services, retail, accommodation, cafés and restaurants and construction.

Parramatta is now a major commercial office centre. It is on a par with North Sydney and is likely to overtake it to become Sydney's second largest commercial property market (NSW Department of Planning 2005b, p. 95)[7]. It is the primary business centre for Greater Western Sydney, with strong representation from finance, accounting, law and human resource firms. Major corporations include Capital Finance, Commonwealth Bank of Australia, AGC, Suncorp, Colonial First State, Telstra and NRMA. The centre is an important visitor and business destination, with six hotels in and around the city centre, the Riverside Theatre, cinemas, restaurants and entertainment venues.

Parramatta is one of Sydney's largest retail centres. This includes a major Westfield shopping centre, which comprises around two-thirds of all retail space in the centre. The Westfield complex has recently been extended and integrated with Parramatta railway station. New retail opportunities are being extended along Church Street and a growing Asian food precinct with a mix of cafes and groceries around the southern end of Church Street.

Strong growth of the Westmead specialised centre will drive opportunities for business services, medical based businesses and hospitality services and amenities. Growing links with UWS will strengthen opportunities for Parramatta to develop as a learning city, which will further enhance investment and employment prospects.

The Parramatta City Plan seeks to integrate employment and amenities with new residential opportunities, through increasing the range of services, recreational facilities and new and diverse housing. The residential population is growing and becoming ethnically diverse and the centre is attracting more young professional people (NSW Government Department of Planning and Parramatta City Council 2006).

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[7] It should be noted that the Department of Planning has increased employment capacity forecast for Parramatta to 70,000 jobs by 2031, whilst the employment capacity target for North Sydney remains 60,000 jobs.

Economic and employment futures are positive and this is why employment forecasts have been increased. The centre needs to confront a number of challenges. First, a volatile global economy would severely impact major growth sectors, particularly finance and business services. The centre needs to focus on how to build strong competitive clusters. This includes seeking commitments from educational institutions to invest more in the provision of finance and business educational courses in the centre. Second, Parramatta faces competition from business parks such as Sydney Olympic Park, Rhodes and Norwest in attracting commercial office activities. The centre needs to continually invest in public domain, transport management and amenities to compete effectively with these centres. Third, despite significant improvements in transport infrastructure, the centre still confronts major challenges in relation to traffic congestion and parking constraints. Access to and from the city centre by car from the M4 is a major problem.

In terms of economic strategies, it is important that the councils of Western Sydney support the growth of Parramatta as the second CBD for Sydney. For example, Blacktown centre, even though it is in a different sub-region, is only 10 minutes from Parramatta by express train. Councils in West-Central and North-West should support projects to strengthen Parramatta as Sydney's second CBD as well as strengthening connections between centres.

Industry clusters need to be strengthened particularly in finance and business services, tourism and the cultural and creative industries. Resources to support industry clusters and networks need to be developed, based on partnerships between Parramatta City Council, Greater Western Sydney Economic Development Board, and the new federal body Regional Development Australia. Given the size of Parramatta CBD, consideration should be given to establishing a Business Improvement District which might strengthen business leadership through devolving resources and responsibilities to centre businesses.

Strategies to strengthen health and education are critical. The Rydalmere campus of University of Western Sydney is close to the centre but not well linked and separated by James Ruse Drive. Redevelopment along Parramatta River will create more opportunities for student housing, cycleways and recreational amenities between the centre and the campus. TAFE does not have a campus within Parramatta centre, and there is lack of clarity about which TAFE Institute has responsibility for Parramatta, as it is divided between Western, South Western and North Sydney

Institutes. Building a strong vocational presence, either through TAFE or major private training organisations, is an important priority to strengthen the role of Parramatta as a learning centre.

10.1.2 Westmead

Westmead is designated as a specialised centre because it has significance across the metropolitan area. Westmead is one of Australia's largest health and medical precincts, containing four hospitals: Westmead Public, Westmead Private, Westmead Children's Hospital and Cumberland Hospital. Westmead specialised centre is also one of Sydney's most rapidly growing employment destinations.

Westmead is emerging as a world class health, bio-technology and research and development centre. Employment growth has been rapid in recent years. Between the years 1991 and 2001, employment in Westmead increased by 37 per cent. It is forecast to accommodate up to 25,000 jobs and 6,000 dwellings by 2031 (Department of Planning, unpublished data). The key strategies are to provide outstanding health care for patients from a large catchment area while building a reputation for medical research and commercialisation of medical knowledge. Westmead is accessible from Sydney's most rapidly growing population areas. It is located on the Western rail line with access to the Cumberland Highway and the Great Western Highway as well as the newly completed North-West Transitway.

Around Westmead there is a number of redevelopment opportunities for both employment and housing. Within the precinct itself, there are opportunities in the employment zone to the north and further opportunities for higher density housing in the residential areas that surround Westmead. Westmead is linked to Parramatta centre through the Cumberland Hospital, Parramatta Rive and Parramatta Park. The growth of health and medical facilities at Westmead may encourage spin-offs to the Parramatta centre itself in such areas as health insurance and health administration. The growth of clinical services at Westmead and the commitment of Sydney University to Westmead as a teaching hospital are creating new opportunities to strengthen bio-medical research and commercial opportunities within the area.

The Westmead precinct is one of Sydney's most specialised and highly accessible employment nodes, and presents opportunities to further build quality jobs for people and improved health services for people living in GWS. Close coordination and collaboration is required between a range of agencies including the NSW Department of Health, Parramatta and Holroyd Councils, Department of State and Regional Development and transport agencies to ensure that the research and technology capacity as well as accessibility of the centre is continually improved.

To attain its employment potential Westmead must address a number of challenges. First, there needs to be sufficient space to accommodate the growth of health, research and health associated activities within Westmead. Second, parking constraints make it difficult for visitors and day-patients. Third, there needs to be improved coordination between hospitals, educational establishments and public and private research facilities.

10.1.3 Bankstown Airport/Milperra

The Metropolitan Strategy designates Bankstown Airport/Milperra as a specialised centre. Specialised centres are geographical areas incorporating activities that have metropolitan significance. The designation as a specialised centre provides the area with recognition as a significant activity centre including deepening its economic base, growing employment densities and upgrading infrastructure and services. The vision for this specialised centre is to expand opportunities for high value added industries and skilled jobs associated with aviation, manufacturing, logistics and education, through improving planning and industry networks, development and redevelopment opportunities, and access to and from the area.

The Metropolitan Strategy forecasts that the number of jobs in this specialised centre will increase from just over 16,000 jobs in 2001 to 20,000 jobs in 2031, or by 22.5% (NSW Department of Planning 2005b, p. 95). This is above the forecast job growth rate for Sydney over this period. The challenge is even greater given that much of the area is undergoing industrial restructuring. This involves job losses, particularly in older manufacturing industries. Hence, the challenge is to attain a net jobs increase of 20,000 even though job losses in some industries are expected to continue. Of the 16,000 existing jobs, around 6,000 people are employed in association with the Bankstown Airport site (Transport Population Data Centre 2006), and the rest are predominantly employed in the Milperra Industrial Area, with a smaller number within the UWS Bankstown campus.

The redevelopment of Bankstown Airport/Milperra as a major economic activity centre is important for the future of the Bankstown and southwest Sydney economies. The development and redevelopment of this area is a high priority for Bankstown City Council. Older industrial areas around Bankstown, Fairfield and Liverpool are part of an older production zone which has experienced industrial restructuring and job losses. The decision to transform the nearby surplus defence lands at Moorebank into an Intermodal facility rather than a technology based business park creates the imperative to develop new higher order jobs in this area.

The key challenge is to build on the strengths of these activities and optimise the use of existing land and infrastructure assets. Increasing employment opportunities and densities will complement strategies to improve transport infrastructure and services, including public transport. A commitment to upgrade capacity of the M5 east extension will also be an important spur for the redevelopment of the area.

The area is divided into three broad activity precincts:

1. Bankstown Airport (330 hectares)
2. Milperra Industrial Area (230 hectares)
3. Milperra Campus of the University of Western Sydney (40 hectares).

Bankstown Airport is a major general aviation airport which provides aviation services for privately owned small aircraft, corporations, helicopters, charter flights and training. The airport is physically constrained from accommodating large aircraft due to the restricted length of the runway and proximate residential areas. The owners have a long term plan to expand the runway by 220 metres although it is not proposed that the site will develop as a significant airport. The owners see its role in developing niches for regular public transport (RPT) freight and charters, and its general aviation business. The airport is planning for growth in aircraft movements of around 100,000 additional movements per year to 424,000 movements per year by 2024-25 (Bankstown Airport Ltd 2004).

The airport site hosts a range of industrial and commercial activities. The master plan identified 160 hectares of surplus land, which the owners are seeking to develop. This includes a business zone and employment zone to accommodate a range of non-aviation activities as well as aviation related activities. A number of aviation businesses involved in the maintenance and overhaul of civilian and military aircraft are clustered on and around the airport site. This includes Hawker Pacific, Turbomeca, Byron, Boeing Hawker de Havilland, Eurocopters and Thomas Electronics. The area also has a growing role in freight and logistics, particularly in the rapid movement of parcels. Toll Holdings has located a major facility on site. One of two state centres in aviation is located at Padstow TAFE, in close proximity to the airport, providing trades training in avionics, mechanics and structures.

Industries associated with aerospace all have significant opportunities at Bankstown. Key industry opportunities include:

- Maintenance, repair, overhaul (MRO)
- Design and manufacture
- Air traffic control
- Pilot training, to attain its potential, a number of issues need to be addressed.

A number of strategic directions has been identified: Firstly, strategies need to be developed to strengthen the aerospace cluster, focused on Bankstown but including firms from other areas. Collaboration and coordination are essential between the owners of Bankstown Airport, local companies, Bankstown Council and public agencies such as GWSEDB and Austrade, as well as education providers. More detailed mapping of the aerospace cluster is required, with a particular emphasis on gaps in the supply chain, improving information exchange, focusing on magnet infrastructure such as flight simulators that could induce increased investment, and developing an attractive business environment and branding strategy. The Australian aviation industry is currently experiencing a shortage of experienced pilots, aircraft maintenance engineers and air traffic controllers (Australian Government 2008b). An opportunity exists to attract new investment in aerospace related industries and activities associated in Bankstown. This might include strengthening research and training facilities on the airport site.

More emphasis needs to be given to the role of the UWS Bankstown campus and how it will be integrated into the specialised centre. The Bankstown campus will remain a key academic and research campus for UWS and a fundamental part of the university's campus planning program. It has important research centres including the MARCS Auditory Laboratories. Of the 7,200 student enrolments, around 52% live in Greater Western Sydney and 11% are international students (University of Western Sydney 2008). The campus is constrained by relatively poor public transport services. The University is planning for growth, and is looking to transform the campus by improving amenities and expanding opportunities for student accommodation.

Milperra Industrial Area is located between Bankstown Airport and UWS Bankstown. It is a brownfields industrial area covering around 231 hectares. It is well located in relation to Sydney's motorway network, Port Botany and Sydney Airport. The area is centrally located in relation to a labour catchment area with a high proportion of processing, trades and technical skills. The industrial area has a significant concentration of metals and engineering, automotive parts and repairs, freight and logistics and aviation businesses. Industrial restructuring has been ongoing, driven by tariff liberalisation, mechanisation and automation, and loss of industrial competitiveness.

Manufacturing firms such as Kirby Engineering, Exicom and BTR Engineering have downsized or closed. On the other hand, more efficient firms serving local markets, or high value added niche markets, have continued to grow. The main growth area has been freight and logistics. This has been driven by globalisation, increased local demand and growing industry specialisation. Transport and logistics firms (as well as some manufacturers) relocated from inner city areas, particularly the Central Industrial Area in Sydney South. Competitive rents and appreciation of property values in Sydney South spurred the new round of investment. The locational advantages of Milperra as a freight and logistics centre, however, are partially offset by challenges within the area itself. These include traffic congestion, inappropriate road design for large trucks and insufficient sites for freight and logistics. Because of its location and underutilized industrial site, the area has significant potential for economic regeneration. There are three catalysts: improving links to and upgrading Henry Lawson Drive, creating more flexible zonings to encourage a higher office component, and investment in amenities such as childcare and local retail to enhance its appeal to workers and firms.

10.1.4 Bankstown

Bankstown centre catchment area includes Bankstown local government area and parts of southern and south west Sydney. The Bankstown centre is bounded by Rickard Road to the north, Stacey Street to the east, Stanley Street to the south and Meredith Lane to the west.

The Metropolitan Strategy designates Bankstown as a major centre, because it is the main shopping and business centre for the district, with a full scale shopping mall, council offices, taller office and residential buildings and central community facilities. The main industry sectors in the centre are retail, which is dominated by Centro Bankstown, government administration, property and business services, health and community services, and education. The Centro shopping centre is undergoing expansion, although there is uncertainty following its corporate financial collapse. The centre has a growing Asian food precinct. Many businesses in the centre provide health, business and personal support services.

The South West Sydney Institute of TAFE has a major campus in the centre, including the Institute Director's office. The proximity of the UWS Bankstown campus is a strength that could assist in developing Bankstown as a learning centre. More than half of the students at the campus are residents of Bankstown and south western Sydney.

Bankstown is a well connected centre being close to the Hume Highway and M5, although getting into and around the centre has challenges. The railway line provides a link with the Sydney CBD and other strategic centres to the east and west of Bankstown. Bankstown has good access to a number of strategic centres including Sydney Airport and Port Botany, Parramatta and Liverpool. It is a business service centre surrounded by a number of important production areas including Bankstown Airport-Milperra, Padstow, Villawood and Chullora industrial areas.

Bankstown LGA is ethnically diverse and supports households with incomes lower than the metropolitan average. Bankstown centre is struggling to grow jobs. Between 1996 and 2001 there was a 15% decline in jobs in the centre. In 2006, there were an estimated 9,577 jobs in the centre (Transport Population Data Centre 2006). The centre was impacted severely by public office relocations, specifically the departure of the Australian Taxation Office and the NSW Department of Local Government. Rebel Sports, which had a large administration office in the centre, relocated to an industrial area. Industrial restructuring has resulted in employment losses in major employment lands in the Bankstown LGA with negative multiplier impacts on expenditure and employment in the centre.

The Metropolitan Strategy sets a realistic target of 14,000 jobs in the centre by 2031, a net increase of 4,000 jobs from 2001, or 38.7%, which reflects new opportunities for service based jobs.

The centre has important attributes to build on. Significant venues include Bankstown Town Hall, Bankstown Sporting Club, Lithuanian Club, Croatian Club and Memorial Oval. Commercial and retail activities are concentrated around the railway station and bus interchange. Bankstown Railway Station is centrally located within the centre. The current architecture is relatively low-scale and low grade buildings situated in the existing mall and streets throughout the plaza precinct. This suggests there may be opportunities for redevelopment. The centre has a well planned civic precinct, focused on Paul Keating Park, incorporating the council chambers, town hall, library, court house and police station.

10 Spatial analysis

Bankstown Council has a pro-active role in developing the centre and its surrounds as a higher density residential area and growing employment centre. The council has been working on a long term plan to regenerate the centre. The key elements of the council's strategy are:

1. Accommodation of population growth in a mixed-use centre
2. Planning for centre-based jobs and economic growth
3. Enhancement of transport and infrastructure
4. Improvement in access and connectivity.

To turn around the decline in centre employment, Bankstown council is addressing a number of challenges. These include:

- Safety and public domain, including investing in safety measures and lighting; improving amenities and creating more living and recreational amenities to increase activity
- Transport accessibility, which involves better integration of north-south thoroughfares and establishment of new bus corridors
- Residential development and liveability, including the creation of a more liveable, higher density environment close to public transport and amenities of the centre
- Urban design, including encouraging mix-use activity and a diversification of retail and office activity.

Bankstown Council and the Department of Planning give high priority to reversing job decline in the centre through enhancing the centre's competitiveness. One impediment is the lack of A-grade commercial office space. Opportunities include investing in cultural infrastructure such as a new arts and culture centre, flexible zonings to encourage more commercial office development, implementing learning city initiatives with vocational and higher education partners, and developing distinctive streetscapes and precincts to attract more visitors and shoppers. Ethnic diversity creates opportunities for festivals and events. The redevelopment of the plaza-station precinct and expansion of Centro shopping centre will improve the competitiveness of the city centre. The construction of the southern Sydney freight line may be the catalyst for the redevelopment of the station and surrounding precincts.

10.1.5 Sydney Olympic Park

Together, Sydney Olympic Park (SOP) and its neighbour Rhodes are designated as a specialised centre by the Metropolitan Strategy. They are regarded as one centre due to their geographical proximity and their potential to establish higher-order jobs in a location beneficial to Western Sydney workers. The centre could be instrumental in driving higher rates of economic growth in the metropolitan area over the next 25 years by expanding Sydney's business park capacity. The creation of a modern office and business park environment has the potential to attract knowledge based jobs further west, particularly if transport impediments can be addressed.

Although SOP is at the geographical centre of metropolitan Sydney, access is a major problem. The park is accessed by east-west traffic movements from the M4 and Parramatta Road while north-south access is provided by Homebush Bay Drive which, as part of Ring Road 33, links southern Sydney to Sydney's northern beaches. Rail services are provided by a spur line from Lidcombe, although this is inadequate to accommodate planned growth. One option being considered is a Western Metro linking Parramatta to the city via Olympic Park. Another option which should be considered is to link Parramatta with Macquarie Park via SOP/Rhodes. This is discussed below.

SOP is developing as a multipurpose activity centre based around sports, recreation and events, employment and residential development. SOP covers an area of around 640 hectares of which 400 hectares are parkland, and Rhodes covers an area of 43 hectares. Both are old industrial sites which evolved along the Parramatta River. Redevelopment of SOP commenced in the early 1980s, with the establishment of the Australia Centre, Bicentennial Park and Sports Centre. The Sydney Olympics provided the catalyst for planning and investment in major infrastructure.

After the Sydney Olympics, the Sydney Olympic Park Authority (SOPA) was given authority to plan and develop this large centrally located area. SOPA prepared a Master Plan in 2002 which identified eight major development areas and provided for development capacity for 230,000 square metres of commercial, leisure, education, retail, hotel and cultural/institutional uses.

SOPA has recently released a new draft Master Plan (Sydney Olympic Park Authority 2008), which identifies nine strategic precincts. Master Plan 2030 is designed to facilitate the Park's continuing evolution into a successful specialist economic centre and urban parkland by:

1. Building on Sydney Olympic Park's uniqueness as an outstanding sports, entertainment and recreation precinct
2. Expanding the park's business, education and hospitality activities
3. Introducing new urban activities including residential uses that will activate the precinct on a 24/7 basis.

The draft Master Plan allows for an additional 14,000 residents and a sports and education precinct which will accommodate up to 5000 students. SOPA is giving high priority to linking new educational infrastructure with employment outcomes.

The specific focus here is employment outcomes. There is a significant difference in employment forecasts by the West-Central sub-regional strategy and SOPA's Master Plan 2030, with the strategy forecasting jobs will grow to 19,900 in SOP by 2031 (an increase of 12,000, from 7,900 jobs in 2001) (NSW Department of Planning 2007c, p. 67). The Draft Master Plan, on the other hand, forecasts 28,000 additional jobs to around 40,000 by 2030 (Sydney Olympic Park Authority 2008b).

The difference in forecasts can arguably be explained by the differences in perceptions about access by public transport. If transport impediments can be addressed, the ambitious employment target set by SOPA may be achievable. If transport impediments are not addressed, the more sober forecasts of the sub-regional strategy will become a reality.

In relation to its employment precincts, SOP is developing a commercial office and business park environment. The park is part of a network of middle ring business parks which includes Rhodes, Macquarie Park and SOP.

Linking the rapidly growing GWS labour force with this network of business parks by good public transport should be a high priority. Currently there is little thought given to linking new residential developments in GWS to these employment hot spots. SOP is served by a spur line from Lidcombe. Workers commuting to Rhodes from Western Sydney by train have to travel east to Strathfield and then travel to Rhodes on the northern line. With the deferral of the Parramatta Rail Link connection to Macquarie Park, workers from GWS are disadvantaged in accessing one of Sydney's most important and rapidly growing employment centres (SGS Economics and Planning 2004, p. 93).

One option would be to link Macquarie Park to Parramatta via Epping, Rhodes and Sydney Olympic Park. This link would aid the integration and development of the major specialised centre of SOP/Rhodes. The link would also improve access for GWS workers to three of Sydney's most important business parks. This would support the City of Cities strategy and take pressure off the Sydney CBD. Employment forecasts for SOP/Rhodes and Macquarie Park exceed employment forecasts for Sydney CBD.

10.1.6 West-Central employment lands

West-Central contains a high proportion of Sydney's employment lands, with around 3,700 hectares. The draft West-Central sub-regional strategy identifies three broad employment belts:

- Camellia, Rydalmere, Silverwater, Auburn/Clyde
- Milperra, Condell Park
- Wetherill Park, Smithfield, Yennora, Fairfield East, Villawood.

Most of these employment areas are fully developed. The most recent new area involves a business park zoning at Greystanes. The established employment lands areas are undergoing transformation due to continuing restructuring of manufacturing, and the growth of transport and logistics. Improvements in transport infrastructure including the construction of the M5 East extension, the construction of the M7 and the Parramatta-Liverpool Transitway, have spurred investment in established employment lands such as Smithfield-Wetherill Park and Milperra.

West-Central has significant potential for economic renewal of brownfields employment lands. In Auburn, for example, increased demand is forecast for wholesaling, construction and commercial floor space. With a forecast decrease of industrial floorspace in Auburn, new opportunities are emerging to encourage new employment related activities into established employment lands (Hill PDA 2008). New developments in Bankstown are also likely to affect land uses in existing employment lands. The construction of the Enfield Intermodal Facility at the Enfield marshalling yards will have an impact on employment land uses in Bankstown, particularly Chullora.

10.2 Strategic centres of the North-West sub-region

The strategic centres of the North-West sub-region are:

1. **Norwest**
2. **Penrith**
3. **Blacktown**
4. **Castle Hill**
5. **Rouse Hill**
6. **North West Employment Lands**

10.2.1 Norwest

The Metropolitan Strategy identifies Norwest as a specialised centre, which has emerged as a high-tech employment node in the North-West sub-region. The 377 hectare Norwest site was identified in the early 1980s, at the time when detailed plans were being prepared for what was then called the North-West sector. The delay in the start-up for the designated key centre at Rouse Hill created an opportunity for the private sector owners of Norwest.

In the late 1980s, concerned about poor infrastructure and the outflow of commuters from north west Sydney, the NSW government gave approval for Norwest Business Park. The special 10A Employment Zone, which provided flexibility and encouraged the co-location of advanced industrial, distribution and office activities, was a catalyst to attract higher order jobs to the sub-region.

Norwest is bordered by Windsor Road and Old Windsor Road, and is close to the M7 and M2, which have enhanced the locational attributes of the site. The North-West Transitway runs along the boundary of Norwest although does not provide services to all areas of the business park. The proposed North-West Metro, a 38 km rail line linking Rouse Hill with the Sydney CBD, will traverse Norwest. This would address a critical public transport deficit in the sub-region. The business park's workers are car dependent with the Transitway and the proposed rail infrastructure designed to improve the modal split towards public transport.

After a slow start-up, Norwest took off during the 1990s to become one of Sydney's employment hot spots (SGS, ibid). In 2006, it employed around 12,000 workers. High technology and other high value added firms are attracted by the high skilled labour force in the Hills catchment area, particularly in relation to scientific, research, IT and management skills. The Norwest Master Plan guided the assembly of large sites to meet the needs of large scale users as well as the provision of a range of amenities including childcare, a swimming pool, recreational areas and shops. The availability of quality housing in adjacent and neighbouring areas attracted more high skilled workers and this reinforced the attractiveness of the business park. There are plans to redevelop the shopping centre and some redevelopment of building stock is already occurring.

Norwest has attracted prestigious international companies, such as Cathay Pacific, ResMed, Wyeth, Woolworths, IBM GSA, Sigma Pharmaceuticals, Schneider Electric, Capital Finance, Subaru, AAMI and Bullivant's health products. The specialised centre has also developed an office park with office suites available on both a freehold and leasehold basis. A concentration of finance companies is emerging with Capital Finance and growing interest in professional suites for accounting and finance specialists. Norwest has a strong focus on amenities with four childcare centres as well as restaurants, gyms, parklands, walking trails and lakes. Unlike many parts of Western Sydney, the business park has an advanced communications infrastructure. The area also contains a retail centre with approval capped at 8,000 square metres, the Crown Plaza Hotel, the national headquarters of Hillsong Church and around 20,000 square metres of bulky goods space including Bunnings and a Homemaker centre.

One of the key strengths of Norwest is single ownership and a master-planning process that demands high quality outcomes. Another advantage is the flexible zoning which encourages integrated premises including campus-style accommodation and allows large floor plates, plentiful parking and opportunities to integrate research, manufacturing, management and distribution activities.

The North-West sub-regional strategy forecasts that employment will increase in Norwest to around 30,000 jobs by 2031. This high employment outcome may be difficult to attain in practice unless existing sites are redeveloped. Business parks, often with support of respective governments, compete intensely with each other to attract high-technology companies in industries such as information and communication technologies, bio-technology, pharmaceuticals and advanced materials (Castells and Hall 1994).

A new generation of business parks is emerging, which give even more emphasis to integrating workplaces, entertainment, amenities and residential development within a village atmosphere (Phillips 1993). The Norwest park needs to continually invest in improving the services it offers tenants and owners including childcare, restaurants, walkways and recreational areas. Further challenges include accommodating the growth of small businesses rather than relying on major corporations. These owners and tenants have special needs including business service support, printing facilities and hospitality.

Despite new and proposed investments in transport infrastructure, Norwest is still difficult to get to from many parts of GWS. It needs to be emphasised that many workers in the business park are production and clerical workers who live in Auburn, Baulkham Hills, Blacktown and Fairfield.

10.2.2 Penrith

The Metropolitan Strategy designates Penrith as a regional city. As a regional city it is targeted for planning and development with a full range of government, business, retail, cultural, entertainment and recreational amenities and services. The Regional Cities Task Force, a partnership between the Department of Planning and Penrith City Council, has prepared a new plan for the city centre. This has resulted in a new city vision and the gazettal of a new Local Environmental Plan. Key aims of the plan relevant to economic development include to:

- Strengthen the regional position of the Penrith city centre as a multifunctional and innovative centre that encourages employment and economic growth
- Provide a planning framework for Penrith to fulfil its role as a regional city in the Sydney Metropolitan Region
- Promote employment, residential, recreational and leisure, cultural, social and tourism opportunities within the Penrith city centre
- Respond to the economic and social needs of the region by providing centrally located services and facilities.

Key elements of the city centre plan include:

- 10,000 net additional jobs by 2031 with a focus on high growth industries such as business services, health, education, retail, tourism and cultural activities
- 10,000 new residents in the city centre by 2031
- A new town square and park

- Reconnecting Penrith to the Nepean River to create a riverfront leisure and entertainment precinct
- Developing education precincts, including Nepean Hospital and local campuses of the University of Western Sydney
- Increased residential and commercial floor space in the city centre
- Architectural design competitions for key sites
- Building design to preserve views to the Blue Mountains from the city centre.

Penrith is a significant suburban centre undergoing transformation. In 2001, around 19,000 people were employed in the centre (NSW Department of Planning 2005b, p. 95). The sub-regional plan forecasts that 30,000 people will be employed in the centre by 2031. It is designated as the most significant centre in outer western Sydney with strong retail, commercial, cultural, entertainment and administrative functions, as well and education and health specialisations, alongside major institutions located on the fringe of the CBD. The NSW government is constructing a new state office complex in Penrith to accommodate Sydney Water and sections of the Department of Community Services. The Australian Taxation Office also has a major facility at Penrith.

The retail and services catchment area for Penrith as a regional city includes Penrith LGA, Hawkesbury, western areas of Blacktown, and the Blue Mountains. Penrith is seeking to strengthen its role as a gateway to Sydney from western NSW and develop as an important centre for the South West and North West growth centres. Penrith meets a number of the criteria required for a regional city: a large and growing catchment area, the presence of a rail network, a strong economic base to build on, and growth potential. The centre is also located at a suitable distance from Sydney's two other designated regional cities, Parramatta and Liverpool. Although Penrith is situated in the North-West sub-region, it is not necessarily the gravitational centre of the North-West, which also has strong and emerging centres such as Castle Hill and Rouse Hill and the large centres of Blacktown and Parramatta.

Penrith centre is located on the main western railway line and on the Great Western Highway, and has good access to the M4 Motorway. Penrith is a business service centre for a number of employment areas including St Marys/Dunheved, Emu Plains, North and South Penrith and Erskine Park.

It serves a growing residential catchment. The ADI site, in Penrith and Blacktown, for example, is one of the largest proposed residential developments in Sydney.

The centre has a number of attributes. First, it is surrounded by a magnificent natural setting dominated by the Blue Mountains World Heritage Area and the Nepean River, Mulgoa Nature Reserve and quality sporting and recreation facilities including those at Penrith Panthers Club. Second, the location of the Nepean campus of UWS, the Kingswood campuses of the Western Institute of TAFE and UWS, and the Nepean Hospital, an expanding teaching hospital, all add value to the centre. Third, the location on the main western railway and access to the M4 and M7 motorways provide major links between Penrith and other centres. Fourth, Penrith has very good cultural and entertainment facilities, including the Joan Sutherland Performing Arts Centre, Q Theatre and those at Penrith Panthers Club. Fifth, the centre has a number of strategic development sites including council and state government owned sites in the centre, as well as a number of sites close to the railway station.

In its Centres Vitality and Viability Review, Penrith Council has outlined a number of themes for the development of the centre including:

- A regional business and commercial centre
- A living centre
- A safe and attractive centre
- An accessible centre
- A social and culturally vibrant centre.

To succeed, Penrith centre confronts a number of challenges. One is the distance from the Sydney CBD and long commuting times for local workers. Population and jobs in Penrith are growing at a slower rate than expected. Higher energy prices may negatively impact population growth and business investments. The city also has inadequate public transport from local residential areas accessing the city. Improved access within the city, such as access from the Penrith Panthers Club to the city centre is also required. There is no bus service between Windsor and Penrith. The council has been pursuing housing strategies to encourage diversity and attract more knowledge workers and entrepreneurs.

However, the centre and its environs have a number of potential areas for higher quality housing, recreation and mixed use development. Developments are likely to be predominantly low to medium rise buildings. Strategies are being implemented to improve city lifestyle through provision of a diverse range of dwellings, development of tourism and hospitality opportunities and upgrading walkways and cycleways. Further, the area is experiencing skills shortages in key occupations, particularly trades and technical workers.

10.2.3 Blacktown

Blacktown centre is located approximately 13 kilometres west of Parramatta and around 38 kilometres from Sydney's city centre. The Metropolitan Strategy designates Blacktown CBD as a major centre, comprising a shopping mall, council offices, commercial and residential buildings and community facilities. The Metropolitan Strategy forecasts that employment will increase in Blacktown from 10,200 in 2001 to 15,000 jobs in 2031 (NSW Department of Planning 2005b, p. 95).

Blacktown centre is the major centre in the Blacktown LGA, which is the largest LGA in NSW with a population of around 275,000 people. This creates a substantial catchment area for the centre. It is also the key centre serving some of Sydney's major employment lands including the Western Sydney Employment Hub, Minchinbury, Seven Hills, as well as important employment lands adjacent to Blacktown centre at Kings Park.

The city's second centre is Mount Druitt, designated an emerging major centre, which is well connected to the transport network, and has a significant shopping centre and a TAFE campus. The centre competes with Mount Druitt, Parramatta, Castle Hill and the newly established centre at Rouse Hill, which is accessible for many residents from northern parts of Blacktown.

Blacktown is growing as a major retail centre. It contains a range of activities: retail, administration, commercial, education and recreation. It is also a sub-regional focal point for entertainment and recreation. The centre includes Blacktown RSL, Blacktown Workers Club, as well as rock climbing and ice skating facilities. Blacktown TAFE and hospital are located next to the centre.

Employment by industry sector in Blacktown is reasonably well spread with concentrations in retail (26% of centre jobs), health and community (15.7%), government (14.8%), business services (11.4%), and education (7%) (Blacktown City Council 2003). Westpoint shopping complex has recently been expanded to around 100,000 square metres, community facilities developed and streetscapes upgraded (SGS Economics and Planning n.d.). The centre is dissected by the railway line, resulting in poor connection and identity of the northern precinct.

The southern precinct dominates the CBD. It contains the council administration building and chambers, the Blacktown arts centre, the Blacktown library, the courthouse and police station. The south also contains the predominant concentration of retail, entertainment and commercial space and three commercial office towers. The northern precinct includes many of the centre's entertainment and recreational facilities, bulky goods and community facilities, and some medium density residential development.

The Blacktown centre has a number of strengths. The large population and significant population growth rate are creating opportunities for retail investment and services. Blacktown is also an important public transport hub. It is traversed by the western rail line, intersects with the Richmond line and has a major rail-bus interchange connecting the centre to surrounding residential areas. Both the council and the private sector have made major investments in the centre, specifically improvements in streetscapes, community facilities and in increasing retail supply. The council has significant landholdings in the centre.

In terms of employment, though, the centre is struggling. Despite the rapid population growth in the catchment, employment in the centre is relatively stagnant. The departure of the RTA was a blow to the centre. Blacktown has not developed a significant commercial office market, and the council has found it difficult to attract new commercial office investment and tenants, but is now implementing new strategies to attract market interest.

To attain a 50% increase in jobs, the centre faces a number of challenges. First, further improvements in urban design are being addressed: excessive space taken up by parking, improving north-south connections, and improving shade and open space. Second, the council is seeking to create a distinctive commercial office market through encouraging the redevelopment of sites, addressing negative perceptions from developers and using council land to lever development opportunities. Third, traffic congestion at key intersections needs to be alleviated. Finally, the centre needs to strengthen investment to overcome a number of impediments to the development of a commercial office market.

Given the growth of Blacktown LGA, the North West Growth Centre, as well as major corporate investment in employment lands, the Blacktown centre is well positioned to capture spin-offs from growth. A number of opportunities were identified by Urbis JHD (2006) including:

- Developing the centre as an arts and cultural centre, and expanding learning opportunities for young people.
- Encouraging redevelopment of Kings Park employment lands bordering the northern precinct.
- Utilising surplus and council lands as catalysts for investment.
- Development of the showground site for sports including AFL and young people's activities.
- Continuous street and public domain improvements as a partnership between the council and the business community.

10.2.4 Castle Hill

Castle Hill is a high growth centre located in a rapidly growing high income area in Baulkham Hills. The centre is located on the proposed North-West Metro line and has been designated a major centre by the Metropolitan Strategy. Its status is due to the fact that it is the major shopping and business centre for the surrounding area and has a full scale shopping mall, council offices, taller office and residential buildings, central community facilities and a minimum of 8,000 jobs.

The catchment for the centre includes much of Baulkham Hills and parts of Hornsby. The centre is predominantly a retail centre based around the owners of Castle Towers, but is showing signs of diversifying into new areas with an emerging café and restaurant precinct. Baulkham Hills Council has outlined the following goal for Castle Hill:

> "The CBD as the heart of the community, should be a vibrant and energetic place with pedestrian activity, restaurants, cafés, retail services and places for people to enjoy and meet taking full advantage of existing and proposed public transport opportunities and significant heritage items".
>
> Baulkham Hills Council (2008)

The centre is being developed around an expanded retail centre and new developments with commercial offices, and community, recreation, cultural and education facilities as well as housing developments. The centre has two large department stores, convenient parking and diversified shopping opportunities.

In 2001, there were 9,100 jobs in the centre and this is forecast to increase to 12,000 by 2031 (NSW Department of Planning 2005b, p. 95). Our judgement is that these forecasts may be too low, particularly if the centre develops distinctive advantages as a commercial office market and pursues hospitality and entertainment opportunities.

The centre has a number of strengths. First, around 90% of the centre is owned by QIC and Baulkham Shire Council, which provides an important foundation for future growth. Second, Castle Towers is recognised as one of Australia's most successful shopping centres and the centre itself is characterised by high quality design and amenity. Third, the area has experienced high rates of growth of household incomes. Fourth, the centre is close to the orbital network and, has substantial commitments to improve public transport including the Castle Hill to Blacktown Transitway and the proposed North-West Metro line, which will connect the centre to Sydney's rail network.

Important challenges for the Castle Hill centre include managing the pace of growth with local infrastructure and services needing to keep up with private sector investment. The centre needs to be well positioned to accommodate high density residential development, which complements surrounding lower density development, around the proposed railway line. Planning new bus routes to access the centre are important priorities. One of the biggest threats to Castle Hill is the competitiveness of a growing Rouse Hill shopping centre.

More affluent suburbs will underpin the growth and competitiveness of Castle Hill. Key priorities include improving traffic circulation, providing sufficient land to accommodate growth, planning for new transport infrastructure including a bus/rail interchange, and attracting quality higher residential densities. Given the skills base of the sub-region, and its location in an emerging transport network, Castle Hill may become an important commercial office market. New opportunities are likely to emerge for local professionals wanting to buy or lease small and high quality office space close to where they live.

10.2.5 Rouse Hill

Rouse Hill was originally identified as a regional centre in the North-West Regional Environmental Plan. Its development was delayed but stage 1 has now opened. The centre, owned and managed by Lend Lease, is acknowledged to be of high quality and is attractive to shoppers because of the ease of parking, diversity of shops and quality of urban design. The Metropolitan Strategy forecasts that the centre will grow rapidly, with an employment capacity target of 9,000 jobs by 2031. The location of the centre in one of Sydney's most rapidly growing residential areas, and along the North-West Transitway and the proposed North-West Metro line, will spur further growth, and encourage the diversification of the centre into commercial office, health and community services, education activity as well as additional entertainment. The 2031 target of 9,000 jobs is ambitious; yet because of favourable locational attributes, it is achievable.

10.2.6 North-West employment lands

The North-West sub-region has the largest concentration of employment lands in metropolitan Sydney, with around 4,175 hectares zoned for employment lands (Department of Planning, unpublished data). The sub-region includes major employment lands in Castle Hill, Riverstone, Dunheved, South Penrith and a major concentration at the Western Sydney Employment Hub.

Most of Sydney's new greenfields areas for employment lands are in the North-West, including the North West Growth Centre and the Western Sydney Employment Lands Investigation Area, which covers more than 10,000 hectares between the Western Sydney Employment Hub and Badgerys Creek.

10.3 Conclusion

Most employment growth in the two sub-regions is expected to be concentrated in designated strategic centres and employment lands. High employment growth centres are located in the two sub-regions, including two regional cities (Parramatta, Penrith), four specialised centres (Sydney Olympic Park, Westmead, Norwest and Bankstown/Milperra) and four major centres (Blacktown, Bankstown, Castle Hill and Rouse Hill). The two sub-regions also contain around 55% of all of Sydney's employment lands, and, with the development and release of the massive Western Sydney Employment Lands Investigation Area, this share is expected to increase significantly. Strong strategic centres and competitive employment lands are critical for the economic and employment futures of both sub-regions.

11 The employment strategies

11.1 Our approach to the strategies

Our strategy proposals are interim in that they are designed to be continuously superseded, such is our approach to the employment generation task. Like its constituents, a region must be a place of learning and dynamic adjustment. So too the strategies that drive its composition must be based on effective design and implementation and evaluation so that learning occurs systematically and continuously with the goal of dynamic adjustment ever in sight. It is logical, therefore, that the strategies be seen as temporary, always requiring adjustment and replacement as they fall short in achieving their objectives and as better ways of achieving the targets emerge.

That said, we are confident that our strategies would have an enduring and successful impact. We note particularly the need for some strategies to be ongoing and fulsomely supported.

We divide our strategies into the three domains that we argue throughout this report are constitutive of regional economic and labour market composition, hence we propose strategies grouped into territorial competence measures, infrastructure measures and urban structure measures.

Within each of these three domains we propose two types of initiatives. One type we call 'light horse initiatives', named after the M4/M7 Light Horse Interchange, because of its symbolism as an enduring structure for Western Sydney. The Light Horse Interchange is visible from many directions, has a key linking and networking function and is rich in meaning as an iconic Western Sydney public installation. We also like invoking, with respect, the memory of the Light Horse regiments, groups of ordinary horsemen, many from Western Sydney, prepared to engage boldly on new terrain, with different tactics and against the odds. We deliberately propose the name 'light horse initiative' to resonate verbally with the more common phrase 'lighthouse initiative', again to lay a specific claim that the measure is proudly Western Sydney based.

We also propose adjoining strategies which we call 'composition initiatives'. In other words these are aimed at building the desired composition of the region.

We were tempted to have a third strategic category called 'measurement and monitoring initiatives'. Yet we have decided to incorporate measurement and monitoring actions into both the light horse and the compositional initiatives, such is where measurement and monitoring actions belong, blended with the processes of change not sitting separate from them.

Finally, we do separate out our specific governance initiatives as well as recording them with each of the trilogy of domains as appropriate. Governance is a key part of the implementation process and critical to the success of the initiatives. For these reasons we think it appropriate to discuss governance initiatives as an additional section.

For most of the strategies, with the exception of the infrastructure strategies, we have identified the likely resource costs of the strategy. The resource cost identifies the start-up costs of the strategies. Ongoing funding for many of the strategies could be sourced from existing government programs. Except where stated, the implementation of the strategies is the responsibility of a coalition of local councils, other government agencies and business groups.

11.2 An introduction to the strategies

This chapter amplifies our argument that effective strategies for achieving the employment targets for Western Sydney need the integration of actions across the three domains of:

- infrastructure
- urban structure
- territorial competence.

These domains must be seen as acting in concert. Moreover, attention to each and all of these domains acknowledges the centrality of the urban condition in generating the desired economic and labour market conditions. Getting the functioning of the city right is critical to getting the functioning of the regional economy and the regional labour market right.

The strategies also take seriously the complementary nature of business conditions, living conditions and the achievement of a form of economy that is durable and environmentally sustainable. These compositional elements of society can no longer be separated. Our strong belief is that there is no longer a distinction between the business environment, the people environment and environmental quality.

The strategies are grouped into our three domains. It should be noted, though, that many of the strategies overlap with other domains. Importantly, each strategy's effectiveness is maximised only in the presence of the others. For this reason, our strategies must be seen as a total package of inter-related and necessary actions rather than a menu for selection and partial implementation.

Each of the strategies is described in a different section under the following headings:

- Code
- Name
- Status
- Custodian(s)
- Goals
- Description
- Partnerships
- Timeframe
- Commencement
- Resources.

These headings are self-explanatory, although a comment on 'partnerships' is warranted. Under this heading we nominate those agencies likely to take responsibility for the development of the initiative. It should be noted that the partners nominated are not intended to be at the exclusion of local government agencies. In our view, as emphasised elsewhere in the report, partnerships as a matter of course should include coalitions of local government agencies. Where initiatives are focused at sub-regional levels, then sub-regional groupings of local government representatives would be an appropriate mode of inclusion.

11.3 Territorial competence strategies

As we argue throughout this report, especially in chapters 1, 2 and 3, achieving the desired employment targets for Western Sydney depends on building a regional platform that encourages territorial competence. This has seven components:

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1. Geographical prowess, which is the region's capacity to deliver its competitive advantages, build entrepreneurial confidence and engage in stable ways in supply chain and marketing relationships within the region and elsewhere

2. Business and people climate, which is the capacity of the region to provide fruitful and rewarding day-to-day experiences for both the business community and the region's residents

3. Talented workers, which are the region's key to ensuring value-adding within all economic engagements and transactions

4. Regional knowledge infrastructure, which is ensuring the ongoing existence of mechanisms and propensities for the creation and transfer of competitive knowledge

5. SME and entrepreneurship policies, which encourage successful enterprise formation and operation at a variety of scales and operational domains

6. Regional innovation systems, which are the thick layers of distributed knowledge that circulate in a federated way to ensure the efficiencies and competitiveness of firms, institutions, government agencies and research and educational organisations

7. Effective governance systems which, through embracing collectivity, organisational strength and innovation build common purpose and successful outcomes as natural regional occurrences.

This section presents a set of strategies that attempt to achieve these seven interrelated outcomes. The measures are summarised in the following pages. The measures, as with the infrastructure and urban structure strategies, incorporate both lighthouse strategies and composition strategies.

11 The employment strategies

Initiative code

Territorial competence TC1

Name

The Knowledge and Innovation Platform

Status

Lighthorse Initiative

Custodians

The Knowledge and Innovation Platform has a cross sectoral management coalition at its core. This coalition comprises the Western Sydney business community, its government agencies and the University of Western Sydney.

Goals

1. Build regional competitiveness
2. Promote economic flexibility
3. Engineer connectivity
4. Promote innovation through knowledge development and transfer.

Description

The Knowledge and Innovation Platform would be Western Sydney's prime knowledge and innovation device. The Platform would function as an information storage, transfer and interaction device.

It would be centred on a telecommunications grid that binds Western Sydney into information and knowledge flows; learning activities; innovation activities; and networking activities.

These activities would take place internally to Western Sydney organisations and, crucially, across these organisations to produce cross-sectoral strengths and competitive qualities.

The Platform would incorporate existing organisational sites as well as new public access sites to be incorporated into the proposed Western Sydney Enterprise and Training Hubs (see initiative Urban Structure US1).

Implementation

The Knowledge and Innovation Platform would be an initiative of the University of Western Sydney as complementary to its Higher Education Endowment Fund (HEEF) proposal for an eResearch network -- an information and telecommunications platform to link its Western Sydney science campuses to an advanced technology Science Precinct at its Parramatta North campus.

The initiative should be partnered by the NSW Department of State and Regional Development as part of the NSW Innovation Strategy.

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The HEEF proposal, if funded, has the potential to deliver the essential hardware for the commencement of the Knowledge and Innovation Platform initiative.

Business and government agencies would be invited into the HEEF IT initiative to develop it fully into the Knowledge and Innovation Platform.

Initial specialisations that can be encouraged as Knowledge and Innovation Platform activities include:

- nanotechnology
- medicine and health
- food processing
- engineering
- transport and logistics
- finance
- business practices
- urban sustainability
- social and community services.

This is not intended to be an exclusive list. We propose these specialisations for their being areas of interest, competence or responsibility of the cross-sectoral partnership.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative requires further consideration and planning, and major government commitment.

Resources

The estimated resource cost of this initiative is $10 to $20 million over and above the $110 million HEEF bid by UWS.

Initiative code

Territorial competence TC2

Name

Best practices competitiveness scheme

Status

Composition initiative

Custodians

The scheme should be jointly administered by an appropriate coalition of government agencies and business groups.

Goals

1. To enhance territorial competence
2. To enhance local business competitiveness
3. To advance government effectiveness and efficiency.

Description

The scheme would have three core activities:

1. The development and use of benchmarking metrics and monitoring to show ongoing territorial competitiveness in each of the local government areas, the sub-regions and Western Sydney as a whole
2. The development and use of benchmarking metrics and monitoring to show ongoing sectoral competitiveness in each of Western Sydney's key employment and business sectors
3. The allocation of responsibility for application and review of sub-regional and sectoral performance including the involvement of stakeholders in betterment activities.

Partnerships

The key partner would be the NSW Department of State and Regional Development as part of the NSW Innovation Strategy.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative could commence immediately.

Resources

The estimated resource cost of this initiative is $0.2 million.

Initiative code

Territorial competence TC3

Name

Business and people climate monitoring

Status

Composition initiative

Custodians

This initiative should be conducted by a partnership between business, government agencies and the Urban Observatory (see initiative Urban Structure IF1)

Goals

1. To enhance Western Sydney's business and people climate
2. To reveal impediments to business location and operation with a view to amelioration
3. To reveal positive and negative components of Western Sydney living with a view to enhancement.

Description

The initiative would have three core activities

1. The development of a Western Sydney business satisfaction index with diagnostic components
2. The development of a Western Sydney quality of life index with diagnostic components
3. The development of a long term business outlook index with diagnostic components.

Partnerships

The key partner would be the NSW Department of State and Regional Development as part of the NSW Innovation Strategy.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative could commence immediately.

Resources

The estimated resource cost of this initiative is $0.2 million.

Initiative code

<u>Territorial competence TC4</u>

Name

Talented workers initiative

Status

Lighthorse Initiative

Custodians

This initiative should be undertaken by a partnership between business groups, government agencies and the higher education sector.

Goals

1. To build the region's supply of talented workers.

Description

The initiative would have four core activities:

1. The development of an elite workers promotion and calibration scheme. This scheme would include recognition scholarships as well as formal nurturing, training and networking measures. The scheme would promote the elite talented workers as marketing devices to other regions and as role models for young workers and students from inside Western Sydney.

2. The development of a creative workers promotion scheme. This would involve the award of individual and group scholarships to creative workers and creative workers-in-training, based on the Parramatta City Council model. Likewise drawing from Parramatta's experiences, it would provide flexible spaces with government-backed insurances and provisioning.

3. The further development of intensive training and placement schemes for hard-to-place labour.

4. The further development of workforce access schemes especially targeted at women and persons from non-English speaking language and cultural background. These schemes would emphasise language training, skills development and household management and child care initiatives.

Activities surrounding the talented workers initiative would have a highly visible and active presence in the new Western Sydney Enterprise and Training Hubs.

Partnerships

The key partners would be the NSW Department of Education and Training, the Federal Department of Education, Employment and Workplace Relations, the NSW Department of Commerce and the tertiary education sector.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative could commence immediately.

Resources

The estimated resource cost of this initiative is $5-10 million for the development phase.

Initiative code

Territorial competence TC5

Name

Regional business finance scheme

Status

Composition initiative

Custodians

This initiative should be managed by a coalition of representatives from the NSW Treasury, the NSW Department of State and Regional Development, the finance sector, and the tertiary education sector.

Goals

1. To enhance access to start-up finance for Western Sydney enterprise initiatives
2. To advance skills in financial management among Western Sydney enterprises

Description

The initiative would have three core activities:

1. The development of ongoing information dissemination and training activities to build skills in financial management among the region's enterprises.
2. The development of new financial products especially ones more appropriate for smaller-scale innovative businesses and those involved in start-up activity.
3. The supply of rescue and resuscitation services and advice in order to minimise business distress and collapse.

Partnerships

The key partners would be the NSW Treasury and the NSW Department of State and Regional Development.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $1-2 million.

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Initiative code

Territorial competence TC6

Name

SME and entrepreneurship schemes

Status

Lighthorse Initiative

Custodians

This initiative should be managed by a coalition of representatives from business groups and the NSW Department of State and Regional Development.

Goals

1. The development of Western Sydney as a prime site for entrepreneurship
2. To build Western Sydney into Australia's most desirable place for the establishment and growth of small and medium sized enterprises.

Description

The initiative would have four core activities:

1. The provision of ongoing training programmes and advice bureaux for SMEs via the region's Enterprise and Training Hubs (see initiative Urban Structure US1). In this guise the Enterprise and Training Hubs would become centres for SME incubation and training.

2. The provision of government sponsored flexible office spaces. These would be located in Western Sydney's key regional cities and major centres and in the region's employment lands and new business parks. The urban structures section of this report gives more details as initiative Urban Structure US1.

3. The provision of low cost commercial space in declining industrial zones. These government sponsored commercial spaces would be supplied with government backed insurances, state-of-the-art IT systems and training support.

4. The provision of government sponsored small scale finance schemes. These might involve the establishment of government owned finance wholesale funds or the commissioning of private sector suppliers alongside government guarantees.

Partnerships

This initiative should be led initially by the NSW Department of State and Regional Development.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $5-10 million.

Initiative code

Territorial competence TC7

Name

Regional innovation system monitoring program

Status

Composition initiative

Custodians

The scheme should be jointly administered by an appropriate coalition of government agencies, business groups and the tertiary education sector.

Goals

1. The development of a Western Sydney regional innovation system
2. The inculcation of innovation practices within Western Sydney businesses, organisations and government agencies as normal activity
3. The reporting of innovation on a regular basis at all operational levels of businesses, organisations and government agencies
4. The achievement of a continuous stream of innovative outputs.

Description

The Western Sydney regional innovation system monitoring programme would be based on a best practice innovative region.

Partnerships

The key partner for this innovation monitoring programme would be the NSW Department of State and Regional Development as part of as part of the NSW Innovation Strategy.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $2-3 million.

Initiative code

Territorial competence TC8

Name

Spatial business formations scheme

Status

Lighthorse Initiative

Custodians

This initiative should be managed by a coalition of representatives from business groups and the NSW Department of State and Regional Development.

Goals

1. To identify spatial business formations appropriate to Western Sydney including clusters, value-adding chains, international linkages or other supportive territorial formations
2. To build and strengthen Western Sydney's spatial business formations as key sites and domains for competitive business formations and practices.

Description

The spatial business formations scheme would have three core activities.

1. The appointment of business formations coordinators with the initial brief of promoting business formations in five selected business formations
2. The development of industry associations to correspond with the five selected business formations
3. The development of ongoing information sharing activities involving the business formations coordinators, the industry associations and the major participants within the Knowledge and Innovation Platform.

Partnerships

The key partner would be the NSW Department of State and Regional Development. At the outset, each of the five business formations coordinators should be housed in a separate local government office appropriate to industry or business specialisations in that local government area.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative could commence immediately.

Resources

The estimated resource cost of this initiative is $1-2 million.

11 The employment strategies

Initiative code

Territorial competence TC9

Name

Childcare initiative

Status

Composition initiative

Custodians

The child care centres should be operated by a successful tenderer and be responsible to the host local government authority.

Goals

1. To create the provision of child care within employment zones as a normal portion of economic infrastructure
2. To operate the centres as sites of best practice with opportunities for innovation dispersal and advice.

Description

This initiative would rely on government support to establish best practice child care facilities at two selected sites of employment, one in each sub-region. The centres could operate conjointly with tertiary education training in early childhood services.

Implementation

This key partner would be the NSW Department of Community services.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $0.5 million.

11 The employment strategies

Initiative code

Territorial competence TC10

Name

Hard to place labour initiatives

Status

Composition initiative

Custodians

Training and placement schemes should continue to be operated by a consortium of government and non-government agencies; with monitoring initiatives to be undertaken by the Urban Observatory (see Urban Structure IF1).

Goals

1. To further extend labour training and placement schemes to address hard to place labour
2. To monitor progress in labour force participation at fine geographical scales.

Description

Initiatives to be devised in conjunction with pre-existing labour training and provision agencies.

Partnerships

The key partners would be the NSW Department of Education and Training and the Federal Department of Education, Employment and Workplace Relations. A possible strategy would be a partner to appoint an independent expert to undertake an audit of labour market outcomes among hard-to-place groups during the last decade; and prepare a discussion paper outlining potential pathways for betterments.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative could commence immediately.

Resources

The estimated resource cost of this initiative is $0.2 million.

11.4 Urban structure strategies

We have shown in earlier chapters that the development of a successful, jobs-generating Western Sydney regional economy involves the development of an effective, supportive, robust urban structure for the region. We have identified clear advantages of paying attention to urban structure. These involve seven things.

1. Enhancing the movement of people and goods into, out of, and across the region

2. Moving the region forward as an environmentally sustainable territory

3. Improving the liveability of the region especially through reductions in commuting times and distances

4. Providing the benefits of urban concentration through the promotion of the region's cities and major centres

5. Improving the region's competitive spaces through the provision of well-provisioned employment lands, business parks and other specialist business and industrial spaces; and thereby build concentrations of successful, jobs generating producers

6. Nurturing the region's moves to build dense networks of co-located and connected enterprises

7. Enlivening the Metro Strategy's City of Cities policy including by the generation of a new spatial diagram for the metropolitan area which captures Western Sydney's aspiration to be a world class regional economy that supplies quality jobs for its residents.

11 The employment strategies

Initiative code

Urban Structure US1

Name

Enterprise and Training Hubs

Status

Lighthorse Initiative

Custodians

The scheme should be jointly administered by an appropriate coalition of government agencies, business groups and the tertiary education sector.

Goals

1. To create fixed sites for the enactment of training, networking and enterprise formation and facilitation ventures in the region's cities, major centres and employment lands
2. To provide fixed spatial focus points for the development of territorial competence.

Description

The hubs would be sited and run in convenient locations in the region's cities and major centres and on major employment lands. They would provide the opportunity for training at both an individual level and in teams. They would be involved in skills formation, knowledge advancement and transfer, enterprise management training and as suites for networking. Seven hubs would be established initially, one each at Sydney Olympic Park, Norwest Business Park and the Western Sydney Employment Hub; and in the regional cities and major centres of Parramatta, Blacktown, Bankstown and Penrith.

Partnerships

Key partners would include the Department of State and Regional Development, the Department of Education and Training and the Federal Department of Education, Employment and Workplace Relations.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $10-15 million.

Initiative code

Urban Structure US2

Name

Flexible office space initiatives

Status

Composition initiative

Custodians

The scheme should be jointly administered by an appropriate consortium of government agencies, business groups and local councils.

Goals

1. To provide cheap start-up spaces for office-based enterprises
2. To nurture start-up small business ventures
3. To assemble on-site business training and support for start-up ventures.

Description

The flexible spaces would be funded by government initially and located in the region's cities and major centres. They would be configured to provide small area spaces for start-up businesses. They would be provided with on-site IT and secretarial support. Enterprise management training would be provided on a regular basis.

One suite of office spaces would be provided in each local government area to operate under council management. The space should be purpose designed.

Partnerships

A key partner is the NSW Department of State and Regional Development.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $8-12 million.

Initiative code

Urban Structure US3

Name

Initiatives to strengthen the regional cities and major centres

Status

Lighthorse Initiative

Custodians

The development of supportive initiatives, including infrastructure initiatives, to build a genuine City of Cities, including a network of thriving regional cities and major centres, must be coordinated jointly by NSW Treasury, Department of Planning, Department of State and Regional Development and the Ministry of Transport in collaboration with the relevant local councils.

Goals

1. To ascertain the specific needs of each regional city and major centre with the NSW government's Centres Policy
2. To build hard infrastructure for strengthening the operation of the regional cities and the major centres
3. To generate and implement soft infrastructure and networking proposals to strengthen the regional cities and the major centres
4. To enable the regional cities and major centres to achieve the task of generating one third of net additional employment growth for Western Sydney over the next twenty-five years.

Description

Initiatives need to be devised and implemented would be developed which strengthen the regional cities. This need arises from the current underperformance of the regional cities and major centres in employment generation and the inadequate hard and soft infrastructure capacity available to them to support employment generating initiatives.

Critical here are two things: the generally poor transport linkages between the regional cities, centres and their hinterlands; and the relatively poor amenity many of the regional cities and centres offer in terms of both business facilities and public spaces. The successful development of Parramatta's Justice Precinct is an example of the quality urban space that can be constructed through cooperative planning involving federal, state and local government agencies.

The initiatives should be generated after a detailed audit of the specific needs of each of Western Sydney's regional cities and major centres.

Partnerships

The key partner for this initiative is the NSW Department of Planning.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $5-7 million.

11 The employment strategies

Initiative code

Urban Structure US4

Name

Acceleration of the Western Sydney Employment Hub and ongoing development of Western Sydney's employment lands

Status

Composition initiative

Custodians

See section on governance initiatives

Goals

1. To accelerate the operation of the Western Sydney Employment Hub
2. To develop the Western Sydney Employment Hub as a site of diverse economic activity requiring a variety of configurations, mixtures of employment densities, supportive amenity and high quality enterprise facilitation and training support services
3. To use the successful experience of the development of the Western Sydney Employment Hub to guide additional large scale Western Sydney employment lands projects
4. To ensure the provision of advanced infrastructure to Western Sydney's employment lands.
5. To enhance freight movements to and from Western Sydney employment lands
6. To enhance telecommunications links with Western Sydney employment lands
7. To ensure the availability of public transport for workers at Western Sydney employment lands freight movement and transfers.

Description

The NSW government should announce guaranteed funding and development commitments to the Western Sydney Employment Hub as a matter of urgency. The Department of Planning and the Department of State and Regional Development would coordinate stakeholder input into the master planning of the Western Sydney Employment Hub to ensure the development of internationally competitive diverse, multiply-configured, high amenity employment spaces.

Thereafter, NSW government agencies should act in concert to ensure the systematic provision of additional well-provisioned large scale employment lands.

Partnerships

The key partners for this strategy are the Department of Planning and the Department of State and Regional Development.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative should commence immediately.

Resources

The estimated resource cost of this initiative is $4-6 million.

Initiative code

Urban Structure US5

Name

The development of a new large scale business park

Status

Lighthorse Initiative

Custodians

The preparation and operation of a new business park should be jointly administered by an appropriate consortium of government agencies, business groups and local councils.

Goals

1. To investigate the site for the development of a new large-scale business park
2. To devise strategies for the rapid development and operation of the new park.

Description

Chapter 10 sets out criteria for the selection of a site for the development of a new large-scale business park. These should be enacted to provide certainty in the nomination of a new large scale business park.

The development of a new large scale business park should proceed in parallel to the development of smaller or 'boutique' business park ventures across western Sydney. A new large scale business park should not be seen as displacing smaller sized business park developments or threatening jobs in major centres. Rather the initiative should be seen as attracting jobs to western Sydney that would not otherwise relocate to Western Sydney. These should all be seen as essential components of a portfolio of employment lands for Western Sydney.

Partnerships

The key partner for this project is the NSW Department of Planning. Consideration should be given to the inclusion of a significant private sector partner or partners at an early stage of the process.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $0.5 million.

Initiative code

Urban Structure US6

Name

Initiatives to integrate dispersed employment sites

Status

Composition initiative

Custodians

The scheme should be jointly administered by an appropriate consortium of government agencies, business groups and local councils.

Goals

1. To identify and assess knowledge and innovation needs of Western Sydney employers located in dispersed sites
2. To better integrate dispersed employment sites and dispersed employers into the Western Sydney economy
3. To provide specific initiatives for the integration of SMEs from Blue Mountains and Hawkesbury local government areas into a thriving Western Sydney regional economy.

Description

This initiative involves the development of a package of measures designed to integrate those Western Sydney employment sites and employers that are located away from regional cities, major centres or substantial employment lands. This integration should be into a more thickly networked Western Sydney economy. Virtual access to networks should be promoted and should include access to other key projects such as the Knowledge and Innovation Platform, the Enterprise and Training Hubs, supportive training systems and so on.

Particular attention needs to be given to the enterprises, including home-based businesses, that are emerging in the Blue Mountains and Hawkesbury local government areas. Their success depends to a large extent on the quality of physical and digital access given to the Western Sydney economy and to the Sydney basin economy more generally.

Partnerships

The key partner is the NSW Department of State and Regional Development as part of the NSW Innovation Strategy.

Timeframe

The initiative has a five year outlook.

11 The employment strategies

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $0.5 million.

11 The employment strategies

Initiative code

Urban Structure US7

Name

Initiatives to rejuvenate the old industrial sites in West-Central

Status

Lighthorse Initiative

Custodians

The NSW Department of Planning, in conjunction with local governments in the sub-region, should engage a suitable state government agency to lead this initiative. Possibilities include Landcom, a hybrid organisation of agencies from state and local government or a newly created brownfields re-development authority.

Goals

1. To rejuvenate the old industrial sites in West-Central
2. To develop demonstration projects to resolve issues of fragmentation, poor amenity and infrastructure, and residential encroachment and to enhance dynamic efficiencies among local business communities.

Description

The West-Central sub-region developed as a major site of employment lands in two connected phases: the expansion of the mass production sites in the decades immediately following the second world war; and the suburbanisation of industrial and some office based employment between the 1970s and the 1990s. Further net employment growth now depends critically on the re-formulation of the sub-region's employment lands.

This initiative involves the nomination of an agency to devise and implement plans for demonstration projects in brownfields industrial site regeneration. One demonstration project would be completed in each of the five West-Central local government areas. The projects would show best practice in the retention and resuscitation of old industrial sites as employment lands especially through site amalgamation and enhancement.

Implementation

A key partner for this initiative is the NSW Department of Planning.

Timeframe

The initiative has a five year outlook, in the first phase of its enactment.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $2 million.

Initiative code

Urban Structure US8

Name

The Urban Observatory

Status

Lighthorse Initiative

Custodians

The Urban Observatory, like the Knowledge and Innovation Platform, has a business-government-universities coalition at its core. Again the coalition would comprise the Western Sydney business community, its government agencies and the University of Western Sydney.

Goals

1. Build national awareness of the progress of Western Sydney towards establishing an internationally competitive business territory
2. Develop appropriate and cutting edge metrics to demonstrate the progress of the Western Sydney regional economy towards meeting its employment targets
3. Develop other indicators to show progress in business climate, liveability and sustainability goals for Western Sydney
4. Develop systematic pathways to feed data and information into government policy development processes

Description

The Urban Observatory would function as an observatory of urban economy and urban life for Sydney as a whole. This broad perspective would be symbolic of Western Sydney's claim to maturity as a regional economy with complementary - rather than subsidiary - role to play in Sydney's performance as a global city region.

The observatory would enable policy development and practitioner intervention to proceed with a rich, current information base. The observatory would benchmark Western Sydney, along with Sydney's other regions and the city as a whole, against other places. The observatory would also be a prime source for the development and storage of promotional material.

A Western Sydney-based Urban Observatory would be the first UN-HABITAT Local Urban Observatory in Australia. The UN-HABITAT network of observatories were established in response to a decision of the United Nations Commission on Human Settlements, which called for a mechanism to monitor global progress in implementing the Habitat Agenda and to monitor and evaluate global urban conditions and trends.

UN-HABITAT Local Urban Observatories are designated as the ‘workshops’ where monitoring tools are developed and used for policy-making through consultative processes. The Western Sydney-based Urban Observatory would be the focal point for urban policy development and planning where collaboration among policy makers, technical experts and representatives of partners groups is fostered.

The Urban Observatory would be linked to a global network of urban observatories including in the cities of Barcelona (Spain) and Brussels (Belgium). Inter-urban observatory collaboration would enhance the successful development of multidisciplinary measures of urban development as well as enrich local analysis of urban issues especially in relation to quality of life and environmental sustainability.

Implementation

The University of Western Sydney in partnership with other Universities would lead establishment of the Urban Observatory. This would include liaising with international agencies and bringing together a Sydney-based consortium, including a funding package, to promote and implement the initiative.

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative could commence immediately.

Resources

The estimated resource cost of this initiative is $0.25 million per annum on an ongoing basis.

11.5 Infrastructure initiatives

A major key to expanding employment opportunities in the region is the provision of first rate infrastructure. As discussed in chapter 9, the link between infrastructure provision and economic development is clear. The infrastructure strategies in this section are concerned with three main tasks:

- Getting the labour force to workplaces (people transport)
- Getting materials/products delivered (freight transport)
- Allowing stakeholders in the economy to communicate effectively with each other (telecommunications and the internet).

It will not be possible to deliver anything close to the jobs target identified in the Metropolitan strategy without the delivery of appropriate infrastructure. Infrastructure in Western Sydney has the unfortunate characteristic of being overpromised and underdelivered.

11 The employment strategies

Initiative code

Infrastructure IF1

Name

Integrated Western Sydney transport plan

Status

Lighthorse Initiative

Custodians

The development of an integrated Western Sydney transport plan should be undertaken jointly by the Department of Planning and the Ministry of Transport with the assistance of relevant Federal agencies.

Goals

1. To improve access from the west to higher order jobs elsewhere and to jobs within the region
2. To improve access to education and training services
3. To reduce reliance on private vehicles
4. To support the integrated and ongoing development of the region's cities and major centres within the Metropolitan Strategy
5. To provide a set of transport priorities for Western Sydney.

Description

An integrated Western Sydney transport plan is required as a matter of urgency. This arises from deficiencies in the State Plan in respect of transport services for Western Sydney. While measures in the State Plan would have direct benefits for Western Sydney, there remains a need for the development of an integrated set of transport proposals which would better integrate Western Sydney as a place of work and business, and of training and education; provide better access to jobs; and provide quality transport services aligned to the *City of Cities*' aspirations for Western Sydney's regional cities and major centres.

Partnerships

The key partners in the development of an integrated Western Sydney transport strategy would be the Ministry of Transport and the Department of Planning.

Timeframe

The initiative has a one year outlook.

Commencement

The initiative should commence immediately.

Resources

The estimated resource cost of this initiative is $1 million.

11 The employment strategies

Initiative code

Infrastructure IF2

Name

The North West Rail Link

Status

Composition initiative

Custodians

NSW government

Goals

1. To improve access from the north west to higher order jobs elsewhere and along the north west corridor
2. To improve access to education and training services
3. To reduce reliance on private vehicles

Description

The North West Metro is detailed in the NSW government's Sydney Link documentation. The North West Metro has evolved as a hybrid outcome of an historical set of strategies and promises.

There is a need now to re-assess the nature of the North West Metro. On the one hand, admirably, the North West Metro as proposed in its most recent manifestation, could provide a major vehicle for access to the Sydney CBD from Sydney's north west suburban expansion. On the other hand, it removes the opportunities that a dual heavy rail line service as far as Windsor might provide, as well as compromising the benefits of a high speed inner city focused metro rail system.

So, while the extant proposal is supported, there may be a better alterative to this proposal once an integrated Western Sydney transport [plan in prepared and considered (see initiative Infrastructure IF1).

Implementation

This initiative is currently a NSW government priority.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative should commence immediately.

Initiative code

Infrastructure IF3

Name

The West Rail Link

Status

Composition initiative

Custodians

NSW government

Goals

1. To improve access from the west to higher order jobs along the Parramatta to CBD corridor
2. To provide high speed rail services from Penrith to Parramatta
3. To improve access to education and training services
4. To reduce reliance on private vehicles.

Description

The West Metro is nominated as a 'next priority' in the NSW government's Sydney Link documentation. It would involve a metro rail link between Parramatta and the CBD. Sydney Link notes that the Parramatta to CBD corridor is already Sydney's busiest transport corridor, accounting for 9.26 million passenger kilometres of daily travel. The document notes that both road and rail between Parramatta and the city currently operate at capacity. This alone should be ample justification for the advancement of the West Metro project into immediate rather than 'next' priority.

Yet, the Parramatta to CBD corridor is but one part of a major flow of Western Sydney commuters from Penrith (and further) eastwards. The West Metro proposal must provide complementary provision for this more extensive Western Sydney commuter traffic.

Implementation

This initiative should be a NSW government priority

Timeframe

The initiative has a ten to twenty year outlook.

Commencement

The initiative requires further consideration and planning.

Initiative code

Infrastructure IF4

Name

The South West Rail Link

Status

Composition initiative

Custodians

NSW government

Goals

1. To improve access from the south west to higher order jobs elsewhere
2. To improve access to education and training services
3. To reduce reliance on private vehicles.

Description

The South West Rail Link is detailed in the NSW government's State Infrastructure Strategy and in its Sydney Link documentation. It is included in this set of strategies for North West and West Central because of its importance to the Sydney rail network and because of its potential to provide for an eventual rail link into the Western Sydney employment lands.

Implementation

This initiative is a NSW government priority.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative should commence immediately.

Initiative code

Infrastructure IF5

Name

Public transport improvements package

Status

Lighthorse Initiative

Custodians

NSW Ministry of Transport

Goals

1. To enhance operation of the existing public transport system in its service of Western Sydney
2. To enhance jobs access in the regional cities and major centres
3. To enhance access by Western Sydney households to employment opportunities elsewhere in the Sydney region.

Description

The scheme would have six core components:

1. The improvement of service frequencies along rail lines and bus corridors, including in off-peak periods, with common target frequencies across the networks
2. The introduction of express train services that provide regular services between the regional cities, major centres and the Sydney CBD
3. The improvement of reliability of public transport services
4. The harmonisation and integration of ticketing across public transport modes
5. The expansion and improvement of commuter facilities at all railway stations and major bus stops
6. Accelerated rollout of the strategic bus ways.

Partners

A key partner on the project is the NSW Ministry of Transport.

Timeframe

The initiative has a five year outlook.

Commencement

This package of initiatives should be a NSW government priority and should have immediate commencement.

Initiative code

Infrastructure IF6

Name

The arterial roads package

Status

Composition initiative

Custodians

NSW government

Goals

1. To support the development of the City of Cities vision for an integrated set of regional cities and major centres
2. To improve access from the west to jobs within and outside the region
3. To improve access to education and training services
4. To improve the efficiency of private vehicles
5. To improve road freight efficiencies.

Description

The scheme would provide funding for the upgrade and maintenance of the Western Sydney arterial roads network. Investigations should be made to ascertain a priority upgrade and maintenance program. An emergency upgrade package should be made available as a matter of high priority. Ongoing support for the arterial roads system should be a priority following completion of a Western Sydney integrated regional transport plan.

Implementation

This package of initiatives should be a NSW government priority for funding led by the Ministry of Transport and the RTA.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative should commence immediately.

Resources

The estimated resource cost of this initiative is $100 million.

Initiative code

Infrastructure IF7

Name

Freight bottleneck alleviation scheme

Status

Lighthorse Initiative

Custodians

NSW government

Goals

1. To improve freight movement and transfers
2. To improve the efficiency of freight movements
3. To minimise the impacts of freight movement on residents.

Description

While some recent progress has been made on improvements on freight movements in Western Sydney, a great deal more needs to be done. This strategy would articulate closely with proposals arising from the Integrated Western Sydney Transport Plan (IF1) and from freight movement plans in the State Plan and the NSW government submission to Infrastructure Australia. Emphasis should be given to the development of new inter-modal infrastructure in Western Sydney and to the development of new freight-based rail infrastructure. A key component of the strategy is an extension of the M4 for freight traffic so that it links with Port Botany and Sydney Airport.

Implementation

This package of measures to alleviate freight bottlenecks in Western Sydney should be a NSW government priority.

Timeframe

The initiative has a five year outlook in the first instance.

Commencement

The initiative requires further consideration and planning.

Initiative code

Infrastructure IF8

Name

Accelerated telecommunications installation

Status

Composition initiative

Custodians

NSW and Commonwealth governments

Goals

1. To ensure the rapid connection of Western Sydney employment centres to a high speed national broadband network
2. To maximise access to this network by business, government education institutions and households from across the Western Sydney region.

Description

The establishment of a national high-speed broadband network was a prominent election promise by the Rudd Labor Government. The deadline for submission of initial proposals by potential providers is not until towards the end of 2008 and there has not been an announcement of a timetable for acceptance and implementation. There needs to be an acceleration of the development and implementation process.

Implementation

The accelerated installation of a high speed broadband facility for Western Sydney should be a high priority for the Commonwealth government.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative requires further consideration and planning.

11.6 Governance initiatives

Getting the governance mechanisms right for the implementation of the employment strategies could well be the most crucial part of the overall quest to meet the employment creation targets. Of course, the most important quality of an effective governance system is its power to secure the desired achievements. Yet power to get things done is in many ways an intangible quality that is difficult to design for and implement.

One starting point in deciding on an effective governance system is to eliminate possible qualities of a governance system known to be ineffective or undesirable. This is a list of such qualities in a governance system:

- bureaucratic
- inefficient
- centralised
- unaccountable
- risk averse
- decision maker and dispatcher
- rigid.

We know such qualities have been present in the establishment and operation of many regional development agencies around the world; and we know that well-intentioned, well-designed regional development strategies have floundered because of the presence of these qualities, usually via an appointed board or administrator with specified and often legislated-for roles and jurisdictions with externally-managed budgets, staffing, reporting lines and so on.

Our strongly held view is that the governance system underpinning the employment strategies we propose in this report must acquire and build for itself the very qualities that we urge on the region as a whole. In this sense, then, we see an effective governance system as having these qualities:

- continuously temporary
- operationally and resource efficient
- coalitional

- transparent and engaged
- risk embracing
- broker and facilitator
- flexible.

11 The employment strategies

Initiative code

<u>Governance GC1</u>

Name

Governance audit

Status

Lighthorse Initiative

Custodians

A coalition of key organisations to be established including WSROC, GWSEDB, GROW, DoP, DSRD, local government, University of Western Sydney, TAFE

Goals

1. To ascertain the nature, role and funding support of organisations currently engaged in employment strategies in Western Sydney
2. To identify organisational and responsibility gaps and overlaps with a view to enhanced regional efficiencies.

Description

The scheme would have three stages

1. An audit of organisations engaged in employment strategies in Western Sydney in order to ascertain:
    a. how they operate
    b. the role they perform
    c. their source of funding
    d. their deficiencies and successes
2. A systematic 'mapping' of these organisations with a view to identifying overlaps and deficiencies
3. A systematic investigation of how state government initiatives and responsibilities intersect with the goals and operations of the regional organisations
4. A systematic investigation of how federal government initiatives and responsibilities intersect with the goals and operations of the regional organisations; particular emphasis here should paid to the role of the Major Cities Unit and to Infrastructure Australia projects
5. The operation of a brokering process so that gaps and deficiencies be remedied.

Implementation

Consideration to be given to the funding and establishment of a start-up unit.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative should commence immediately.

Resources

The estimated resource cost of this initiative is $0.2 million.

Initiative code

Governance GC2

Name

Governance support funding pool

Status

Composition initiative

Custodians

The funding pool and disbursement should be syndicate comprising representatives from peak councils of business, government agencies and the higher education sector.

Goals

1. To supply funding to start-up and ongoing governance programs
2. To build a stock of effective knowledge and skills in governance systems and practices

Description

The scheme would be responsible for the disbursement of monies on a bi-annual basis for the ongoing governance of the employment strategies. Initial priority would be given to governance programmes in the following activity areas:

- Coalitional governance systems and organisational activities
- Knowledge and innovation platform initiatives
- Training initiatives
- Cross-sector initiatives
- Information technology and telecommunications initiatives
- Sustainability initiatives.

Partnerships

A key partner for this initiative is the Department of Planning.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative should commence immediately.

Resources

The estimated resource cost of this initiative is $1 million.

11 The employment strategies

Initiative code

<u>Governance GC3</u>

Name

Cross-organisational partnerships

Status

Composition initiative

Custodians

The initiative should be operated by a coalition of business, local government and community based organisations.

Goals

1. To broker and generate cross-organisational partnerships in order to increase the levels of learning and innovation in the enactment of employment strategies
2. To target themes at local government area level as an initial incentive for local government organisations to become involved in region-wide employment strategies.

Description

The scheme would promote and then further develop cross-local government partnerships in the following targeted themes:

- Economic development
- Social welfare and community development
- Library and information services
- Cultural development.

Implementation

A key partner for this initiative is the Department of Local Government.

Timeframe

The initiative has a five year outlook.

Commencement

The initiative requires further consideration and planning.

Resources

The estimated resource cost of this initiative is $1 million.

12 The sub-regional employment strategies and the metropolitan strategies

This chapter translates the strategies from chapter 11 into specific sub-regional divisions of responsibility while maintaining a perspective for government action at both state and federal levels. A feature of our work here, shown in table 12.1, is a detailed articulation of the metro strategy recommendations with our own recommendations for employment strategies for the sub-regions.

The chapter reproduces 'the diagram' as figure 12.1 for ready reference.

Table 12.2 then presents a summary of the strategies with a convenient listing of responsibilities and indication of the scale of intervention required.

Table 12.1 Sub-regional employment strategies integrated with Metropolitan Strategies

Strategies	Intersection with Metro Strategy	Implementation and impact			
		Metropolitan	Western Sydney	West-Central	North-West
Platform strategies					
TC1 The knowledge and innovation platform	A2.1 Establish a framework to support innovation across Sydney A2.4 Utilise local assets to encourage learning and innovation See also NSW Innovation Policy		✓✓✓	✓✓✓	✓✓✓
TC2 Best practices competitiveness scheme			✓✓✓	✓✓✓	✓✓✓
TC3 Business and people climate monitoring	G1.2 Improve local planning and assessment		✓✓✓	✓✓✓	✓✓✓
TC4 Talented worker initiative			✓✓✓	✓✓✓	✓✓✓
TC5 Regional business finance scheme			✓✓✓	✓✓✓	✓✓✓
TC6 SME and entrepreneurship schemes	A3.3 Encourage emerging businesses B7.1 Create a zone recognising the role of enterprise corridors		✓✓✓	✓✓✓	✓✓✓
TC7 Regional innovation system monitoring program			✓✓✓	✓✓✓	✓✓✓
TC8 Spatial business formations scheme	A2.2 Strengthen industry clusters		✓✓✓	✓✓✓	✓✓✓
TC9 Childcare initiative			✓✓✓	✓✓✓	✓✓✓

12 The sub-regional employment strategies and the metropolitan strategies

Strategies	Intersection with Metro Strategy	Implementation and impact			
		Metropolitan	Western Sydney	West-Central	North-West
TC10 Hard to place labour initiatives	A3.1 Embed skills development in major redevelopment projects A3.2 Increase integration of employment and housing markets				
Urban structure strategies					
US1 Enterprise and training hubs			✓✓✓	✓✓✓	✓✓✓
US2 Flexible office space initiatives	B3.4 Ensure sufficient commercial office sites in strategic centres		✓✓✓	✓✓✓	✓✓✓
US3 Initiatives to strengthen the regional cities and major centres	B3.1 Establish a stronger centres initiative B3.2 Strengthen centres management B3.2 Use government assets and investment to support centres B4.1 Concentrate retail activity B4.2 Support centres with transport infrastructure and services B6.1 Implement the Parramatta to City corridor plan B5.1 Establish a stringer corridors planning and development initiative C3.1 Renew local centres to improve economic viability and amenity D1.1 Extend the rail and bus networks to connect centres D1.3 Connect regions and economic gateways in the GMR	✓✓✓	✓✓✓	✓✓✓	✓✓✓

Strategies	Intersection with Metro Strategy	Implementation and impact			
		Metropolitan	Western Sydney	West-Central	North-West
US4 Acceleration of the Western Sydney employment hub	A1.6 Improve planning and delivery employment lands	✓✓✓	✓✓✓	✓✓	✓✓
US5 The development of a new large-scale business park	A1.3 Engage with industry regarding employment lands stocks A1.8 Establish a framework for the development of business parks	✓✓✓	✓✓✓	✓	✓✓✓
US7 Initiatives to rejuvenate the old industrial sites in West-Central	A1.3 Engage with industry regarding employment lands stocks A1.4 Contain the rezoning of employment lands to residential zonings across Sydney A1.9 Facilitate the use of old industrial areas B6.1 Implement the Parramatta to City corridor plan		✓✓✓	✓✓✓	✓
US8 The urban observatory	Many intersections with monitoring and forecasting throughout metro strategy but especially section G Implementation and governance	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Infrastructure strategies					
IF1 Integrated Western Sydney transport plans	A2.2 Support magnet infrastructure D2.1 Complete major transport infrastructure projects underway	✓✓✓	✓✓✓	✓✓✓	✓✓✓
IF2 The North West Rail Link		✓✓	✓✓✓	✓✓	✓✓✓
IC3 The West Rail Link		✓✓	✓✓✓	✓✓✓	✓✓

Strategies	Intersection with Metro Strategy	Implementation and impact			
		Metropolitan	Western Sydney	West-Central	North-West
IF4 The South West Rail Link		✓✓✓	✓✓✓	✓✓	✓
IF5 Public transport improvements package	D2.2 Improve reliability and increase capacity of rail services D2.3 Improve the integration of pubic transport D2.4 Improve operational management of existing transport networks		✓✓✓	✓✓✓	✓✓✓
IF6 The arterial network package		✓✓✓	✓✓✓	✓✓✓	✓✓✓
IF7 Freight bottleneck alleviation scheme	B5.2 Strengthen the economic role of the orbital motorway network D5.2 Maximise the efficiency of freight transport and the proportion transported by rail D6 Improve efficiency of all types of freight movements D7 Connect the regions and economic gateways within the GMR	✓✓✓	✓✓✓	✓✓✓	✓✓✓
IF8 Accelerated telecommunications installation		✓✓✓	✓✓✓	✓	✓
Governance strategies					
GC1 Governance audit		✓	✓✓✓	✓✓✓	✓✓✓
GC2 Governance support funding pool		✓	✓✓✓	✓✓✓	✓✓✓

12 The sub-regional employment strategies and the metropolitan strategies

Strategies	Intersection with Metro Strategy	Implementation and impact			
		Metropolitan	Western Sydney	West-Central	North-West
GC3 Cross-sectoral partnerships		✓	✓✓✓	✓✓✓	✓✓✓

Figure 12.1 The diagram

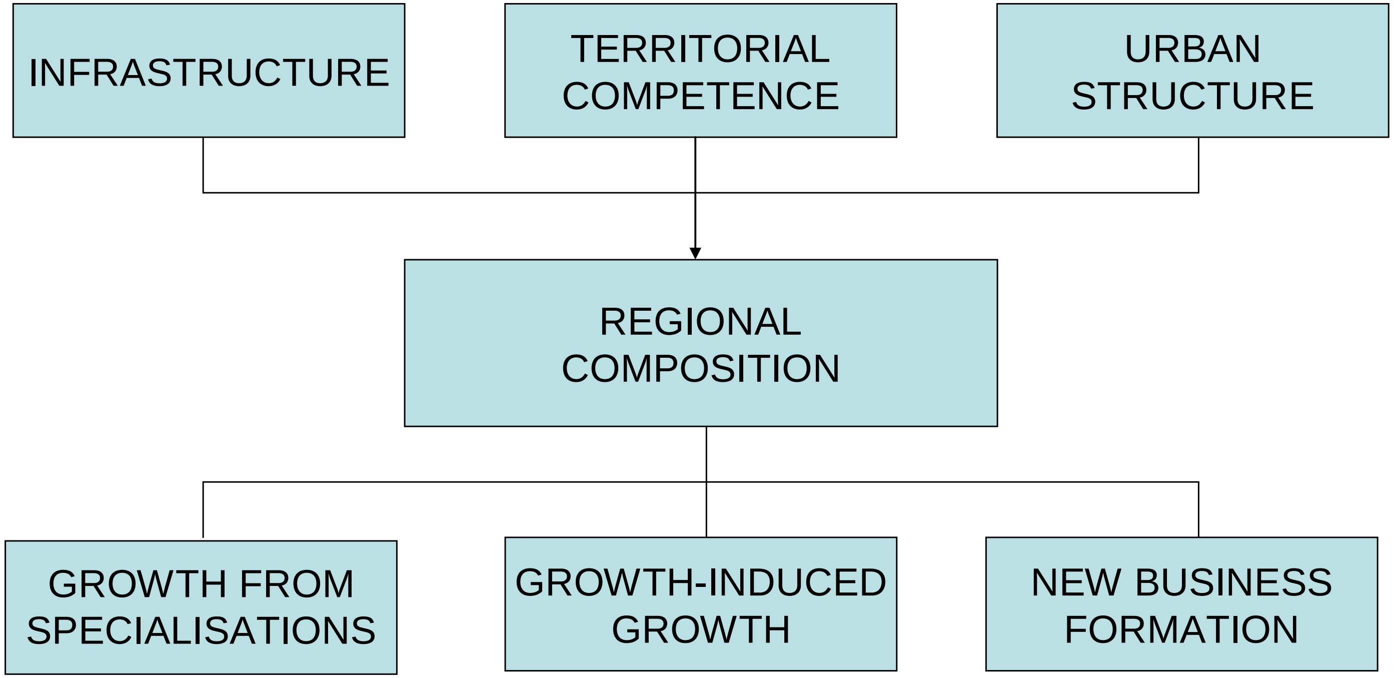

Table 12.2 Strategies map – territorial competence

Strategy	TC1 Knowledge and innovation Platform	TC2 Best practices competitive-ness scheme	TC3 Business and people climate monitoring	TC4 Talented workers initiative	TC5 Regional business finance scheme	TC6 SME and entrepre-neurship schemes	TC7 Regional innovation system monitoring	TC8 Spatial business formations scheme	TC9 Childcare initiative	TC10 Hard to place labour initiatives
Custodian	Coalition	Coalition	Coalition	Coalition	Coalition	Coalition	Coalition	Coalition	2 LGs	Coalition
Partners	DSRD, UWS	DSRD	DSRD	DET, DEEWR and others	Treasury, DSRD	DSRD	DSRD	DSRD	Community Services	DET,DEEWR
Scale	North-West, West-Central, all LGs	North-West, West-Central	North-West, West-Central	North-West, West-Central	North-West, West-Central	North-West, West-Central	North-West, West-Central	North-West, West-Central 5 LGs	2 LGs	North-West, West-Central

Table 12.3 Strategies map – urban structure

Strategy	US1 Enterprise and training hubs	US2 Flexible office space initiatives	US3 Initiatives to strengthen the regional centres	US4 Western Sydney Employment Hub	US5 New large-scale business park	US6 Initiatives to integrate dispersed employment sites	US7 Old Industrial sites in West-Central	US8 The urban observatory
Custodian	Coalition	Coalition	Coalition	Coalition	Coalition	Coalition	New authority or agency	Coalition
Initiation	DSRD, DET	DSRD	Department of Planning	Department of Planning, DSRD	Department of Planning	DSRD	Department of Planning	UWS
Scale	SOP, Norwest, Parramatta, Penrith, Blacktown, Bankstown, Penrith	Every LGA	Major centres	North-West and West-Central	North-West	North-West, West-Central	The 5 West-Central LGs	North-West, West-Central, all LGAs

Table 12.4 Strategies map – infrastructure

Strategy	IF1 Integrated Western Sydney transport plan	IF2 The North West Rail Link	IF3 The West Metro Rail Link	IF4 South West Rail Link	IF5 Public transport improve-ments package	IF6 Arterial roads package	IF7 Freight bottleneck alleviation scheme	IF8 Accelerated telecomm-unications installation
Custodian	Department of Planning and Ministry of Transport	NSW government	NSW government	NSW government	Ministry of Transport	NSW government	NSW government	NSW and Australian governments
Initiation	Department of Planning and Ministry of Transport	NSW government	NSW government	NSW government	Ministry of Transport	Ministry of Transport	Ministry of Transport	Senator Conroy's Department
Scale	North-West, West-Central	North-West	West-Central	West-Central	North-West, West-Central	North-West, West-Central	North-West, West-Central	North-West, West-Central

Table 12.5 Strategies map – governance

Strategy	GC1 Governance audit	GC2 Governance support funding pool	GC3 Cross organisational partnerships
Custodian	Coalition	Coalition	Coalition
Initiation	A start-up unit	Department of Planning	Department of Local Government
Scale	North-West, West-Central, all LGs	North-West, West-Central, all LGs	North-West, West-Central, all LGs

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