2006 Land Use and Employment Survey

Summary Report

February 2007

ADELAIDE CITY COUNCIL

PURPOSE OF THIS REPORT

This report is based on the 2006 Land Use and Employment Survey and is supplemented by other data sources as appropriate. This report provides a brief snapshot of the City in 2006 and provides some measures to inform discussion of the Adelaide City Council's Strategic Management Plan and progress towards some key goals such as the workforce size in the City. The purpose of this report does not include any direct assessment of various policies and any associated impacts as this is not reasonable given the nature of the survey this report is based upon.

KEY FINDING

The number of jobs in the City rose 1.7%[1] over the past year, to a total of 108,007 jobs.

FINDINGS

Working in the City

The growth in the number of jobs was driven by growth in the office, community services and education sectors of the workforce.

Over a quarter of office jobs continue to be involved in government administration at all levels.

Community services growth is based on growth in hospitals and law enforcement whilst universities were the main contributor to growth in the education sector.

The number of vacant and unused establishments in the City continues to fall. The majority is vacant office and retail establishments indicating further capacity for these sectors.

Studying in the City

There was considerable growth in the number of employees in educational establishments over the past few years. This sector continues to be dominated by the universities.

Accommodation designed for students is increasing with the demand for such accommodation likely to continue to grow over the next four years.

Living in the City

The established residential zones in North Adelaide and the south-east and south-west of the City square mile are now being augmented by the increase in apartment complexes in the central activity district north of Grote and Wakefield Streets. Expected growth in the residential population of the City is expected to be mediated by the provision of higher density housing.

[1] Annualised growth rate as the 2005 and 2006 Land Use and Employment surveys were not exactly 12 months apart.

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WORKING IN THE CITY

Where the jobs are …

The majority of the employment continues to be within the central north of the City square mile and the 'Institutional Zone' between North Terrace and the Torrens Lake. However, recent and upcoming developments such as the redevelopment of the tram barns and the Balfour site will continue the expansion of this employment into the south-east and south-west of the City square mile.

As identified by Council and the State government, the area south-west of Light Square has a relatively low density of employment compared to other areas of the central activity district.

Other areas in the City that become apparent in this map are the concentration of employees at various points including the major public hospitals, the Central Market area (including the eastern end of Gouger Street) and some university campuses. As noted in the map, some park lands sites appear more dense than expected as a result of the methods used to create this map.

Linear arrangements of employment of note are the 'main street' areas of Hutt Street in the south-east of the City square mile, and Melbourne Street and O'Connell Street in North Adelaide.

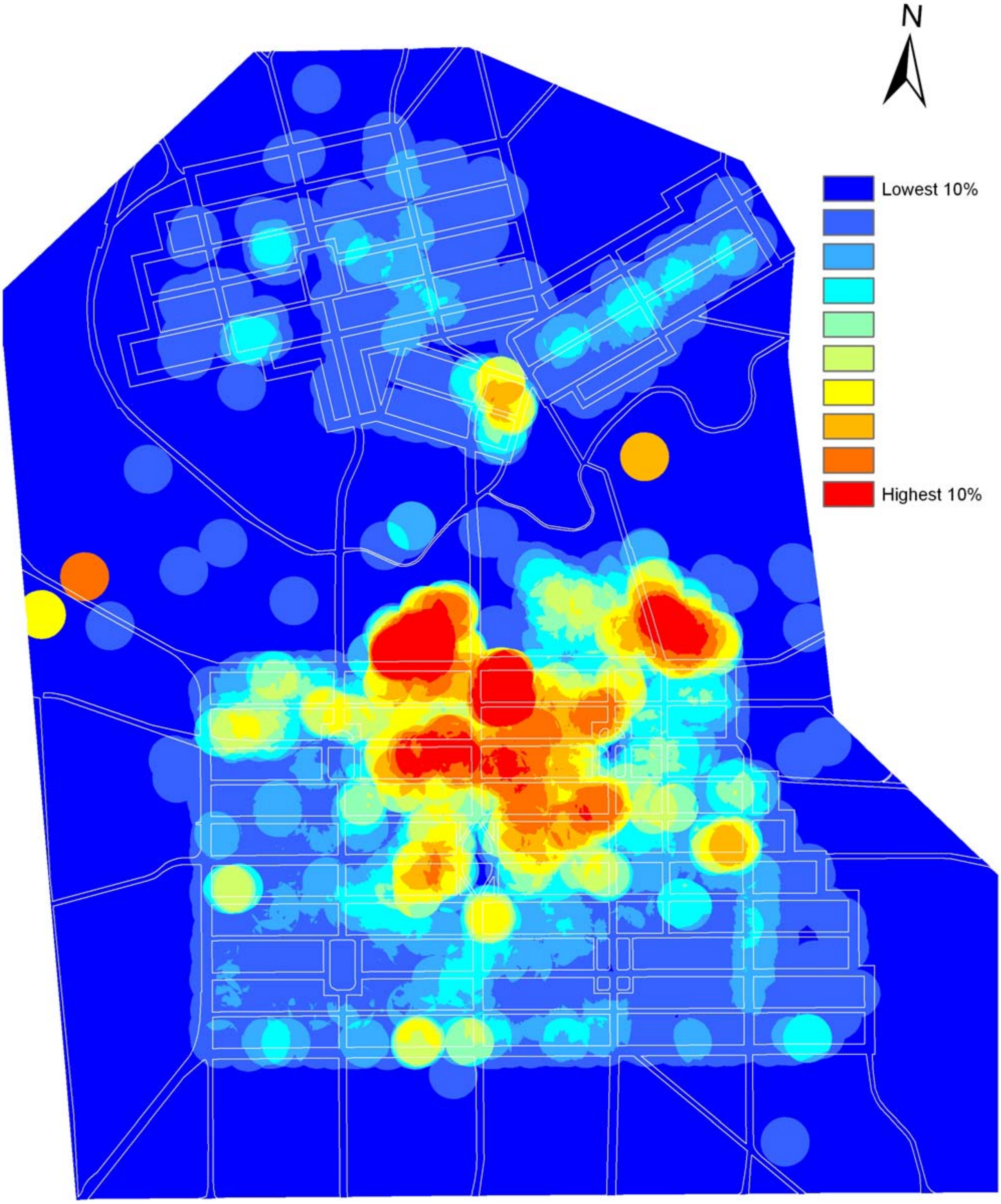
As would be expected, the residential zones in North Adelaide and the south-east and south-west of the City square mile are relatively bereft of employing establishments.

Full-time employees constitute 65.0% of those people employed by City businesses. The proportion of part-time workers is highest in the leisure and recreation (60%), retail (60%), and education (55%) establishment types.

Alongside, and potentially overlapping, the paid employees shown on the following map there are in excess of twelve thousand volunteers engaged by businesses in the City. Predominantly these volunteers work in community services, advertising and marketing, and radio[2]. The vast majority (67%) of these volunteers work part-time. 33% of these volunteers in the City are engaged in one-off events such as festivals and medical/pharmaceutical trials.

[2] Adelaide City Council, *2006 Survey of Organisations Engaging Volunteers in the City of Adelaide*.

Figure 1. Density of Employment, 2006

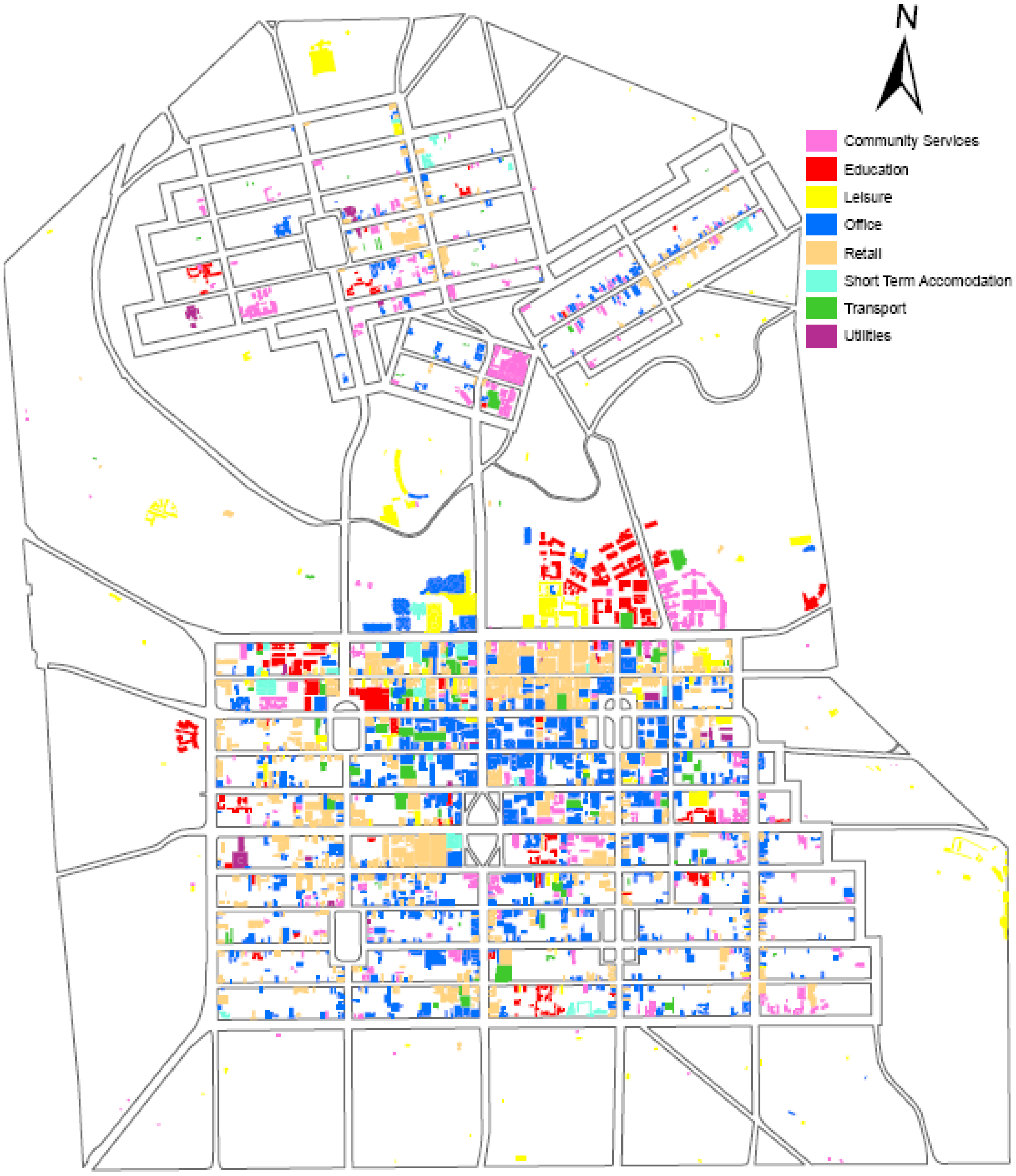


Employment density at some parklands sites appear denser than would be expected as their employment has been placed at a single point rather than allocated across the actual area.

Where the industry types are …

The concentration of commercial activity in the central activity district of the City continues to be dominated by office and retail land use. The Central Market area and the main street precincts of Hutt Street, O'Connell Street and Melbourne Street are also readily identified. Interestingly, of the 'main street retail precincts' the western end of Melbourne Street and the northern end of Hutt Street show a much higher proportion of office and community services use than retail.

Figure 2. Distribution of Selected Land Uses by Building, 2006

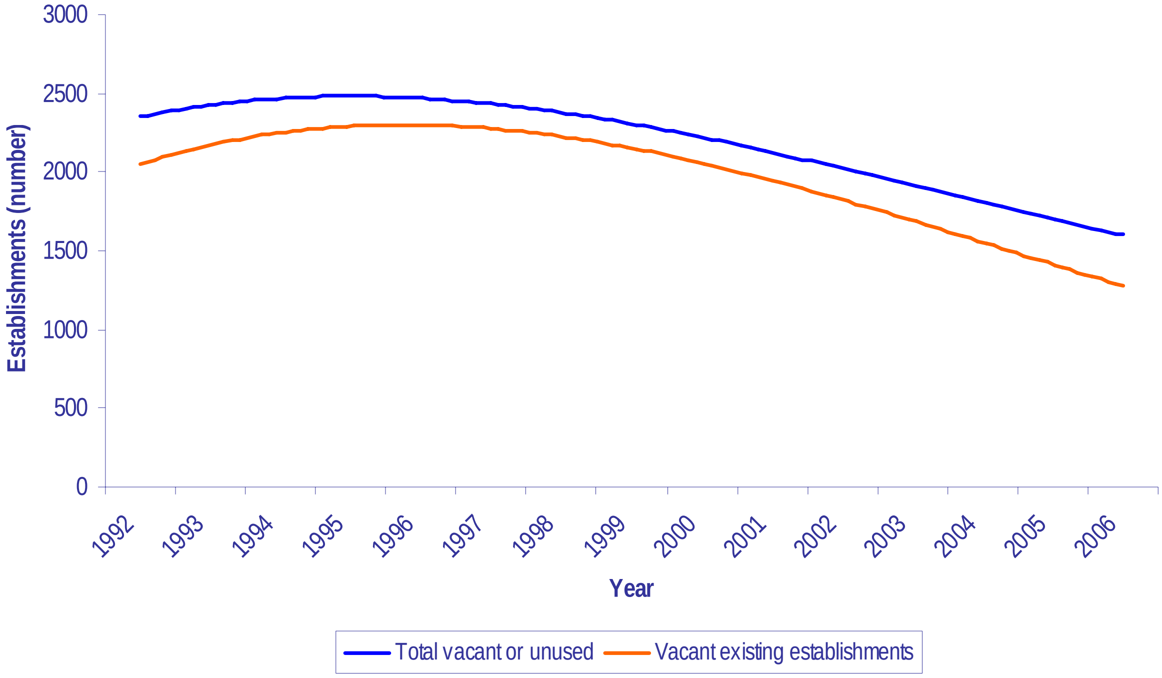


The primary land uses assigned to buildings in the above map are based upon the land use with the greatest floor area in the building or, when the floor area data is incomplete, based upon the land use with the greatest number of employees in the building.

Where is the remaining capacity?

The number of establishments that are vacant or unused has continued a downward trend that was first recorded in the 2002 Land Use and Employment Survey. The following graph shows the change in vacant and unused establishments since 1992.

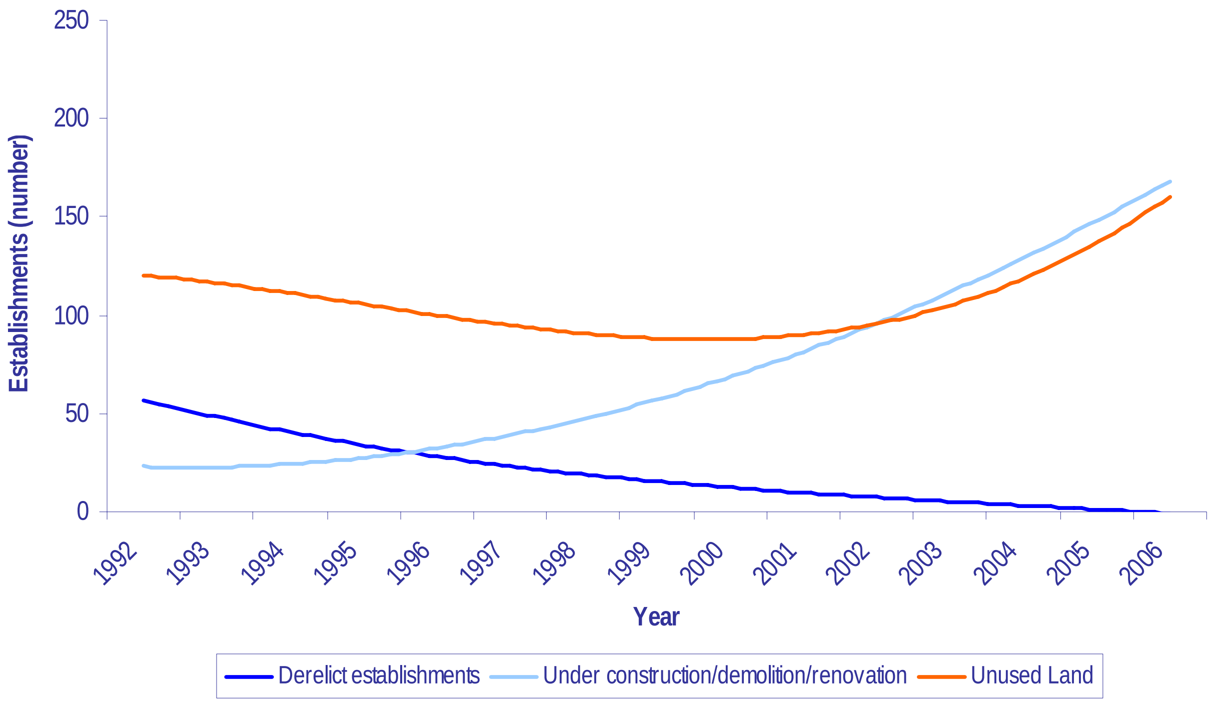
Figure 3. Vacant and Unused Establishments, 1992 – 2006



The recent falls have been driven by a reduction in existing unused or vacant establishments. 47% of the fall in existing unused or vacant establishments has been contributed by office establishments since 2005. This is consistent with decreased office vacancy rates in recent years.

The largest number of vacant establishments continues to be vacant office and retail establishments indicating opportunity and capacity for these sectors to increase.

Figure 4. Vacant Land, Renovations and Derelict Establishments, 1992 – 2006



The number of establishments being renovated or under construction continues to be high in historical terms. 44% of these establishments are offices, with a further 26% being residential establishments. This indicates the arrival of considerable capacity increases in these sectors in the near future.

The cause of the rise in unused land is not clear. The survey collected the number of sites rather than the absolute area of the sites, so it is unclear if the growth in unused land is because of an increased area being vacant or an effect of the subdivision of larger previously vacant sites.

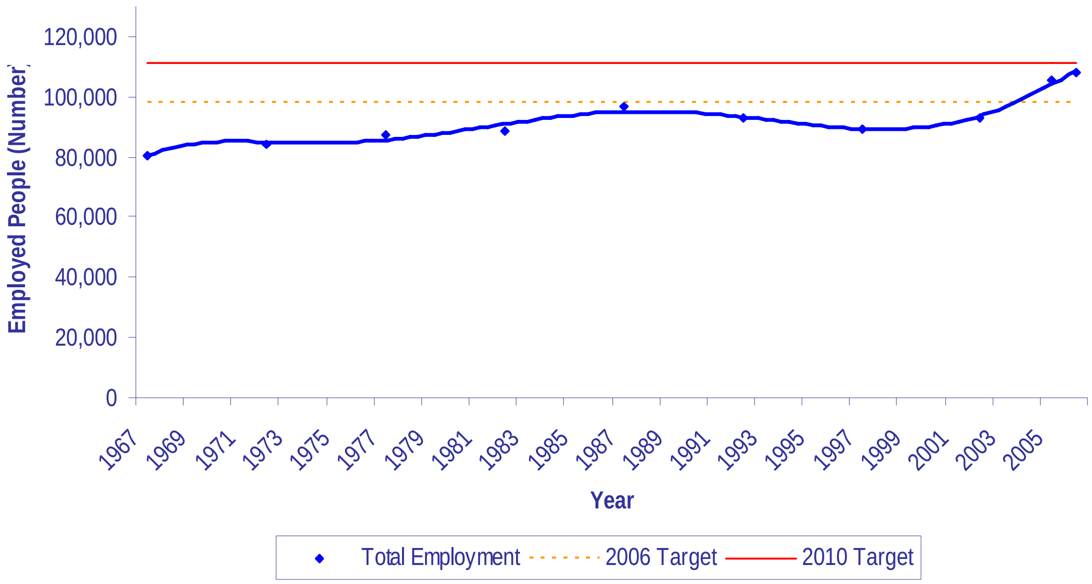
The continued decline in derelict establishments may be explained by the increase in construction, renovation and demolition activity in the City as formerly derelict sites are utilised.

Employment Growth and Composition

Total employment in the City grew 1.7%[3] between 2005 and 2006, bringing total employment to 108,007 jobs. This is in excess of the 2006 target of 98,000 jobs, and just under 3,000 jobs short of the 2010 target of 111,000 jobs.

It should be noted that the 2005 estimate of the number of jobs in the City has been extensively audited as a result of information collected in the 2006 survey. It is now estimated there were 105,579 jobs in the City in 2005.

Figure 5. Total Workforce Population, 1992 - 2006

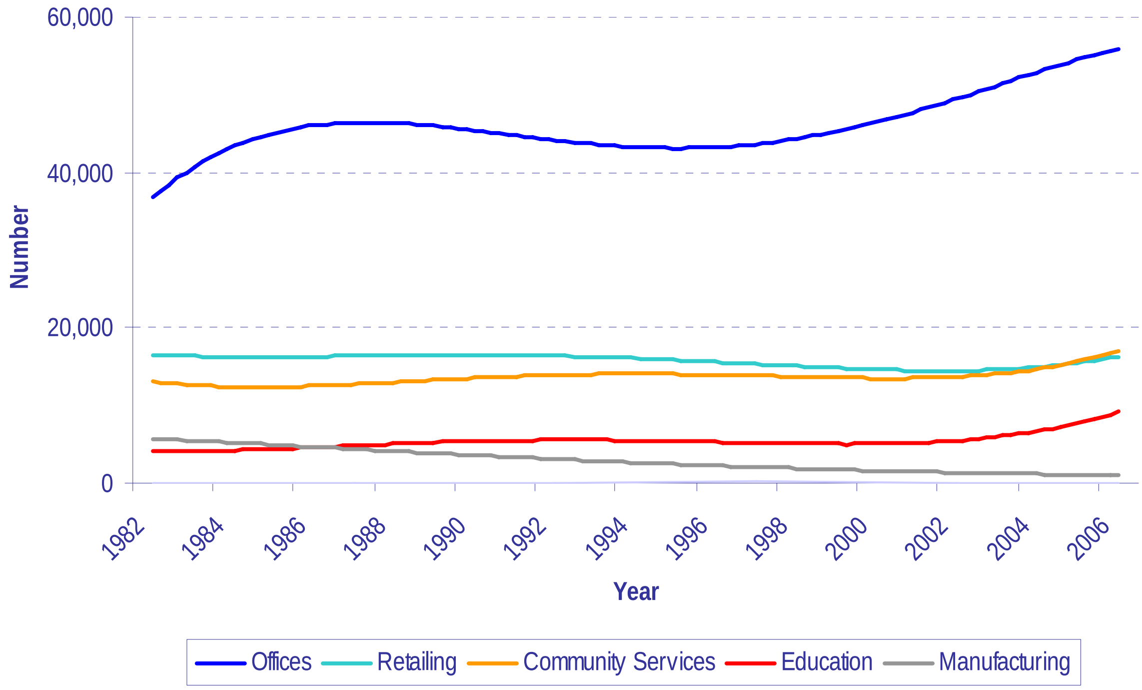


Since the decreases in the number of jobs experienced by the City in the early to mid-1990s, the number of jobs has been steadily increasing.

It should be noted that the 'line of best fit' used in the above graph to portray the number of jobs over time is not relevant to predicting ongoing growth into the future. Please see Appendix A to view how this line could change given possible results in the 2008 survey.

[3] Annualised growth rate as the 2005 and 2006 Land Use and Employment surveys were not exactly 12 months apart.

Figure 6. Composition of Workforce by Dominant Land Use Categories, 1982 - 2006



As can be seen in the graph above, the growth in recent years has been primarily driven by growth in the office, education and community services sectors.

Office jobs continue to dominate employment within the City and comprise 51.6% of all jobs in the City. Office jobs are primarily concentrated in the areas of:

- government administration excluding schools, hospitals and police (26.9% of all office jobs);
- business services such as accountancy practices, advertising and business consultants (11.6%);
- financial services such as banks and credit unions (9.9%); and
- legal services (6.4%).

Community service jobs have increased in recent years to represent 15.9% of all jobs in the City. These jobs are predominantly in the City hospitals (54.3%).

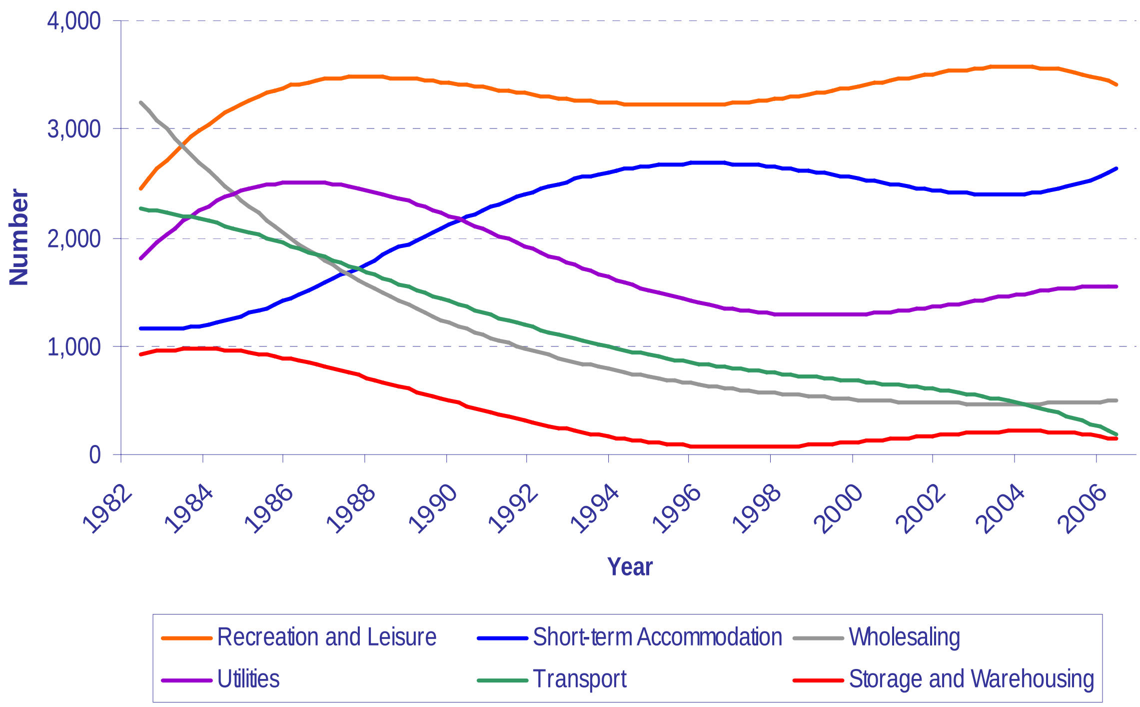
The number of retailing jobs has remained reasonably stable over the past 24 years. Retail jobs are currently concentrated in specialty retailing including supermarkets and department stores (33.2%) and catering places such as cafes and restaurants (22.6%).

Education jobs have increased in recent years coinciding with increased student enrolments in the City[4]. Education jobs are dominated by the City university and TAFE campuses (73.2% of all education jobs) and adult/vocational education establishments (12.6%).

Manufacturing continues to decline as an employer in the City. Manufacturing in the City is now mainly composed of manufacturers supporting the medical professions, manufacturing jewellers and printing/publishing.

[4] Adelaide City Council, *Quarterly Strategic Review - June 2006,* http://www.adelaidecitycouncil.com/adccwr/publications/reports_plans/june_2006_smp_progress_report.pdf

Figure 7. Composition of Workforce by Remaining Land Use Categories, 1982 - 2006



Recreation and leisure jobs have stabilised to about 3,500 jobs over the past 20 years. This represents 3.1% of jobs in the City in 2006. Of these recreation and leisure jobs 47.6% are in night clubs and the casino. A further 12.6% of recreation and leisure jobs are in theatres and cinemas within the City.

Jobs in short-term accommodation have also stabilised over the past decade at approximately 2,500 jobs. In 2006 67.7% of these jobs were in hotels, with a further 9.8% in private hotels and 8.0% in serviced apartments.

Utilities have consistently provided about 1,500 jobs over the last ten years. 54.3% of utilities jobs in 2006 are in television, radio and other communication stations. Another 31.2% of these utilities jobs are involved in 'hands on' postal distribution.

Wholesaling has stabilised at approximately 500 jobs since the turn of the century. Wholesaling has fallen from 3.7% of all jobs in 1982, to 0.5% in 2006.

Transport jobs in the City continue the decline evident since 1982. The share of transport jobs as part of all jobs in the City has declined from 2.6% in 1982, to 0.2% in 2006.

Storage and warehousing in the City appears to have stabilised at approximately 150 jobs over the past decade.

The Night Economy

For this report the night economy was defined as establishments that are open to the public any time between 10pm at night and 6am in the morning and any establishment deemed to be operating in these hours but not open to the public (such as some hospitals, pathology laboratories and call centres).

The proportion of City employees employed by establishments considered to be part of the night economy in 2006 is 25.9% and is consistent with previous estimates of this proportion in 2002 and 2005.

Detailed investigation of forty randomly selected survey blocks indicates that approximately 60% of these employees are in establishments that were open to the public any time between 10pm at night and 6am in the morning.

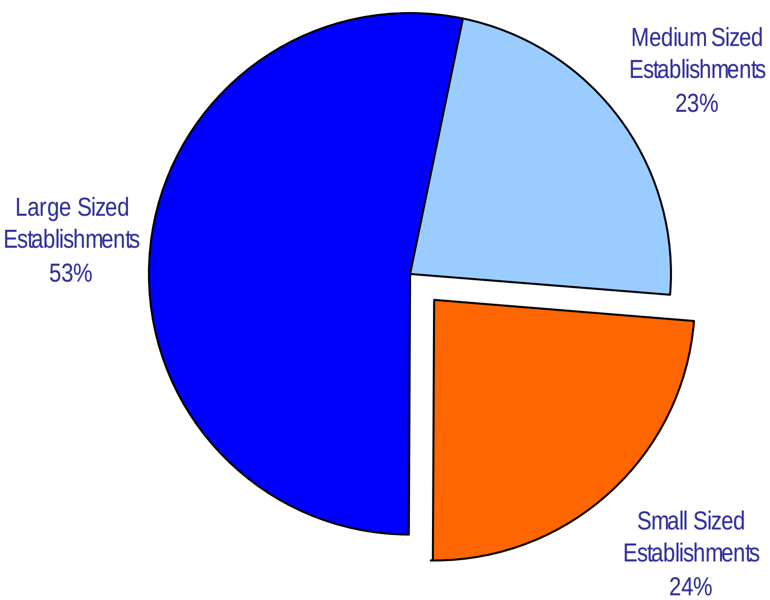
Small Establishments

The number of small establishments (i.e. those with less than 20 employees) has shown no change in the past year. Improvements in 2006 data collection, coupled with auditing of 2005 data, indicates that in 2005 and 2006 there were approximately 4,700 small establishments in the City.

Small establishments are predominantly in the office (40%) and retail sectors (40%) with another 10% in the community services sector.

As shown below, small establishments comprise 24% of employment in the City. Micro-sized businesses (i.e. those employing less than 5 employees) comprise just under 6% of employment in the City.

Figure 8. Proportion of Jobs by Establishment Size, 2006



Business Movements

Just under 1,500 new jobs were created in the City by businesses starting up within the City since June 2005.

In addition, just over 600 new jobs were confirmed to have appeared in the City since June 2005 as a result of existing businesses moving into the City.

Approximately 2,600 jobs were confirmed as having relocated within the City since June 2005. This relocation activity is likely to continue into the near future as major office developments such as City Central Tower 1 and the Flinders Link projects are completed.

Approximately another 450 jobs were in businesses trading in June 2005 but were not located at their current address. For these jobs it is difficult to determine whether they are new to the City or the product of a relocation within the City.

This data would indicate just under 5,100 jobs in the City were new to the City or had relocated within the City since June 2005.

Start-up Businesses

46.6% of jobs in these start-up businesses were involved in retailing. A further 37.0% of jobs were involved in office based work.

Of the jobs in retail start-up businesses, 17.8% were in licensed restaurants, 15.0% were in take-away food outlets (concentrated in Southern Cross and City Cross arcades) and 14.5% were in cafes.

Businesses Moving to the City

Of the jobs identified as a result of businesses moving into the City, 89.1% were based in offices. The top three categories of office based jobs moving into the City were: mining administration; data processing/computer software services; and advertising, marketing and business consulting services.

The origins of these businesses ranged from suburbs neighbouring the City through to other State capitals. The top five origins of jobs arising from businesses moving into the City are:

- the Parkside/Eastwood/Fullarton area;
- the Kent Town/Norwood/Rose Park area;
- the Richmond/Hilton area;
- the Unley/Hyde Park area; and
- the Wayville/Goodwood area.

These five origins accounted for 72.0% of jobs in the City resulting from existing businesses moving into the City.

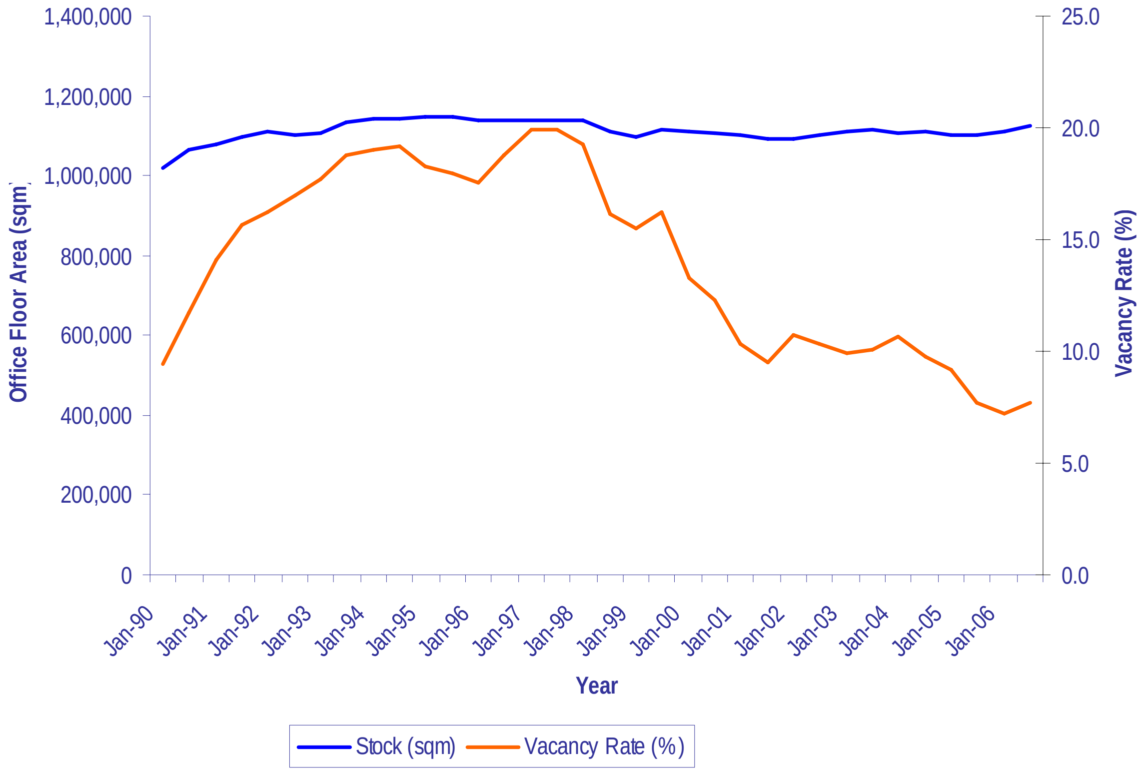
Offices

Spurred by the reported advantages of being located close to clients, being in a central location for access by employees and the image of a City address[5], office based businesses continue to be the dominant employer in the City and account for over 51% of employment within the City. The number of office employees increased by just over 10% between 2002 and 2006. The largest employer of office employees continues to be government administration and defence which accounts for 26.9% of office jobs.

In an environment of relatively static office space since 2002[6], the growth in office employment has contributed to the reduction in vacant office space. However, additions to the office stock in early 2006 have resulted in a small rise in office vacancy rates.

In July 2006 the Property Council of Australia estimated that more than 75,500 square metres of office space will be made available before the end of 2007. This would represent an increase in City office space of 6.7% by the end of 2007, assuming no existing stock is withdrawn.

Figure 9. Office Stock and Vacancy Rates in the City square mile[6], 1990 - 2006

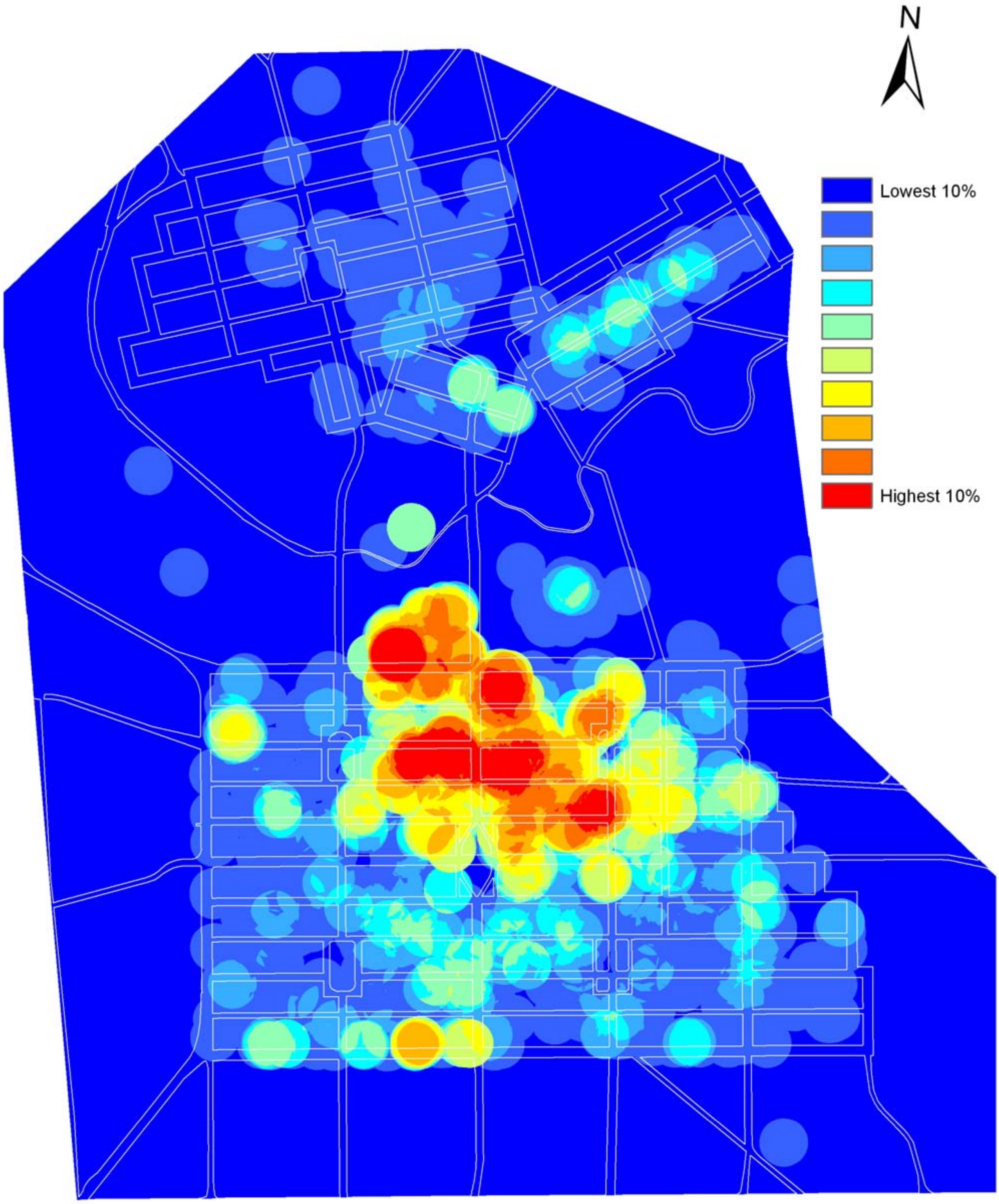


It should be noted that a considerable number of the office space recently completed and due for completion in the next two years is on the southern boundary of the current 'core' of office employment centred just north of Victoria Square.

[5] Adelaide City Council, *Business Segmentation Study (2006),* www.adelaidecitycouncil.com/research

[6] Property Council of Australia, *Australian Office Market Report, July 2006*

Figure 10. Density of Office Employment, 2006

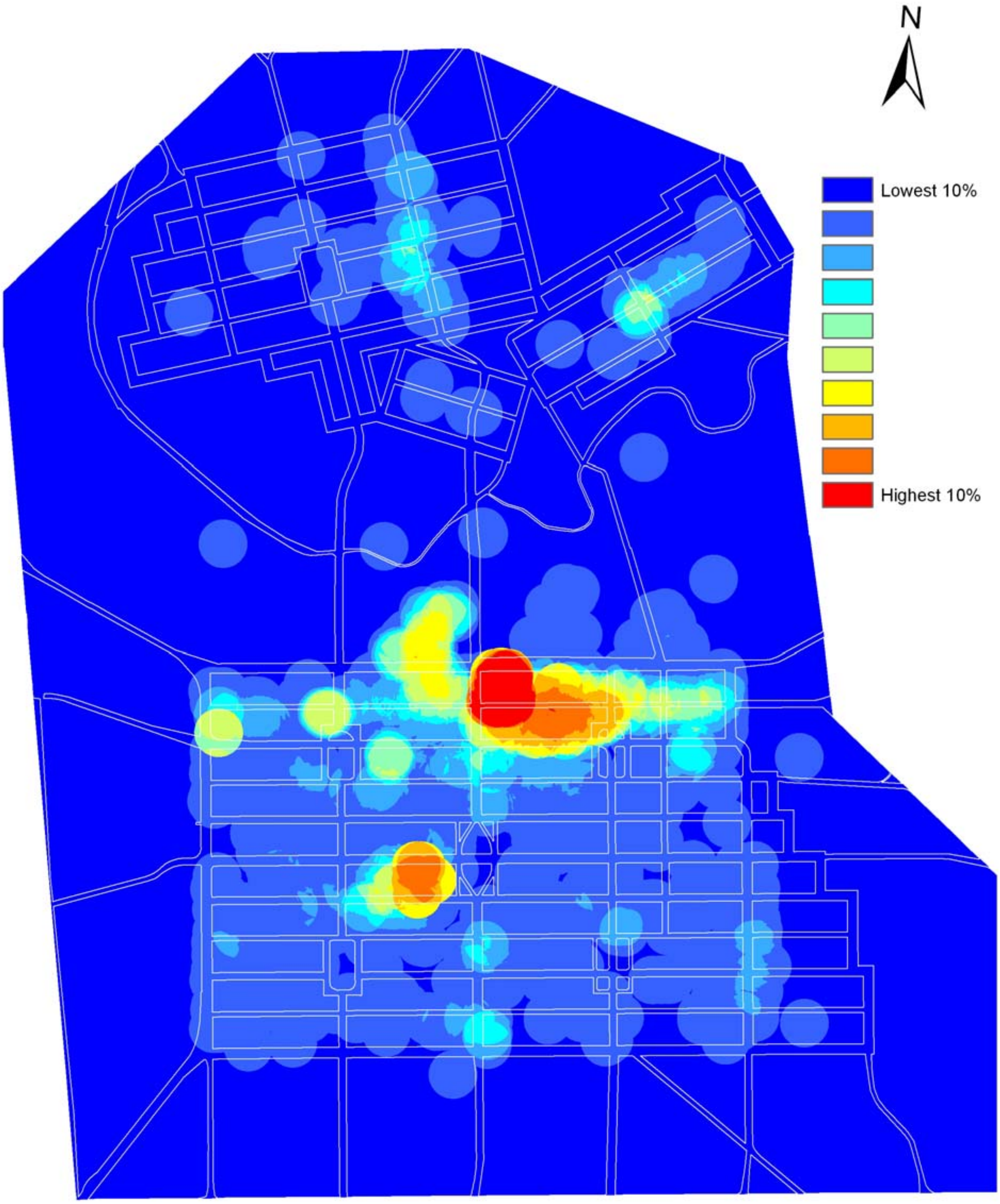


Employment density at some parklands sites appear denser than would be expected as their employment has been placed at a single point rather than allocated across the actual area.

Retail

The following map demonstrates the distribution of retail employment throughout the City. The Hindley Street - Rundle Mall - East End retail zone is readily identified, including a spur from Hindley Street to the railway station area. The second densest area of retail employment in the City is the Central Market precinct. Less distinct are the three 'Main Street' shopping precincts – Hutt Street, Melbourne Street and O'Connell Street.

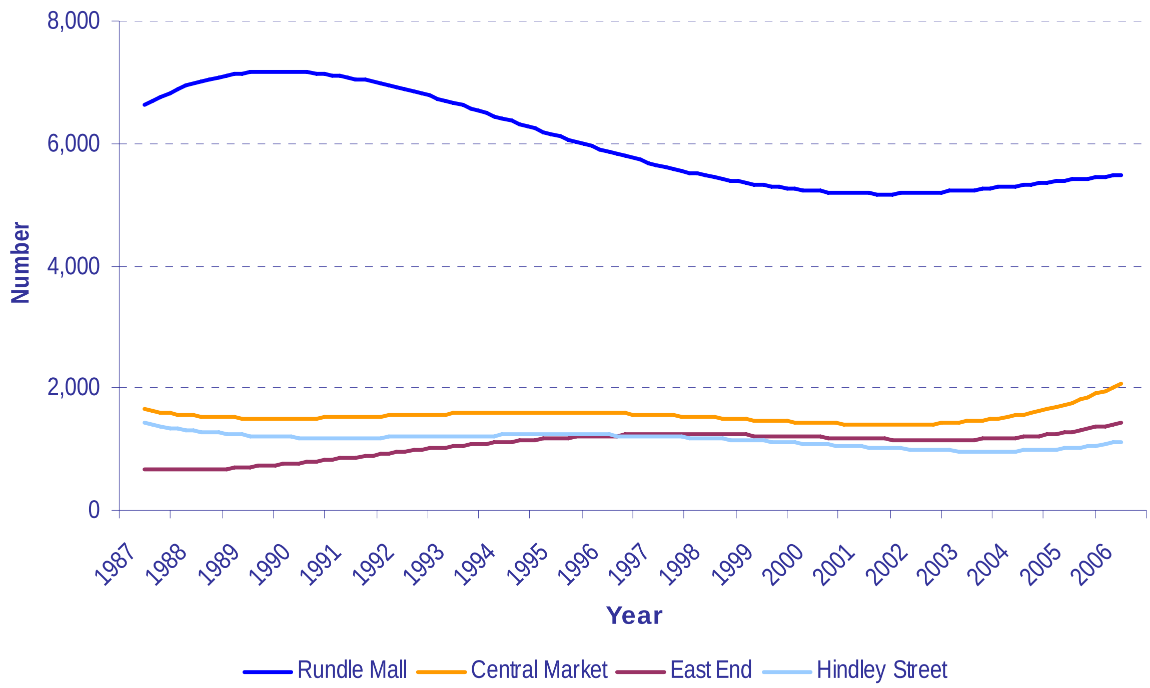
Figure 11. Density of Retail Employment, 2006



Employment density at some parklands sites appear denser than would be expected as their employment has been placed at a single point rather than allocated across the actual area.

The total number of retail jobs in the City has remained relatively stable over the past two decades, however, as shown below, individual shopping precincts have varied in their employment trends.

Figure 12. Retail Employment by Selected Retail Precinct, 1987 - 2006



Rundle Mall retail employment has grown marginally since 2002 after the noticeable decline in retail employment in the 1990s.

The Central Market precinct (including Gouger Street) continues to be the second largest retailing precinct and has shown a marked increase in employment over the past few years.

Over the past two decades the East End has surpassed Hindley Street as the third largest retailing district in the City. From 1987 to 2006 the East End retail precinct has seen job growth of almost 110%. Hindley Street has shown a slight decline in retail employment since 1987.

The other main street shopping precincts of Hutt Street, O'Connell Street and Melbourne Street precincts each have less than one thousand retail jobs. The O'Connell Street precinct employs approximately twice as many retail employees as Hutt Street and Melbourne Street.

The O'Connell Street retail precinct has shown continuous steady growth since 1987 and as a result has almost 46% more retail jobs in 2006 than in 1987.

The Melbourne Street retail precinct has shown modest retail employment growth since 1987, and has been stable since the early 1990s.

The Hutt Street precinct has shown modest retail growth since 1987. This growth has led to the Hutt Street precinct now being of equivalent retail size as the Melbourne Street precinct.

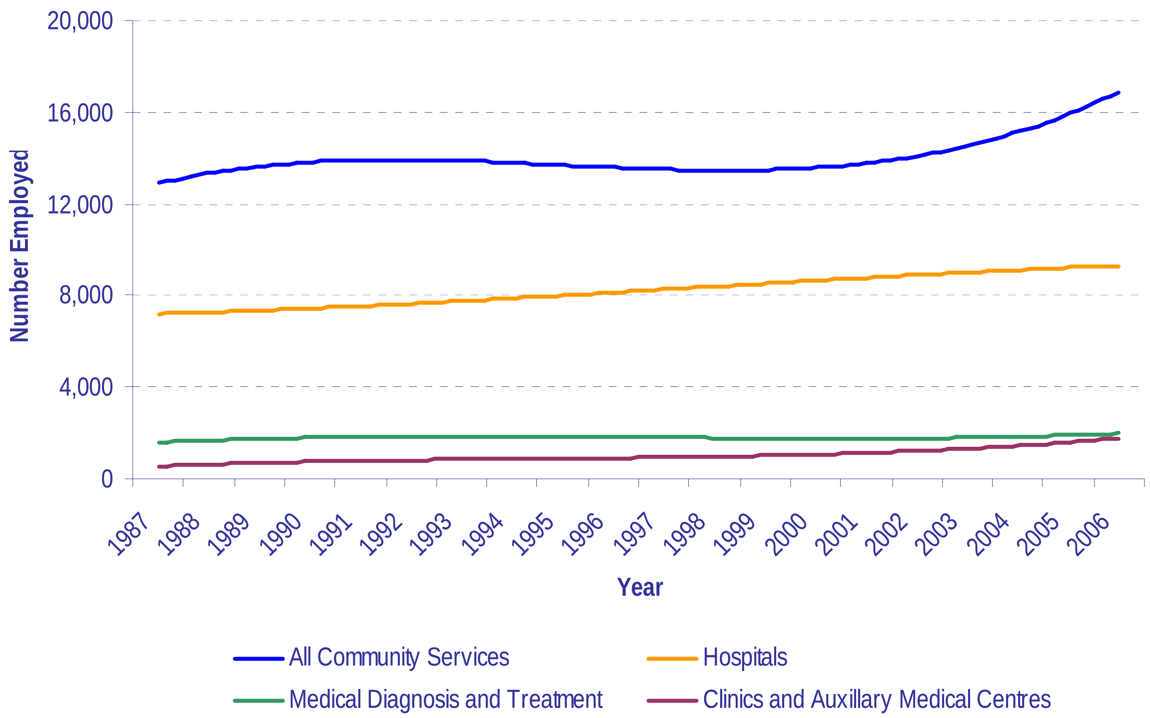
Community Services

Within the past four years the community services sector overtook retailing as the second largest employer in the City and now represents 15.9% of all jobs in the City.

By far the largest employers in this sector are the hospitals which account for just over half of all employees in the sector. The Royal Adelaide Hospital and the Women's and Children's Hospital dominate the Community Services sector providing 41% of jobs in the sector and 76% of jobs associated with hospitals. As can be seen in the graph below, hospitals have been steadily increasing in their employment over the past 20 years.

The second largest employer group are the emergency services (fire, police and ambulance services) which provide 15% of the community services jobs in the City.

Figure 13. Community Services Employment by Selected Category, 1987 – 2006.

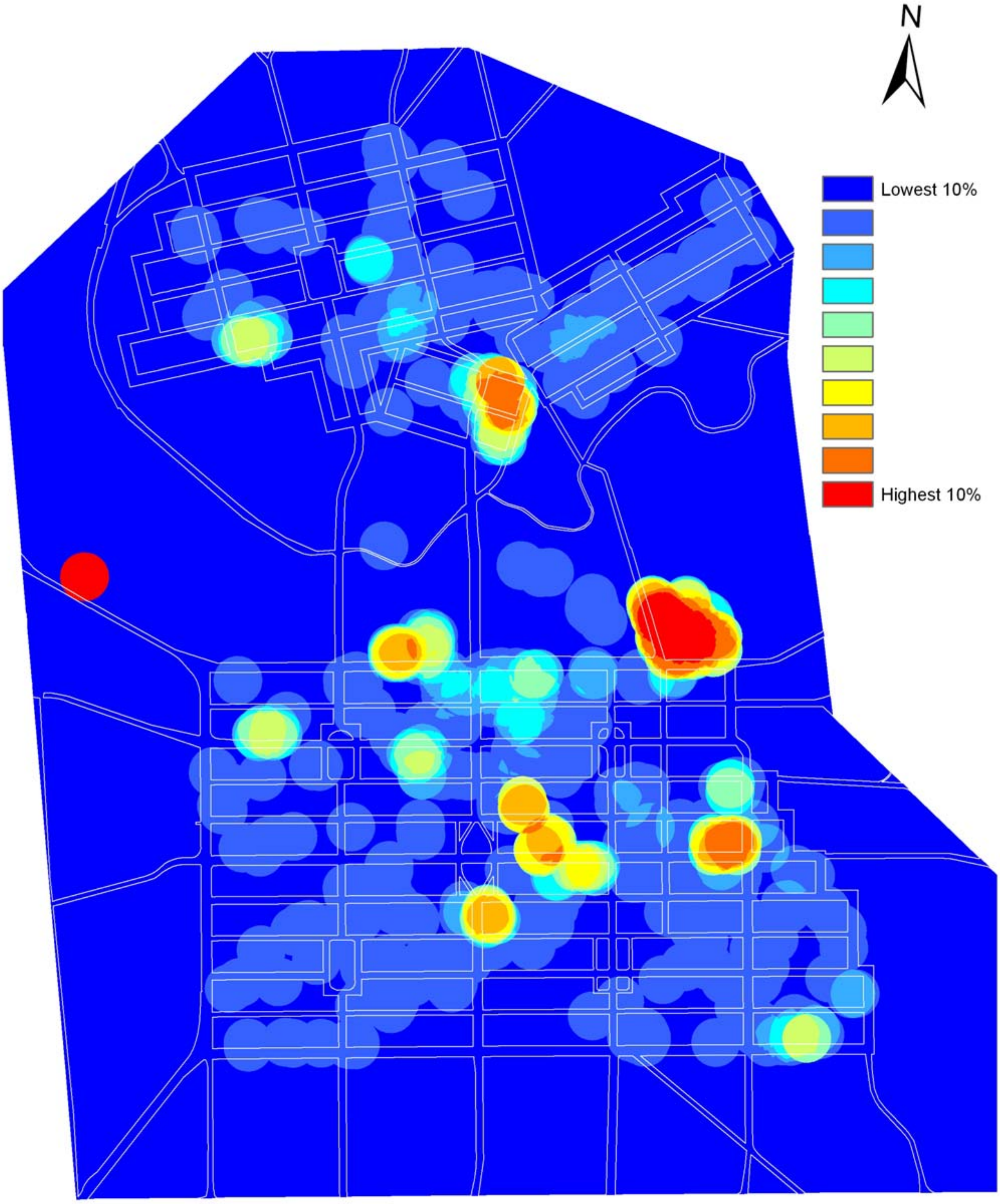


Medical Diagnosis and Treatment establishments, such as general practitioners, medical specialists and dentists, have provided relatively stable employment in the City over the past 20 years.

Clinics and Auxillary Medical Centres, which include pathology services, blood collection and community health services, have grown steadily over the past 20 years resulting in this category tripling its employment and now composing almost 11% of jobs in the Community Services sector.

The distribution of employment in community services establishments, as shown on the opposite page, highlights the dominance of hospitals in this sector. Other areas of higher employment density are generally associated with police and selected justice related establishments.

Figure 14. Density of Community Services Employment, 2006



Employment density at some parklands sites appear denser than would be expected as their employment has been placed at a single point rather than allocated across the actual area.

STUDYING IN THE CITY

Where are students studying?

Growth in educational employment would be expected as it coincides with the recent considerable growth in the number of students studying in the City[7] and the opening of the Heinz School of Carnegie Mellon University within the City. In 2005 the majority (54%) of City students were enrolled at the universities. Enrolments in the City for TAFE also comprise 16% of City students. A further 11% were enrolled at the primary and secondary schools throughout the City.

Employment in educational establishments approximates the student enrolments with 73.2% of employment in universities and TAFE, and 12.6% of employment in primary and secondary schooling.

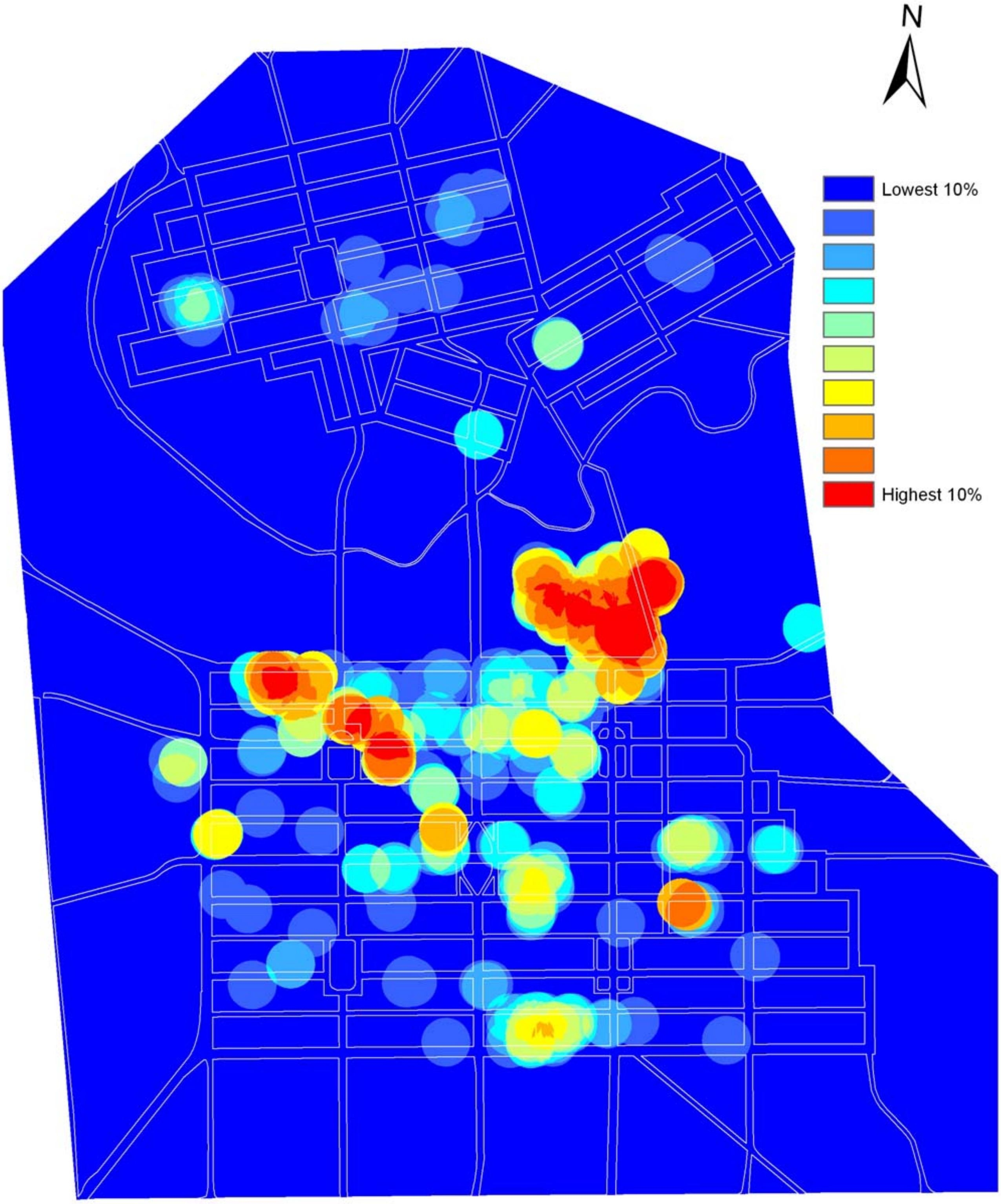
Overall, there was a noticeable 67.6% increase in employment in educational establishments in 2006 compared to 2002. This growth was aided by a number of institutions reporting many more casual positions than in previous surveys. Removing the estimated effect of these casual positions would result in employment growth of approximately 18.3%.

This revised growth in employment in educational establishments of 18.3% in the four years from 2002 to 2006 is mirrored by student enrolments at the universities, TAFE and schools in the City which rose 25.9% from 2002 to 2005.

The overall distribution of educational employment and establishments has not considerably altered in recent years with North Terrace still the focus of tertiary education in the City and therefore the majority of education employees. Other higher density locations in the City include areas around TAFE, WEA, primary school and secondary school campuses.

[7] Adelaide City Council, *Quarterly Strategic Review - June 2006,* http://www.adelaidecitycouncil.com/adccwr/publications/reports_plans/june_2006_smp_progress_report.pdf

Figure 15. Density of Education Employment, 2006



Employment density at some parklands sites appear denser than would be expected as their employment has been placed at a single point rather than allocated across the actual area.

Where are the students living?

78% of City students aged 15 years or more live within a 10km radius of the City. Only 9% of these students studying in the City live in the City, with 5% living in North Adelaide and 4% living in the City square mile.

This pattern is similar for students in government primary and secondary schools within the City. 89.6% of City primary and secondary students live within a 10km radius of the City. 12.8% of these students live in the City, with 7.1% residing in the City square mile and 5.7% living in North Adelaide.

The City continues to increase it capacity to accommodate students within the City. A number of recently completed projects with student accommodation include:

- Grote Street University Village; and
- The UV apartments conversion in 25 King William Street (not tenanted at the time of this survey).

Other approved developments that have dedicated student accommodation include:

- Palais Student Accommodation;
- Extensions to St. Mark's and Kathleen Lumley Colleges; and
- A substantial component of student housing in the redevelopment of the Bus Station and Balfours Sites.

The continued development of student accommodation within the City is likely given a recent projection of demand in 2010 indicating a need for approximately another 2,500 private rental dwellings, 1,500 homestay places and 1,750 institutional places[8].

The following map shows those residences identified as part of the survey as being operated as student accommodation. It is expected that students will of course occupy other residences in the City, but identifying students in these other residences was not within the scope of this survey.

As can be seen in the following map, distinct pockets of dedicated student accommodation are emerging. The residential colleges in North Adelaide are readily identified. The higher density student apartment cluster in the north-east of the City square mile is also evident. The south-west of the City is a growing area of dedicated student accommodation with the University of Adelaide's 'The Village' prominent.

[8] Government of South Australia, Education Adelaide, Media Release Monday 27th November, *Demand for Student Accommodation Set to Soar*.

Figure 16. Density of Dedicated Student Accommodation, 2006

LIVING IN THE CITY

It is estimated that there are 15,203 (±10%) permanent residents in the City[9].

In a recent submission to the Electoral Districts Boundary Commission[10], Planning SA estimated the City will have 16,548 residents in 2010. This would indicate projected growth of over 9% in the four years from 2006 to 2010 and is dependent upon the extra dwellings expected from higher density development within the City. Growth estimates prepared by id Consulting for Adelaide City Council[11], based on different population growth assumptions, estimates a population of 19,468 residents in the City in 2010.

These estimates do not factor in any effects from policy decisions designed to progress South Australia towards a population of two million residents by 2050.

Dwelling Mix

To accommodate the growing residential population, there has been a shift away from detached dwellings in the City.

The survey estimates that detached houses make up less than 16% of residences in the City. This implies that about 20% of the City's residential population live in detached houses[12]. The remaining accommodation is supplied by residential apartments (including serviced apartments) and townhouses which are estimated to make up 45% and 39% of City dwellings respectively.

In terms of likely migration to the City, those people who are actively considering moving to the Adelaide City Council area in the next 12 months (i.e. are prime prospects for a move to the City), 41% are looking for a detached house and 19% are looking for an apartment[13]. These prime prospects are most likely to be lone person households (27%), older couples with no children (19%) or older couples with adult children (16%).

Dwelling Density

As can be seen in the map on the facing page showing the distribution of residences, the majority of residences are in North Adelaide and in the south of the City square mile. The more dense developments in these areas are generally low rise apartments or dense, multi-storey townhouse developments. The most notable exception to this is the most intense residential development in the north-west of North Adelaide which represents the accommodation associated with care facilities.

The map also clearly demonstrates the intense but distinct developments in the central activity district which are generally serviced apartments. These are included as dwellings in a manner consistent with Australian Bureau of Statistics Census of Population and Housing data. The other notable residential zone in the north of the City square mile is the dense residential development based around the East End. It should be noted that this map excludes the dedicated student accommodation identified on the previous page.

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[9] Adelaide City Council, *Quarterly Strategic Review - June 2006,* http://www.adelaidecitycouncil.com/adccwr/publications/reports_plans/june_2006_smp_progress_report.pdf

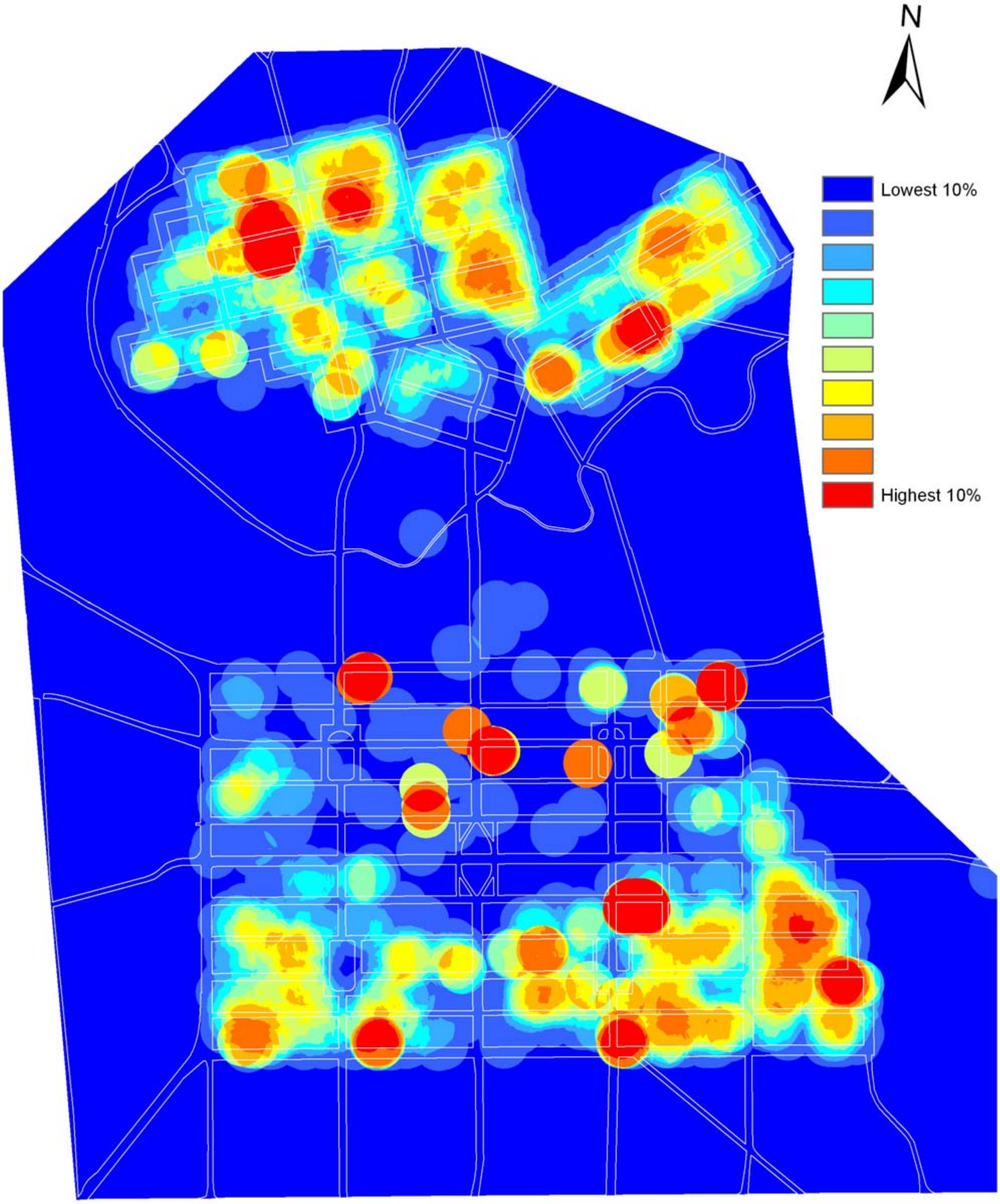
[10] Government of South Australia, *Population Projections for Statistical Local Areas and Collection Districts in South Australia, 2010*

[11] www.id.com.au/adelaide/forecastid/

[12] Inferred using 2001 Australian Bureau of Statistics Census of Population and Housing occupancy rates by dwelling type.

[13] Adelaide City Council, *Residential Segmentation Study 2006,* www.adelaidecitycouncil.com/research

Figure 17. Density of Dwellings, 2006



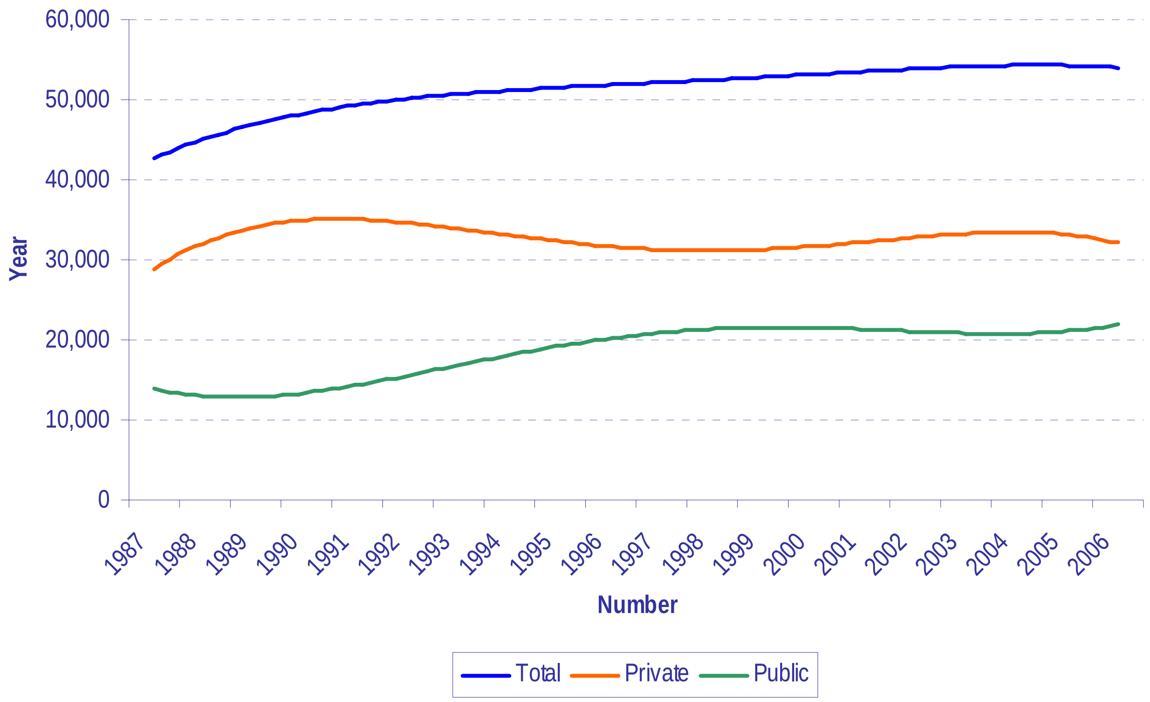
PARKING IN THE CITY

Number and Composition of Off-street Car Parks

As can be seen in the graph below, the total number of car parks in the City has stabilised over the past few years (increasing 0.2% since 2002) after approximately 15 years of growth.

Most importantly the composition of these car parks has changed. In the past four years the number of car parks available to the general public increased 4.1% offsetting a 2.2% decrease in private car parking. Even within private parking there is a divergence with private commercial parking (i.e. parking under offices and for specific building tenants) decreasing 3.9% and parking associated with residences increasing 5.0% since 2002.

Figure 18. Composition of Off-street Car Parking, 1987 - 2006



The net increase in the number of public car parks should be considered in the context that over 400 public car parks have been closed in the past four years to make way for new developments such as the Bus Station redevelopment, the Palais on Vaughan development and the Flinders Link developments. In the future however, the Bus Station and Palais on Vaughan developments will provide many more car parks than were withdrawn as a result of these developments.

A major influence on the decrease of private commercial parking in the past four years has been the return of the open lot car parking on the eastern side of Frome Road to park land.

Number and Composition of On-street Car Parks

The majority of on-street parking in the City (almost 80%) is classified as general parking. Within this category is timed parking that accounts for almost 75% of total City parking. Of this timed parking 29% is provided through ticket machines.

On-street parking directly supporting businesses in the City accounts for almost another 12% of parking and includes loading zones that account for just over 9% of total parking in the City. Residential permit parking accounts for less than 1% of on-street parking in the City.

In addition to on-street parking, 155 bicycle racks capable of accommodating multiple bicycles are also provided within the City.

Table 1. Composition of On-Street Car Parking, August 2006

Type of Parking	Parking Control	Number	Proportion
Environmental vehicles	Motor cycle	222	1.3%
Public transport	Bus & taxi	350	2.0%
Direct business services	Loading No Parking Mail	2,035	11.8%
General parking	Ticket Meter Time limit Unrestricted	13,714	79.7%
Special parking needs	Parking for disabled Permit * Visitor Residential	895	5.2%
Total parking		17,216	100%

* Some permit areas are on private roadways and are managed by the Council on behalf of the property owners.

Total City Car Parks

In total there are over 71,000 car parks available within the City supporting an estimated daytime population of approximately 200,000[14] people. Just under 39% of City parking is for workers or businesses only (i.e. off-street non-residential ancillary parking and on-street parking explicitly supporting business activity) and about 9% of City parking is for the use of residents only (e.g. residential permit parking and off-street parking within residences).

The Council has a governing role covering approximately 33% of total parking in the City through U-Park (8%) and on-street parking (24%).

[14] Adelaide City Council, *2004/2005 Annual Report*, www.adelaidecitycouncil.com

APPENDIX A – LINE OF BEST FIT

Why use 'line of best fit'?

Presenting graphs as a series of lines linking data points, possibly creating a sawtooth pattern, can create two issues that can lead to misinterpretations of the data.

The first possible misinterpretation can be that as the graph 'turns a corner' something occurred in that year that created the change in level. The reality is that the change could have occurred prior to that data point, but that data point is the first time that a change in level was detected.

A second possible issue is that changes in survey methodology and other measurement effects can create potentially small but noticeable variations in the data that are not supported by actual changes in what the survey was measuring.

By using the line of best fit these possible sources of error in interpreting the data are reduced.

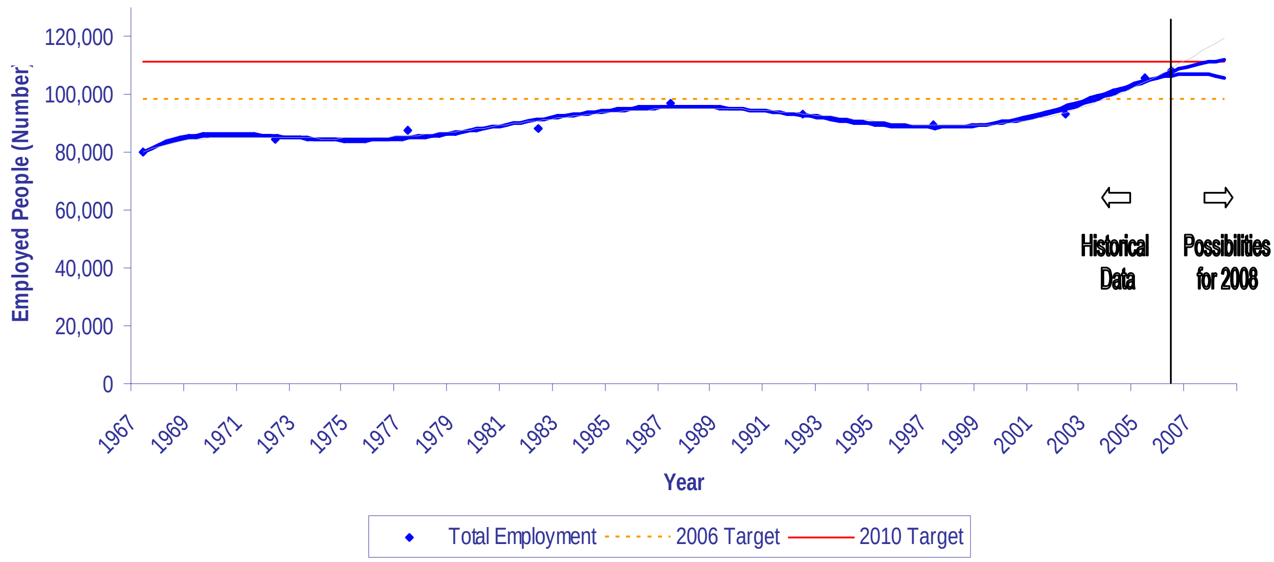
Effects of Future Data on the 'line of best fit'

As noted on page 10 of this report, the 'line of best fit' changes depending on future data collected as part of the series of Land Use and Employment Surveys conducted by the Adelaide City Council.

To demonstrate the possible effects of future data, the below graph demonstrates the changes in the 'line of best fit' arising from possible results from the proposed 2008 Land Use and Employment Survey.

The thin grey line indicates the current 'line of best fit' and would indicate continued strong growth into the future. The two dark blue lines indicate what the lines would look like if there was 3% growth in total jobs (the upper branch) or a 3% decline in total jobs (the lower branch) in 2008. Therefore, while a line of best fit is useful for viewing historical data it is not suitable as a basis for any extrapolations of future trends.

Figure 19. Possible Effects of 2008 Land Use and Employment Survey Results on the 'Line of Best Fit' for the Total Number of Jobs



APPENDIX B – DEFINITIONS AND METHODOLOGY

Methodology

The Land Use and Employment Survey (2006) was collected by interviewers visiting each building within the Adelaide City Council from May to August, 2006. Comparison with valuation assessments ensured all buildings were visited.

Using a questionnaire, interviewers gathered information about buildings and establishments which was data entered in the office. The response rate, weighted by the number of employees, was in excess of 98%. The land use and industry codes for all establishments and buildings were assigned at this time. Data was also collected regarding the state of the business in June 2005.

This data about the nature of the business 12 months ago was used to extensively audit data from the 2005 Land Use and Employment Survey resulting in a significant revision in the estimated number of jobs within the City in 2005. The number of jobs in the City in 2005 is now estimated to be 105,509, compared to the previous estimate of 97,585.

Definitions

Establishment - Comprises all contiguous space occupied by a particular tenancy.

Building - An independent structure which can comprise one or more *establishments*.

Full-time Employment - Person employed for at least 35 hours per week by that employer, including casual employees.

Part-time Employment - Person employed for at least 1 hour, but less than 35 hours, per week by that employer, including casual employees.

On-site Employment - Persons spending at least 50% of work time on site.

Off-site Employment - Persons who spend less than 50% of work time on-site.

Land Use Codes - A list of what each code contains is available from the Adelaide City Council. The codes used are the same as those used in the 1982 Land Use and Employment Survey.

More Information

A copy of this report is available from the Adelaide City Council website (www.adelaidecitycouncil.com/research).

The report contents and interactive maps are also available at www.id.com.au/adelaide/landuse2006.

It should be noted that this report provides analysis of the basic data gathered in the study. Extensive further data analysis is possible by cross analysing questions with any other question. For reasons of efficiency, it has been determined that this detailed analysis will be conducted in response to specific needs. If any further analysis is required, please contact Corporate Strategic Planning at researchservices@adelaidecitycouncil.com or on +61 8 8203 7265.