

**BRAXFORD**  
**CONSULTANCY**  
Corporate Governance Specialists

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**COUNTRY HIGH SCHOOLS HOSTELS AUTHORITY**

**REVIEW INTO THE DECLINE IN CLIENT  
NUMBERS AT THE COLLEGES**

**OCTOBER 2011**

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## **1 INTRODUCTION**

The Country High School Hostels Authority (the Authority) requested Braxford Consultancy to undertake an in-depth review of the decline in the number of students attending the Colleges.

There has been a steady and pervasive negative trend in student numbers across the College system for a number of years. This trend is of particular significance due to the Authority's reliance on boarding revenue to sustain the College system. The Colleges are substantially funded by the revenue raised from student boarding fees, with profitable Colleges subsidising the operation of unprofitable Colleges. In addition to the revenue raised from boarding fees, the Authority receives a small proportion of revenue from other sources (interest, Catholic Education Office).

## **2 REVIEW OBJECTIVES**

The purpose of this review is to survey the current trend of declining client numbers within the Residential Colleges system and attempt to identify the probable key reasons for this decline on an overall and College-by-College basis.

The primary objectives of the review are to:

- Verify the extent of the trend of declining resident numbers;
- Endeavour to identify key causes for the decline, both at an overarching level and at a College-specific level
- Prepare a preliminary model that provides some possible insight into whether the trend is likely to continue and if so, what the magnitude and rate of change for demand for student accommodation is likely to be.

## **3 APPROACH AND SCOPE**

The audit survey review included the following tasks:

1. Interview College Managers and make enquiries while on College audits;
2. Research relevant national, state and local demographic data;
3. Analyse the Colleges' occupancy data to determine the collective and individual trend for the Colleges;

4. Perform various analytical processes including population trend analysis, financial analysis, and market analysis on an overarching level, and on a College-by-College basis;
5. Development of a summary of possible causes for the decline, both at a collective level and at a College-specific level
6. Use and test various modelling techniques to analyse and model the effect of a continuation or exacerbation of the current trend on College occupancy levels
7. Draft a Discussion Paper for the consideration of the Director of the Authority.

The scope of the review includes all of the Residential Colleges with the exception of the City Beach and Broome Residential Colleges which commenced operation in 2007, and are not considered to have enough relevant student data to provide confidence in the strength of the trends in the short-term. The review also includes the recently closed Katanning Residential College in some areas where relevant due to the historic data available

#### 4 COLLEGE PARTICIPATION FIGURES

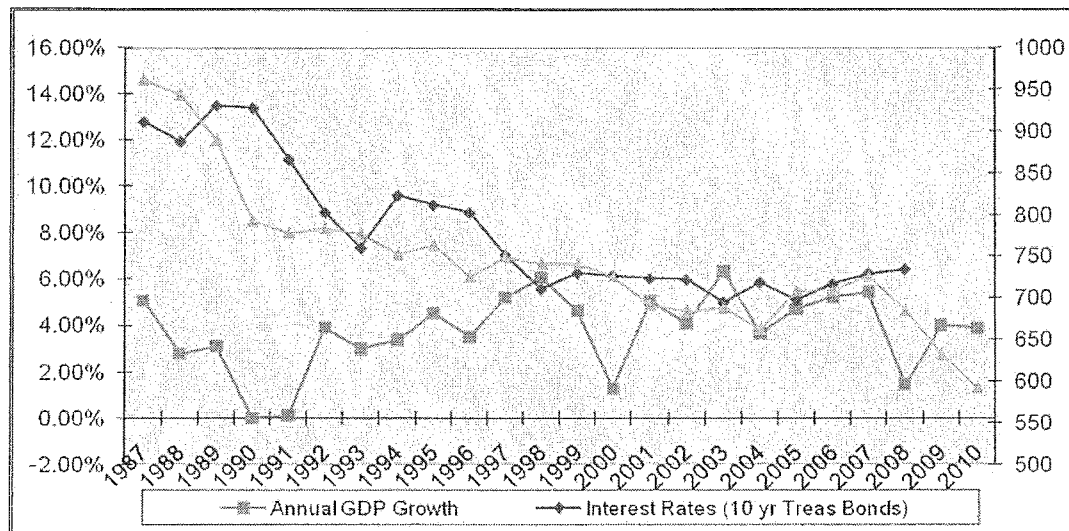


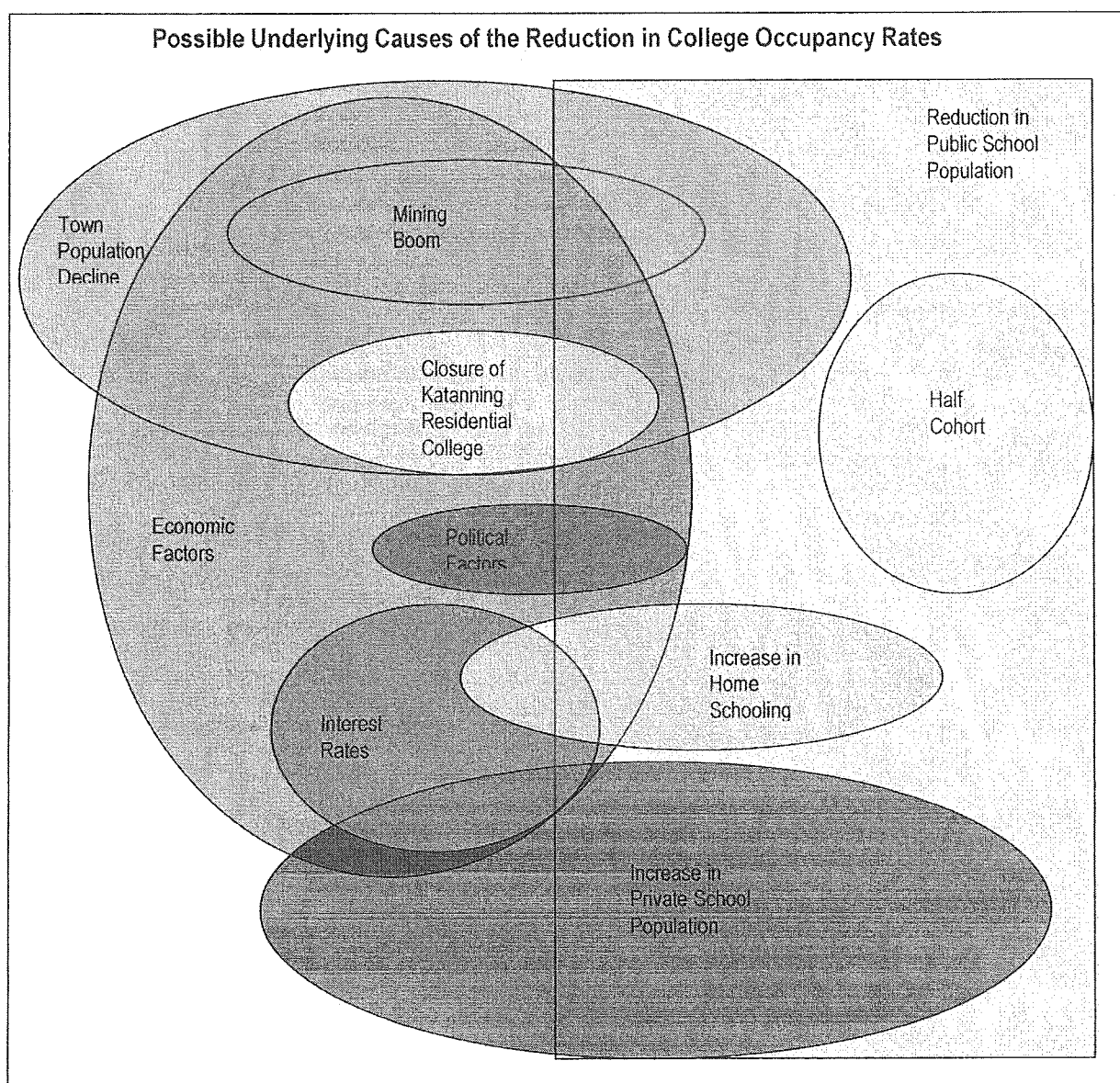
Figure 1 – Overall College Participation Levels compared to General Economic Indicators (Source: CHSHA, ABS)

Figure 1 illustrates the current issue faced by the Authority. In the last 25 years, occupancy across the College system has dropped by almost 50%. In addition to this long-term trend of declining occupancy, almost half of this decline has

occurred in the last four years. While the recent figures are exacerbated by two extraordinary events, namely the closure of a College and the half-cohort which shall be discussed later, there is still a clear negative trend in the figures which appears to be gaining momentum.

## 5 POSSIBLE UNDERLYING CAUSES

Below is an indicative diagram of the possible causes of the reduction in occupancy at the Colleges. The diagram is for illustrative purposes and is not to scale, or necessarily accurate or complete.



## 5.1 Public School Population

Although there are a few exceptions throughout the College system, for the most part College attendees attend the local State Senior High School. Hence any trends in the student population of the relevant State Schools most likely have a direct correlation with the size of the target market for the Colleges.

Figure 2 (below) shows that the overall number of students in the local State Senior High Schools that service the Colleges is also declining. The graph shows a sharp decline in 2010, which shall be discussed separately in Section 5.4. However, regardless of the sharp decline in 2010, the decade prior to this still exhibited a clear negative trend in the attendance of the State Senior High Schools that service the Colleges. Since 1982, the number of students has diminished by approximately 8%.

Effectively, this has reduced the immediate market for Residential College services by approximately 535 students over 20 years.

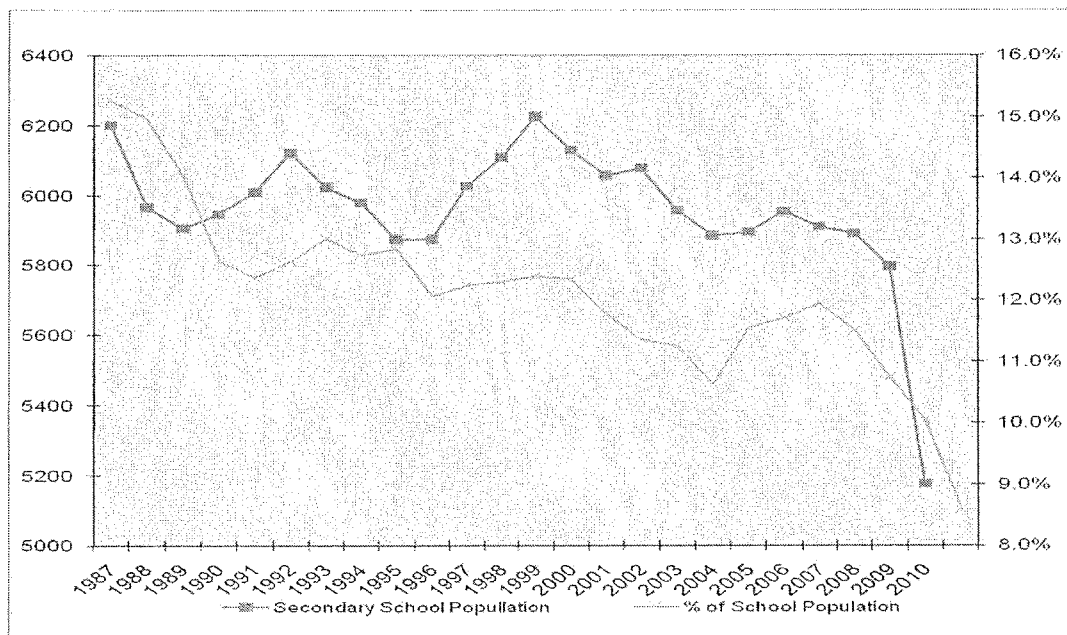


Figure 2 – Local School Student Population, and percentage of students attending Residential Colleges (source: Dept of Education, CHSHA)

Figure 2 also shows the change in percentage of students from the local State Senior High Schools attending the Residential Colleges over time. As the graph illustrates, the percentage level of High School Students attending the Colleges is diminishing over time. A simple regression analysis of this trend suggests that the percentage of students from the local State Senior High Schools attending

the Residential Colleges will decrease by approximately 0.75 percentage points every five years, and is currently around the 10% mark.

Although it has been concluded that the percentage rate of student attendance at the Colleges is declining, if it is considered as a constant at its current rate, (10%), it can be suggested that the reduction in student levels at the schools of approximately 535 students as posited earlier, would lead to a direct reduction in student numbers at the College of approximately 54 students in the last 20 years, or approximately 14% of the overall reduction in College attendance. If this previous assumption that the rate is constant is then removed and it is acknowledged that the student participation rate at Colleges was higher in previous years, it is likely that these estimates are underestimated.

There are two important questions that are raised as a result of the deductions made above:

- a) If the population of the local State Senior High Schools is declining, is there a further underlying reason for this?
- b) If the percentage of local State Senior High School students attending the Residential Colleges is declining, is there a further underlying reason for this?

Although it is not possible to accurately determine the exact causality for these issues, a number of possible causes are discussed below.

## 5.2 General Economic Indicators

### 5.2.1 GDP Growth

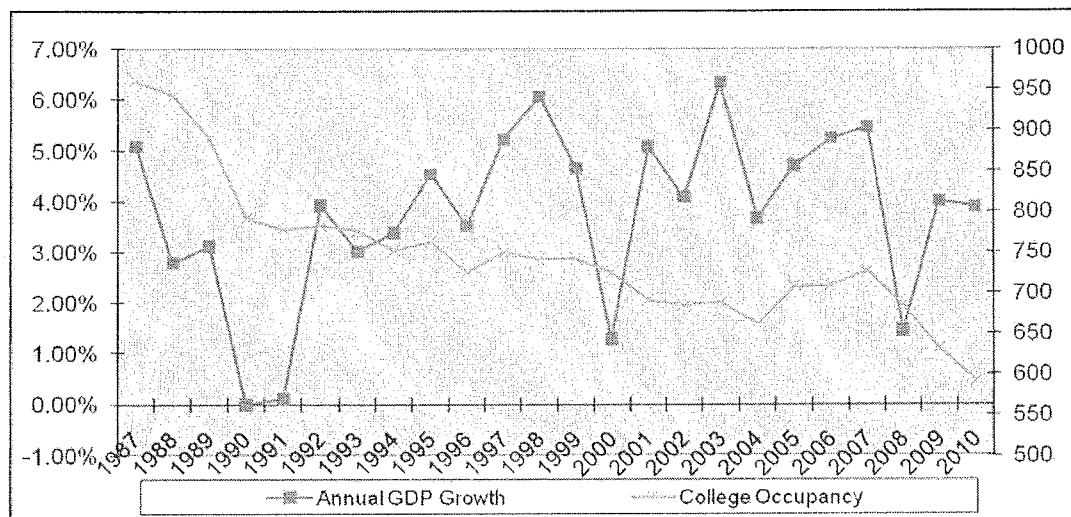


Figure 3 – Annual GDP Growth vs College Occupancy (Source: ABS, CHSHA)

Testing of the relationship between College occupancy and GDP growth indicated a weak positive relationship between the two items. While the goodness-of-fit ( $R^2$ ) level of 0.02 indicates that there is not likely to be any direct causal relationship between GDP growth and College occupancy levels, casual observation of severe shocks to the economy (1990 recession, 2000 tech bubble, 2008 global financial crisis) can be seen to have an effect of reducing occupancy levels.

### 5.2.2 Interest Rates

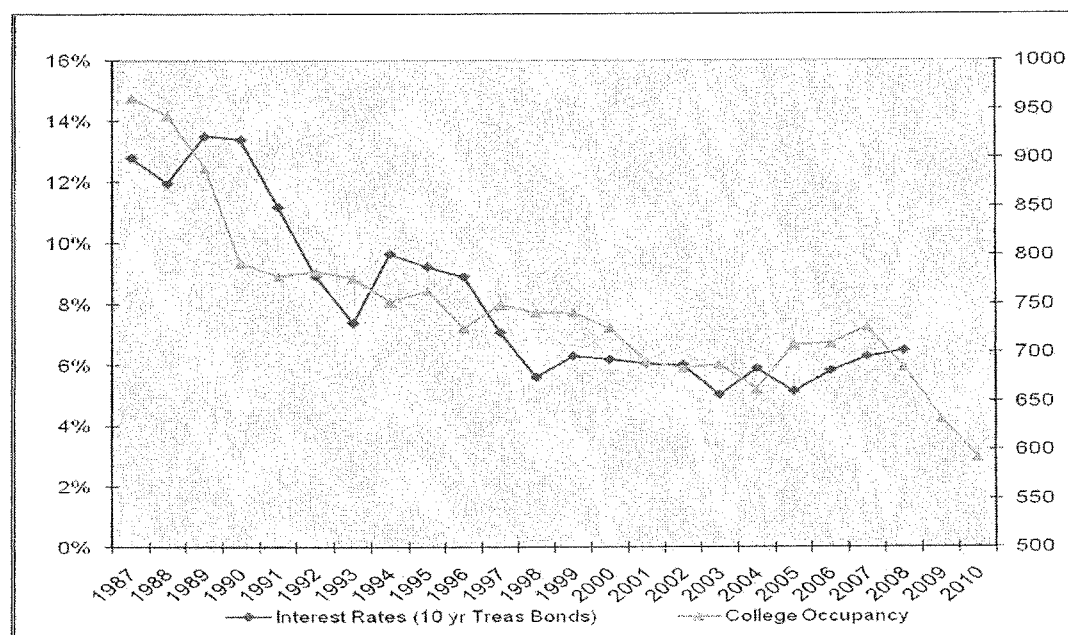


Figure 4 – Interest Rates vs College Occupancy (Source: ABS, CHSHA)

Testing of the relationship between College occupancy and interest rates indicated a positive relationship between the two items. This may be considered counter-intuitive to the logic that with more disposable income available to families, it is more likely that occupancy rates would rise as interest rates are eased, hence a negative relationship between the two items may be expected.

A possible explanation for this is that the Residential Colleges may be viewed by students and parents as an inferior good in an economic sense. As income rises, more students may be directed to boarding facilities associated with private schools due to the perceived higher amenity level of the private boarding facilities. It may also be the case that the effect on Residential College occupancy is simply a flow-on effect from an underlying issue of inferiority of a complementary good – public education. Public education may be perceived as an inferior good when compared to private education. Hence as interest rates



fall and disposable income rises, the demand for public education falls as students shift to private education, and demand for places at the Residential Colleges also falls.

While the Goodness-of-fit ( $R^2$ ) level of 0.68 indicates a moderate causal relationship between interest rates and College occupancy levels, a test of a lagged relationship was also run, with the expectation that any changes to interest rates would have a lagged effect on occupancy levels based on the notion that movements to new schooling arrangements are more likely to occur in between school years as to not interrupt studies. This test yielded a higher  $R^2$  level of 0.82, which indicates strength in the theory of a lagged relationship between interest rates and College occupancy.

Interestingly, when similar tests were run comparing School populations to interest rates, the test for a direct relationship yielded an  $R^2$  level of 0.71, suggesting a slightly higher proportion of the changes to the schools' population being explained by interest rate movements compared to College occupancy. However, unlike the comparison between lagged interest rates and College occupancy, when the test is run with lagged interest rates and School numbers, it yields a lower  $R^2$  value than the test of the direct relationship.

It should also be noted that each of the tests performed were also adjusted to test for short-term spuriousity, none of which passed, giving rise to a question over the reliability of any effort to draw a direct link between interest rates and changes to College Occupancy or School populations.

The OECD Economic Outlook No 89, published in June 2011, has forecast a rise in interest rates in Australia in 2011-2012. Based on the available OECD data and the questionable possibility of a causal relationship between interest rates and College occupancy as discussed above, it is possible to posit that occupancy levels may rise in the short term due to interest rate movements, however without a great deal of certainty.

### 5.3 Town Population

To consider the decline in the population of the local State Senior High Schools, the logical next step is to see if a similar trend exists across the overall townships in which the Schools are located. This is best viewed on a town-by-town basis.

Table 1 (below) gives a summary of the changes in town populations over the course of a short-term viewpoint (9 years) and a long-term view-point (95 years where information was available).

	Shire Population									
	Long Term				Short Term				Overall Trends	
	Inc	Dec	Overall % Change	Sig	Inc	Dec	Overall % Change	Sig	Avg Annual change in Shire Pop'n (ST)	Average 5 Yearly % Change in Shire Population (LT)
Albany					x		13.8%	x	1.63%	
Esperance					x		9.3%		1.12%	
Geraldton	x		36.9%	x	x		15.7%	x	1.84%	14.83%
Katanning					x		3.8%		0.49%	
Merredin		x	-28.3%	x		x	-10.8%	x	-1.40%	1.99%
Moora		x	-22.3%			x	-4.4%		-0.55%	2.57%
Narrogin		x	-17.6%			x	-0.4%		-0.04%	14.32%
Northam	x		2.8%		x		7.8%		0.95%	5.46%
Mode/Average		x	-6%		x		4%		1%	7.83%

*Table 1 – Summary of Town Population Movements in Areas with Residential Colleges (source: Town/shire websites, Wikipedia)*

This table shows a different story to what might be expected after looking at the previous information. Although there has been a population decline in some of the smaller, rural townships in both the short-term and long-term (Merredin, Moora, Narrogin), the larger regional centres with proximity to Perth or the ocean (Northam, Albany, Esperance, Geraldton) are showing trends of increasing population. Albany and Geraldton's short-term growth appear to be quite aggressive in a short period of time, and Geraldton's growth is expected to continue with a significant infrastructure and subsequent business injection into the area with the construction of the Oakagee Port and Rail project.

Population decline in regional areas could be due to a number of factors including economic factors such as the mining boom, geographical factors such as a desire to live within proximity to coastal/metropolitan areas or weather related factors such as droughts or the incidence of severe weather events such as storms or flooding.

Population decline may be a factor in the case of some of the Colleges in smaller regional areas such as Moora, Merredin and Narrogin, but it does not appear to have any relevance to the number of school students in the larger regional centres. Hence, if population numbers are increasing in the larger regional areas, our next question was – why is this increase not flowing through to the school system?

#### 5.4 Increase in Private School Population

As discussed in Section 5.3, there appears to be an unusual negative relationship between the increasing populations of the coastal regional centres with Colleges (Albany, Geraldton and Esperance), and the number of students attending the local State Senior High Schools.

This difference may possibly be explained by the proliferation of Private Schools in these areas and steady increase in the population of students attending these schools. Table 2 and Figure 5 highlight the significant divergence in the population trends of the local State Senior High Schools and any private schools in the areas where private schools are located.

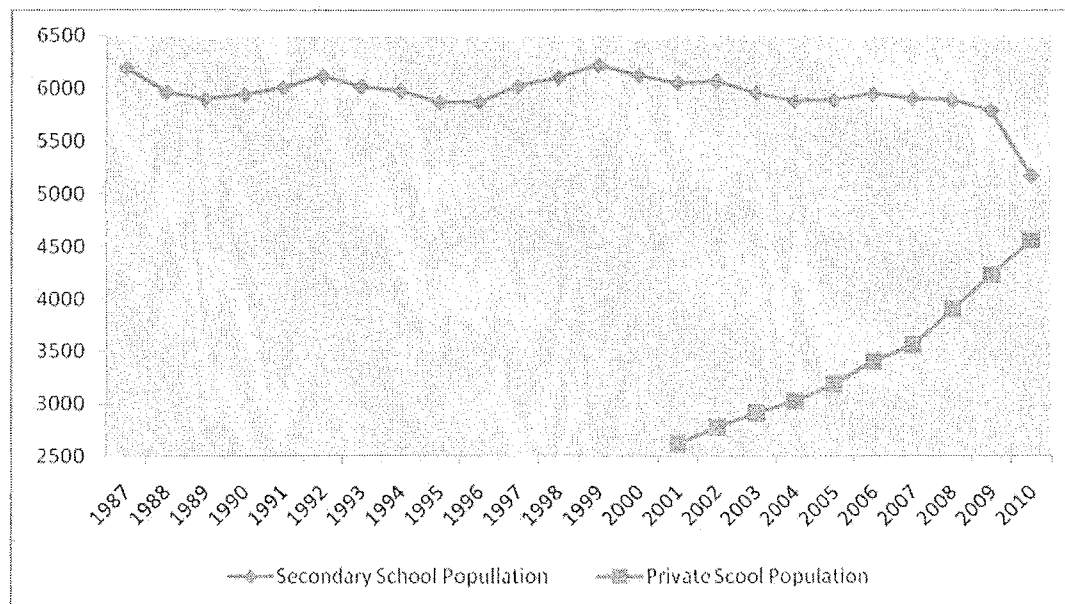
The information seems to indicate that in all areas where private education is available, it is becoming a preferred schooling option, with the local private schools more often and in some cases, significantly outperforming public schools in terms of population growth.

Interestingly, in 2010 the population of private schools continued to rise, despite the introduction of the half-cohort of Year 8 students into the secondary school system. This is in stark contrast to the significant reduction in students experienced by the public school system in 2010. The half-cohort shall be discussed separately in Section 5.5.

	Change in population of school(s) between 2001 and 2010			
	Private Schools %	Public Schools %	Private Schools #	Public Schools #
Albany	167%	-3%	1071	-27
Esperance	n/a*	3%	26	24
Geraldton	57%	-17%	810	-265
Katanning	-3%	-11%	-9	-46
Narrogin	13%	-25%	39	-213

\* \* The only current private school in Esperance opened in 2008. With zero theoretical students on prior years, percentage increases could not be calculated as per the other schools. With so few students in the schools fledgling years, small increases in actual numbers could be calculated as large percentage increases.

*Table 2 – Change in Population of Private and Public Schools in Residential College Towns between 2001 and 2010 (Source: Dept of Education)*



*Figure 5 –Population of Private Schools vs Public Schools in Residential College Towns between (Source: Dept of Education)*

## 5.5 Half Cohort

As discussed previously, there was a sharp decline in the number of students attending the local State Senior High Schools in 2010. The cause for this abrupt drop in student numbers across the State was due to the flow-on effect of a decision by the Department of Education in 2003 to shift the age range for children who would be eligible to start their schooling on any particular year.

Prior to 2003, students entering year one turned six (6) years old in the year they started year one. From 2003, students entering year one would consist of students turning six (6) between July 1 and December 31 of the preceding year and students turning six (6) between January 1 and June 30 in the year they started year one. As a consequence, in 2003, only students with birthdays from 1/1/03 to 30/6/03 were enrolled in year one. That is, about 50% of the usual number of students entered school in the 2003 cohort.

The half cohort has aged through the schooling system and entered high school in 2010. Based on the change from the previous few years' figures, the half cohort equates to approximately 500 less students attending the State Senior High Schools in College towns. While this is a short-term phenomenon which will have exited the school system by 2015, the immediate effect (based on the

previous assumption of a constant 10% patronage of Residential Colleges by State Senior High School students) is an average loss of approximately 50 students from the College system until 2015.

## 5.6 Home Schooling

Home schooling was considered as another potential cause of dwindling College numbers. It is suggested that, if there is an increase in the trend of students being home-schooled in country areas, then there is likely to be less demand for boarding services for country schools.

Figure 4 shows the total number of WA students in regional areas who are involved in home schooling\*. The graph shows a significant decrease in numbers between 2003 and 2004. It is possible that this is attributable to the *half-cohort* as discussed in Section 5.4. While the half cohort only entered high-school age in 2010, the figures below are for all school-aged children, hence the effect would be seen when these children began schooling.

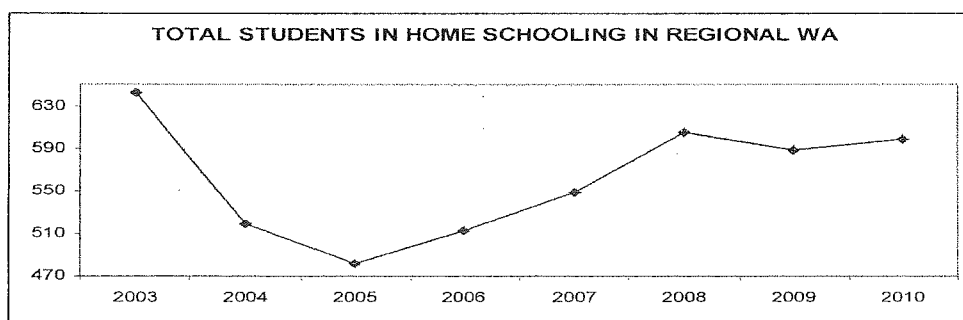


Figure 4 – Total Students in Home Schooling in Regional WA (Source: Dept of Education)

Without more data and greater specificity within the data, particularly the isolation of figures for secondary aged students, it is difficult to draw conclusions in this area. If we are to take the data on its merits it may be possible to conclude that in the short-term there has been an increase in the preference for home schooling in regional areas. However, even under the assumption of an even distribution of the age of the students and proportional distribution of students based on geographical locations, the total number of students involved in home-schooling indicates that any variation in home-schooling levels is likely to have little or no discernable impact on the number of students attending the Colleges.

\* Figures were only available from 2003 onwards, and no information was available that split the figures between primary and secondary aged students.

## 5.7 Political Factors

Underlying population changes may be changes in the political landscape. Table 3 shows the results of both state and federal elections in recent years.

Some of the data was unable to be tested econometrically due to incompatibility of the data with supporting town population data. Where that data matched and analysis was feasible, dummy variables were used to simulate changes in the seat, and a test was run to determine the likelihood of the dummy variable having any influence over College occupancy. Of the tests performed, there was no evidence to suggest that any changes to the political landscape had a significant effect on town populations or College occupancy.

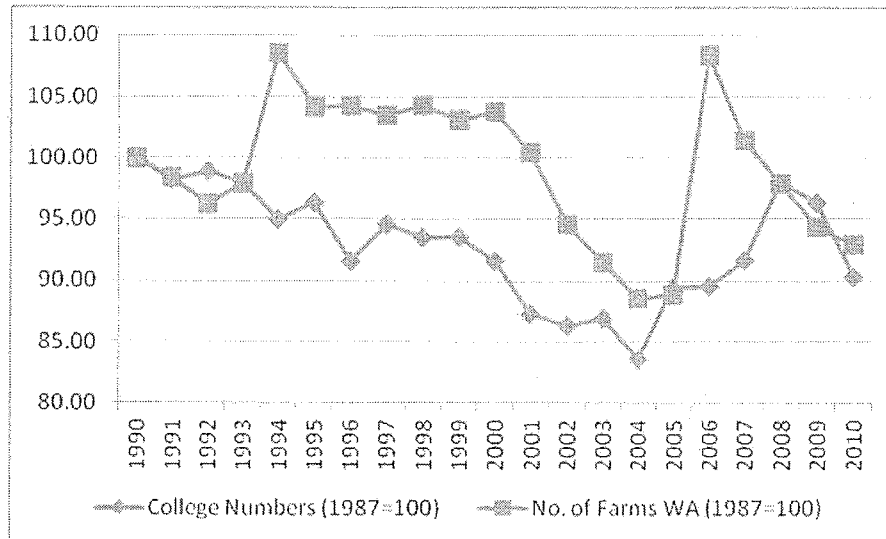
Federal Seat	Towns	Federal Election Years							
		1990	1993	1995	1998	2001	2004	2007	2010
Durack	Ger, Mer, Moo								
O'Connor	Alb, Esp, Kat, Nar								
Pearce	Northam								

State Seat	Towns	State Election Years					
		1991	1995	1998	2001	2005	2008
Central Wheatbelt	Nor, Mer						
Geraldton	Geraldton						
Moore	Moora						
Eyre	Esperance						
Albany	Albany						

	Liberal		Nationals
	Labor		Greens

Table 3 – Election Results in State and Federal Elections (Source: Wikipedia)

## 5.8 Farm Numbers – Western Australia



An analysis of the number of farms in Western Australia against residential college numbers shows some correlation, particularly between the years 1994 – 2004 and then again from 2008 – 2010. The most notable characteristic of the number of farms in the period is the large spikes in 1994 and 2006. We were unable to obtain any information as to why these spikes occurred. However we have included it here as a potential contributing factor.

## 5.9 Closure of the Katanning Residential College

The closure of the Katanning Residential College in 2010 does not seem to have been a significant factor. Those students who were not finishing school in 2009 enrolled at other Colleges in 2010. The availability of two other Residential Colleges in the Great Southern Region at Albany and Narrogin meant that students in the region still had access to high quality secondary schooling in the region supported by residential colleges following its closure.

## 5.10 Changes to Educational Requirements

In 2007, the laws surrounding student participation in schools changed, requiring students to complete secondary education up to the completion of Year 12 studies, increased from Year 10. In lieu of this requirement, students were able to complete an equivalent vocational course or traineeship.

### **5.11 Cultural Changes**

Support for equal opportunity, disability services and provisions for gifted and talented students boosted the target population. In combination with the opening of two new residential colleges in 2007 the overall enrolment increased in 2007, 2008 and 2009. However, nearly all of the gains were lost in 2010. The overall enrolment declined suddenly and significantly in 2011.

## **6 COLLEGE-BY-COLLEGE ANALYSIS**

### **6.1 ALBANY RESIDENTIAL COLLEGE**

While the township of Albany is experiencing solid growth, most of the expansion of school-aged children has resulted in an expansion of the private school system in the area. The number of private secondary school students in the area has increased by over 1000 students in the past decade, while the corresponding result for the State Schools has been a reduction of approximately 30 students.

The Residential College has experienced varying student numbers in the last decade, with a trend of growth, but consistently high numbers which allow the College to operate to a surplus.

### **6.2 ESPERANCE RESIDENTIAL COLLEGE**

Like Albany, the township of Esperance is experiencing solid growth, however the private schools appear to be benefiting from this more than the State Senior High School. Despite this, however, Esperance Senior High School is the only public school within the system to have a steady increase in student numbers over recent years.

In direct competition with the Esperance Senior High School is only one private school, the Esperance Anglican Community School. The school opened in 2008, and offered places for years 8-10 only, but will expand its capacity to accommodate years 11-12 by 2013 and accommodate up to 450 students. However currently it is the only private school in the township. If other coastal townships such as Busselton are to be used as a guide, it is likely that demand will see more private secondary schools open in the area in the next decade.

Although numbers at the Residential College have declined in the last few years, it is likely that this trend will turn around with the continued growth of the township and public school system, and the relative lack of private schooling options in the short-term.



### **6.3 GERALDTON RESIDENTIAL COLLEGE**

Like Albany and Esperance, the township of Geraldton-Greenough is experiencing solid growth, however the private schools appear to be benefiting from this more than the State Senior High School. The number of private secondary school students in the area has increased by over 800 students in the past decade, while the corresponding result for the State School has been a reduction of approximately 230 students.

The township is expected to benefit greatly from the upcoming Oakajee Port and Rail project. With an expected construction cost of \$4b, the port will have a capacity to move approximately 35 million tonnes from WA mines offshore annually, and is expected to be completed by 2013-2014, just 23km north of Geraldton. The likely result of the infrastructure construction and the day-to-day operation of the Port, once completed, is a solid growth in the area's population to take up employment in the construction of and/or operation of the Port.

Depending on the exact size and nature of the population growth due to the Oakagee Port and Rail project, the Residential College could see a small or large benefit. If the growth is significant enough to necessitate the opening of another State Senior High School in the Geraldton region, the Residential College could find its immediate market doubled within the next decade. Conversely, with the Oakajee Port adding further economic prosperity to the area, the trend of increasing preference towards private schools may see the market flooded with other private schooling options, possibly including boarding.

### **6.4 KATANNING RESIDENTIAL COLLEGE**

Although the College has now been decommissioned, we still considered the trends in the area due to the available data and insight it might give into Colleges in similar situations and the overall trends within the system.

The Katanning township appears to have had a fluctuating population in the short-term, and the statistics do not lend any confidence to any observable trend, although it was noted that there was an unusually large increase in the population in 2009, leading to the highest population level at any point in the last decade.

The township may receive an economic and population injection due to the possibility of a gold mine within the region being re-opened. After positive results from drilling tests by the mine's owners suggesting the mine has the ability to produce gold in amount similar to the Boddington mine and the pervasive and significant rise in gold price over the last decade to record levels, the reopening of the mine could be a formality rather than a possibility.

The current, ambiguous trend for the town population is in contrast to the local State Senior High School population, which shows a clear negative trend in the long-term, with a sharp reversal in 2005. From this point onwards the school data shows a clear upward trend when removing the effect of the half-cohort from consideration. While there is not enough data to confirm the recent sharp turn-around in school numbers with any confidence, the observational aspect of the data cannot be discounted.

The Residential College's student numbers showed a similar pattern to the School's population, with a slight increase in recent years, prior to the effect of the half cohort and then the closure of the facility.

With significant spare capacity at nearby residential colleges in the same region adjacent to high quality secondary schools there is no likelihood that this facility will ever re-open.

#### **6.5 MERREDIN RESIDENTIAL COLLEGE**

The township of Merredin has seen a trend of declining population in the long-term, shedding 40% of the town's population since its peak in the 1960's. This trend has been somewhat mirrored by the long-term decline in the school population. The school did experience a bubble between 1997 and 2001, however, but following 2001 the pattern has returned to that of steady decline.

The figures exhibit similar characteristics to that of the school data, including the bubble between 1997 and 2001, and the declining trend both prior to and after the bubble.

It is not expected that this trend will experience any other significant deviations in the future with the exception of the passing of the half-cohort through the school system.

#### **6.6 NARROGIN RESIDENTIAL COLLEGE**

The Narrogin Residential College has been the lynch-pin of the College system for the last few decades. The College has consistently attracted the most students out of any College on an annual basis, often with 100+ more students than the next largest College, which has generally been Geraldton or Albany. The average number of students at the College over the past 25 years has been just over 230, however, for the past 5 years the average has dropped to a little over 200.

After a number of years of relative strength and success in the College system, the Narrogin Residential College appears to be losing its place as the Authority's most successful College. Numbers have dropped dramatically in a short period

of time. Up until 2006 the College was regularly seeing numbers around the 250 range, however, since 2006 the number has dropped to 163, or by 33%, in a period of just four years.

## **6.7 NORTHAM RESIDENTIAL COLLEGE**

The Northam Residential College has experienced the highest rate of loss of College students in the past 25 years. In 1987 the Northam Residential College had the third highest number of students attending the College, behind Narrogin and Geraldton. The College now has the equal second-to-lowest number of students attending the College.

Northam Senior High School has seen an overall trend of decline in student numbers over the last 25 years, however it has experienced a sharp drop of around 25%, or 185 students, since 2000.

Although there is no direct local competition for students, Northam is located relatively close to Perth. The closest private school catering to high-school aged students is located in Mundaring, which is 60km from the Northam town-site. As Perth's urban sprawl continues outwards, areas such as Mundaring are developing from fringe towns themselves to larger suburban villages. As areas such as this prosper, educational opportunities will expand and attract students who seek opportunities outside of the regular educational framework.

The trend of declining numbers at the Northam Residential College is not expected to abate in the short-term.

## **6.8 ST. JAMES RESIDENTIAL COLLEGE (MOORA)**

The town of Moora, unfortunately, appears to be suffering a similar fate to many other small towns in regional Western Australia. Moora has seen approximately 18% of its population disappear since its peak in the 1970's. In more recent times, while somewhat more stable, the town has lost almost 5% of its population, or 120 people.

Central Midlands Senior High School, the only senior school in the region, has also experienced a decline in student numbers recently. Although there was a period in the early 2000's of small growth, the overall trend for the school for the last few decades has been steady decline in its enrolment. Its low enrolment relative to other senior high schools makes it difficult to offer comparable secondary educational opportunities

However, the school has taken positive steps in recent years to present itself as a school where academic achievement is possible which can lead to real futures

for students. In 2010 the school attained a perfect graduation rate for HSC students for the 6<sup>th</sup> consecutive year, with only one school in WA ever achieving a better record than this. In addition to this, the Federal Government recently approved \$3.5m in funding to build a trade training centre at the school which, once in operation, will provide a number of educational opportunities to students that were previously unavailable at the secondary school level. With a number of students attending district high schools in neighbouring towns, such opportunities could see the Central Midlands Senior High School increase student numbers in coming years as the school's reputation and curriculum grows.

The School actively and aggressively markets the Residential College in its efforts to increase its enrolment.

#### **6.9 BROOME RESIDENTIAL COLLEGE**

Broome is the major education centre in the Kimberley region with two senior secondary schools, a TAFE College and Notre Dame University. The Broome Residential College was established in partnership with Catholic Education to provide for students attending both the Broome Senior High school and St Mary's College. These are the only two schools in the region providing for the senior secondary schooling needs of students attending a number of public and Catholic Education primary schools in remote communities throughout the region.

The Broome Residential College commenced in 2007 with places for 40 students. Subsequent additions have boosted its boarding capacity to 72 students. While a number of students in the region will continue to choose senior secondary school options in the metropolitan area and Darwin, the availability of a quality option in Broome has met with good support. With demand on the increase, further additions are planned to increase its boarding capacity to 115 by 2014.

#### **6.10 CITY BEACH RESIDENTIAL COLLEGE**

The City Beach Residential College was established in 2007 and provides access for high achieving and talented country students to metropolitan selective secondary schools like Perth Modern School and John Curtin College of the Performing Arts. Access to these and other public school programs is based upon a selection process. Each year places have been offered to a new cohort of talented country students. The number of country students accepting the offer of a place in these selective public school programs and needing accommodation has continued to increase. Additions are planned to increase its boarding capacity from 72 to 96.

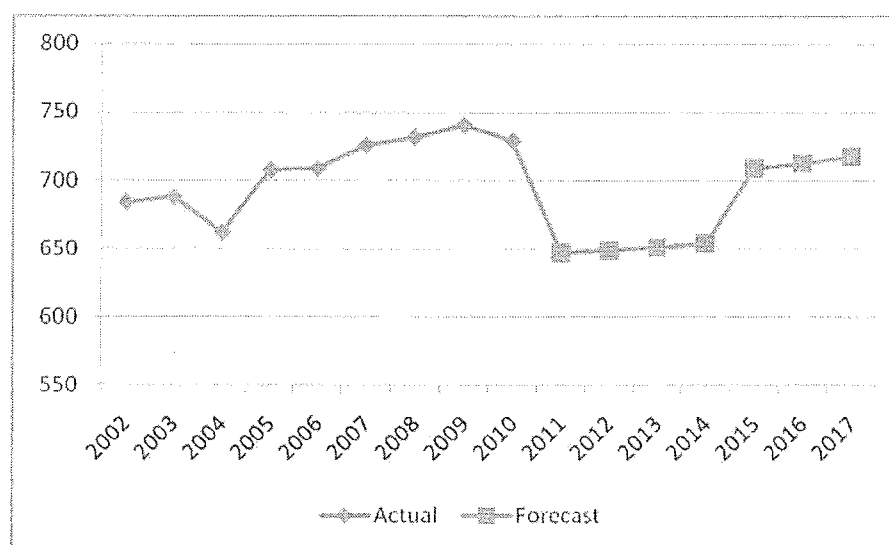
## 7 FORECAST OF STUDENT NUMBERS

Table 5 shows the forecast of student numbers at the Colleges.

College	2009	2010	2011	2012	2013	2014	2015	2016	2017
Albany	120	123	103	105	107	109	120	122	124
Esperance	94	91	80	81	82	83	90	91	92
Geraldton	108	108	97	96	95	94	100	99	98
Katanning	24	19	0	0	0	0	0	0	0
Merredin	36	35	25	24	23	22	23	22	21
Moora	33	32	28	28	28	28	30	30	30
Narrogin	194	170	158	154	150	146	153	149	145
Northam	31	34	37	36	35	34	36	35	34
Broome	56	60	57	59	61	64	72	75	78
City Beach	45	57	62	66	70	74	85	90	96
<b>Totals</b>	<b>741</b>	<b>729</b>	<b>647</b>	<b>649</b>	<b>651</b>	<b>654</b>	<b>709</b>	<b>713</b>	<b>718</b>

*Table 5 – Forecast of Future Student Numbers in the College System\**

The methodology for constructing this forecast is discussed in Appendix 1.



## 8 APPENDIX 1 – FORECASTING METHODOLOGY

A number of forecasting methodologies were considered for use in deriving the forecast figures. Econometric modelling was considered an inappropriate forecasting technique due to the auto-regressive nature of the College and School data, and the requirement of forecasting relevant inputs such as town populations, economic growth, interest rates and private school populations (with

each forecast containing their own level of variability). In addition to this, the discussion thus far has not been able to give a strong indication of actual correlation between many of the suggested inputs and College occupancy. Hence any forecasts would be subject to significant variance.

A number of preliminary weighted-average models were then developed based on various weighting methodologies. For each methodology, a weighted-average growth level was calculated for each college individually. This growth level was applied to the most recent (2011) figures and extrapolated forward to predict future occupancy rates at each College. Due to the constraint of College capacities and the requirements of rounding student numbers to the nearest whole number on any given year, the various weighting methodologies yielded predominantly the same results. Hence it seemed appropriate to use a simple weighted average, taking into account all of the information provided from 1987 to 2011. Under such a technique, approximately 70% of the growth rate is determined by the growth pattern that occurred in the last decade.

After the growth rate for each College was applied to the 2011 figures, the figures were then adjusted for any breaches of College capacity, and rounded to the nearest whole number using a positive/negative methodology based on the short-term growth patterns of each College. If the short-term growth level was determined to be negative for a particular College, the number was rounded down. Conversely, if the short-term growth level was determined to be positive for a particular College, the number was rounded upwards.

The forecast was also adjusted to include the effects of the passing of the half-cohort through the schooling system. We estimated that the half-cohort reduced the overall level of student participation at relevant public schools by approximately 8%. It was assumed that as the half-cohort passed through the school system, the number of school students would rebound by the same proportion as the original reduction, and that would lead to a proportionate increase in numbers at the Colleges.

This forecast has not taken into account any further changes to town populations, or economic indicators such as forecasted economic growth or interest rate movements.