

13 March 2009

Actuarial Report as at  
30 June 2008  
Police Superannuation Scheme

**MERCER**



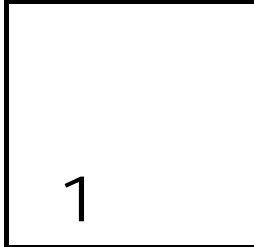
MARSH MERCER KROLL  
GUY CARPENTER OLIVER WYMAN



Marsh & McLennan Companies

## Contents

1. Executive Summary .....	1
2. Legislation Affecting the Scheme.....	3
3. Funding of the Scheme .....	5
4. Assets of the Fund.....	8
5. Valuation Assumptions .....	11
6. Valuation Results – New Scheme.....	15
7. Valuation Results – Old Scheme .....	17
8. Projected Cost to the State Government .....	22
9. Conclusions.....	24
10. Appendix A – Benefits and Contributions .....	25
11. Appendix B – Member Information.....	39
12. Appendix C – Contributor Experience .....	47
13. Appendix D – Pensioner Experience .....	53
14. Appendix E – Demographic Assumptions.....	56



## Executive Summary

- 1.1. I have prepared this report at the request of the Minister, to satisfy the requirements of Section 15 of the Police Superannuation Act, 1990. This Section of the Act requires an Actuary to provide a report to the Minister:
  - (a) on the cost of the Police Superannuation Scheme to the State Government, and
  - (b) estimating the proportion of future benefits under this Act that can be met from the Fund.
- 1.2. This report continues the series of reports that have been prepared to address these issues in the past. These reports have been prepared on a regular basis, generally every three years, and have provided information about the funding and cost of the superannuation scheme which is used for members of the police force in South Australia.
- 1.3. The previous report was prepared by myself as at 30 June 2005, with that report dated 22 March 2006.
- 1.4. As from 1 July 2008, all New Scheme members (representing members in the lump sum scheme) were transferred to the Triple S Scheme. The report is therefore primarily concerned with Old Scheme members (representing members in the pension scheme).
- 1.5. I have prepared this report with the assistance of Mr John Barrett and Mr John Charles, Actuarial Officers, Department of Treasury and Finance. I have used computer analyses prepared by Mr Barrett and Mr Charles, which derive their information from the administration computer system that is used by the Police Superannuation Board. I have

been grateful for the assistance provided in this exercise and for access to their extensive knowledge of the operations of the Scheme.

1.6. In this report, I have:

- provided information about the current funding status of the Scheme,
- commented on the funding proportion of benefit payments, and
- produced estimates of the future cost of the Scheme.

1.7. The major conclusions which I have made in this report are that -

- (i) the funding proportion for the Old Scheme should be reduced from 22% to 17.5%, largely due to the allowance made for a negative investment return of -17.6% in 2008/09, and
- (ii) the Government contribution for future service liabilities for the Old Scheme should be increased from 19.5% to 20.5% of contributors' salaries.

1.8. I confirm that this Report has been prepared to comply with Professional Standard PS400 of the Institute of Actuaries of Australia, relating to the Investigation of Defined Benefit Superannuation Funds. Where requirements of the Standard are not relevant or appropriate for the Scheme, I have omitted them.

2

## Legislation Affecting the Scheme

### Governing Legislation

- 2.1. The Police Superannuation Scheme is governed by the Police Superannuation Act, 1990 (“the Act”), which replaced the Police Pensions Act, 1971.
- 2.2. Under the Act, members who joined the Scheme before 1 June 1990 are able to receive benefits in pension form, while those members who joined on or after that date receive benefits in lump sum form. An overview of the benefits and contributions under the current legislation is provided in Appendix A.

### Amendments to Legislation

- 2.3. Since the time of the previous report, there have been a number of amendments to the Act which are summarised in this section.
- 2.4. The amendments were effected by:
  - The Statutes Amendment (Domestic Partners) Act 2006 (operates from 1 June 2007);
  - The Statutes Amendment (Police Superannuation) Act 2008 (operates from 1 July 2008);
- 2.5. The Statutes Amendment (Domestic Partners) Act 2006 amends the definition of putative spouse by effectively reducing the period of cohabitation from 5 to 3 years. Where a person becomes a spouse after the retirement of a contributor, the qualifying period of 5 years for a spouse pension has been removed .

- 2.6. The Statutes Amendment (Police Superannuation) Act 2008 provides for the transfer of all New Scheme members to the Triple S Scheme as from 1 July 2008. The amount of member and employer balances transferred to Triple S was determined in accordance with Part 2 of Schedule 3 to the Southern State Superannuation Act. All voluntary contributions, rollover and co-contribution accounts for both Old Scheme and New Scheme members were transferred to Triple S. Old Scheme preserved members who were only entitled to a lump sum benefit were also transferred to Triple S. These preserved members were those who were entitled to a preserved Superannuation Guarantee benefit, or had preserved their benefit on resignation with less than 10 years service. .

## Superannuation Surcharge

- 2.7. The “Superannuation Surcharge” is a tax which was introduced by the Federal Government from 20 August 1996. The Surcharge was applied to this Scheme in the form of a “debt account” for affected members. That debt account is accumulated with the long term (Federal) Treasury bond rate until the person becomes eligible for a benefit entitlement under the Act, at which time the accumulated balance is required to be paid to the Australian Tax Office.
- 2.8. Legislation was passed which has abolished the Surcharge with effect from 30 June 2005. However, the administration of debit accounts in relation to prior year surcharge assessments will need to continue for some time.

3

## Funding of the Scheme

### Member Contributions

- 3.1. Old Scheme members who joined after their 30<sup>th</sup> birthday contribute at 6% of salary, while members who joined before their 20<sup>th</sup> birthday contribute at 5% of salary. Contribution rates decrease from the level of 6% of salary to 5% of salary for members who joined between these ages.
- 3.2. The average rate of member contribution for current members at 30 June 2008 was 5.2% for the Old Scheme. These member contributions are paid by the Treasurer into the Police Superannuation Fund. This Fund is managed and invested by Funds SA (the business name of the Superannuation Funds Management Corporation of South Australia).
- 3.3. The amount of assets in the Fund generally corresponds with the total of individual contribution accounts maintained for the members.
- 3.4. The Fund is required to meet its share of administration costs and benefit payments.

### Funding of Public Sector Superannuation

- 3.5. Since 1 July 1994, the State Government has undertaken a program that is intended to progressively fund its accumulated superannuation liabilities. This program has been set out over a 40 year period, with the intention of achieving complete funding of accumulated superannuation liabilities by the year 2034.

- 3.6. This program will produce a specific pool of externally invested assets, which are currently managed by Funds SA. These assets are maintained in distinct accounts for each of the State schemes that are supported by the State Government. The assets of the Police Superannuation Scheme – Employer Contribution Account are shown in the table in paragraph 4.1 below.
- 3.7. The payments that are being made into the investment pool are intended to meet the cost of newly accruing benefits each year, as well as to meet a portion of the existing past service liability.
- 3.8. During the three years to 30 June 2008, total payments of \$105,300,000 were made in respect of the past service liability for members of the Police Superannuation Scheme. These contributions are paid into Employer Account for the Scheme and are not taken into account in setting the future contribution levels or funding proportions.

### Cost Sharing Proportion

- 3.9. The proportion of benefits met from the Fund is set by the Board under sub-section 14(3) of the Act. This is effectively the proportion of lump sum and pension benefits that must be funded out of the assets held in the Police Superannuation Fund. As mentioned in paragraph 1.1, this report must provide an estimate of the proportion.
- 3.10. The prescribed proportion is 100% for all resignations involving a return of the member's contribution account balance (with the balance of this benefit being fully met by the Government). For other types of entitlement, a different prescribed proportion applies.
- 3.11. For members of the Old Scheme (pension benefits), the prescribed proportion is currently 22%. This means that the Government is responsible for meeting the remaining 78% of Old Scheme benefits at the time a member is paid their benefit. The Government's share of the benefit is met from the assets of the Employer Account.

### Share of Administration Costs

- 3.12. Regulation 12, pursuant to Section 10(7)(b) of the Act, specifies the proportion of administration costs that must be met by the Fund. The balance of these costs is met by the Government.



- 3.13. The prescribed percentage is 30%. In previous reviews, the assumed crediting rate for contribution accounts was a rate net of the prescribed proportion of the Fund's share of administration costs. In this review, Fund administration expenses have been valued separately on a per member basis and then based on projected active membership, assuming expenses increase at the same rate as salary inflation.
- 3.14. This change in approach produces a more accurate reflection of the administration costs of the Scheme and is consistent with the approach adopted for the State Superannuation Scheme.

4

## Assets of the Fund

### Details of Assets

- 4.1. At 30 June 2008, the assets of the Fund and the Employer Account were invested with Funds SA in the following major asset classes:

<b>Asset Type</b>	<b>Fund (\$'000)</b>	<b>Employer Account (\$'000)</b>	<b>Total (\$'000)</b>
Inflation Linked Investments	31,931	39,853	71,784
Property	36,806	45,939	82,745
Equities – Australian	112,463	140,365	252,828
Equities – International	112,613	140,554	253,167
Fixed Interest Investments	20,167	25,171	45,338
Diversified Strategies – Growth	17,062	21,295	38,357
Diversified Strategies – Income	23,987	29,939	53,926
Short Term Money Market	3,897	4,864	8,761
<b>Total Investments</b>	<b>358,926</b>	<b>447,980</b>	<b>806,906</b>
Other Assets and Liabilities	261	498	759
<b>NET ASSETS</b>	<b>359,187</b>	<b>448,478</b>	<b>807,665</b>
Voluntary Contributions and Rollins (Transferred to Triple S)	10,965		10,965
Preserved Lump Sum benefits (Transferred to Triple S)	1,017	11,416	12,433
<b>NET ASSETS TO PAY DEFINED BENEFITS</b>	<b>347,205</b>	<b>437,062</b>	<b>784,267</b>

- 4.2. At 30 June 2005 the net assets were \$285.5 million for the Fund and \$290.5 million for the Employer Account.
- 4.3. The amount held in the Employer Account is intended to be used for the purpose of paying the Government's share of the benefits as they fall due.
- 4.4. I have used the market value of the assets of the Fund for the purposes of my projections and assessment of the funding position of the Scheme. I consider that the market value is reasonable for this purpose, and this represents a continuation of the practice from previous reports.

## Returns on Investments

- 4.5. One of the major objectives which Funds SA has for the management of the assets of the State's public sector superannuation schemes is the achievement of long term returns which are 4.5% per annum in excess of inflation. The assumptions that I have used to assess the financial position and emerging cost of the Scheme are consistent with this objective.
- 4.6. The assets of the Old and New Schemes have a significant emphasis on "growth" investments, which is consistent with the objective of achieving a high real rate of return. One of the results of this emphasis on "growth" investments is that returns will be variable over different years, as Australian and international markets fluctuate over time.
- 4.7. Rates of return on the assets for the Old and New Schemes (money weighted), allowing for the investment fees and administration expenses, for the last three years have been:

	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>
Old Scheme	19.4%	19.1%	-11.1%
New Scheme	19.2%	18.2%	-10.9%

- 4.8. Over the three years ending 30 June 2008, the average rate of return on the assets has been 8.2% per annum for the Old Scheme and 8.1% per annum for the New Scheme.

## Returns Credited to Member Contribution Accounts

4.9. At the end of each financial year, the Police Superannuation Board determines a rate of return that will be used to increase each member's contribution account. The rate which is used allows for the rate of return earned by the assets of the Fund and the Fund's share of administration costs.

4.10. The rates of return which have been used to credit member compulsory contribution accounts in the first two years of the period have been generally based on an average of the net returns over the previous three years. In 2007-08 the Board determined a crediting rate which fully allocated the existing smoothing reserve. As a result future crediting rates will be based on the actual investment earning rate net of administration costs. The rates credited are set out in the table below:

	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>
Old Scheme	17.5%	17.9%	-6.4%
New Scheme	17.4%	17.5%	-4.9%

4.11. The rates of return which have been used to credit member voluntary contribution accounts and roll over accounts during the period were:

	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>
Old Scheme	19.4%	19.1%	-11.1%
New Scheme	19.2%	18.2%	-10.9%

5

## Valuation Assumptions

- 5.1. An actuarial investigation involves using a model to project the experience of the members of the Scheme and the balance of the Fund into the future. The model allows for demographic factors (including rates of mortality, retirement, invalidity and resignation) and economic factors (including rates of investment returns, crediting rates and inflationary increases in benefits) as well as other factors such as rates of pension commutation and preservation.
- 5.2. I have used a projection and funding method known as “aggregate funding”, that involves calculating the present value of all liabilities relating to present contributors, pensioners and preserved members, and comparing the prescribed proportion of this with the present value of future member contributions together with the value of the Fund’s investments.

## Economic Assumptions

- 5.3. Assumptions are required to be made about future crediting rates, salary increases and CPI increases. These assumptions are inter-related, since it would be expected that crediting and earning rates should normally be higher than salary increases, which in turn should be higher than CPI increases.
- 5.4. For the purpose of this investigation, I have retained the same long-term assumptions as were used three years ago for each of general salary increases, future investment returns and crediting rates and future CPI increases. However, future investment returns and crediting rates are assumed to be before deducting administration expenses, with the liabilities of the Fund now including a separate allowance for expenses.

- 5.5. I have assumed a future general salary increase rate of 4% per annum. I have assumed that general salary increases will be 1.5% per annum in excess of CPI (as was assumed in 2005). I have assumed that investment returns will be 3.0% per annum in excess of general salary increases, resulting in a net investment return assumption of 7% per annum.
- 5.6. This “package” of assumptions produces an assumed real return of 4.5% above inflation in the long term and is consistent with the objectives of Funds SA and the real return used at the previous investigation. The main variation to the individual assumptions is an explicit assumption for the first year of the projection.
- 5.7. Based on actual investment returns to December 2008, I have assumed a return of -17.6% in 2008-09; which assumes a return of 3.5% for the 6 months to 30 June 2009.
- 5.8. I have allowed for the actual indexation of pensions at 1 October 2008, using a total increase in the CPI of 4.0% for 2008-09.
- 5.9. I have allowed for the immediate general increase in salaries of 3.5% that occurred on 1 July 2008. Since member contributions are based on the contributor’s salary at the 1 April preceding the financial year, this will not affect the member contributions paid during the year, but will have an immediate effect on benefit entitlements. Future general salary increases at the long term assumption of 4% are also assumed to occur on 1 July each year.
- 5.10. In addition to an assumed level of general salary increases, allowance is also made for promotional salary increases throughout a member’s career. A promotional salary scale is derived from prior experience. Although promotional salary increases were in excess of the level assumed during the period to 30 June 2008, no changes were made to the existing promotional salary scale. This decision was made on the basis that the higher promotional salary increases reflected the application of a number of new ranks that came into effect during the period to 30 June 2008.
- 5.11. I also note that I expect that promotional increases will become less important over time as the membership ages.

## Demographic Assumptions

- 5.12. The demographic assumptions that I have used in the projections and valuations were set after considering the experience of contributors and pensioners over the three year period to 30 June 2008, as well as the experience for prior periods. As the amount of experience for the Scheme is generally significant, the assumptions that are derived from the experience could be regarded as being reliable for the purpose of the calculations.
- 5.13. The experience observed over the three year period is summarised in Appendices C and D, while the assumptions adopted are summarised in Appendix E.
- 5.14. In general, I have retained the assumptions that were used in the previous valuation, unless they were inconsistent with the recent experience of the Scheme membership and that experience was considered to be significant. In some cases, I have retained the major features of the assumptions, but used projected population mortality rates, which are based on the 2005 assumed mortality improvement factors. These factors have not been changed for the current review.
- 5.15. The changes in assumptions related to:
- rates of mortality,
  - rates of age retirement,
  - proportions of resignations electing a preserved benefit,
  - proportions married,
  - rates of commutation, and
  - the age difference between male members and spouses,

I have provided a brief discussion of the changes made to the assumptions below. Details of the experience and the rates adopted are given in Appendices C, D and E.

## Mortality

- 5.16. Mortality rates in the past have been linked to prescribed percentages of the standard population mortality (Australian Life Tables 2000-02) at the valuation date. I have retained this approach for this investigation and I have recognised that the standard population mortality applies at a date prior to the valuation date. As a result, I have made allowance for improvements in mortality up to 30 June 2008.

## Age Retirements

- 5.17. During the investigation period the trend towards lower rates of age retirement has continued. As a result, I have now reduced these rates in line with the experience observed.

## Proportions Married

- 5.18. Proportions married have been increased due to removal of the 5 year qualifying period for a spouse pension in relation to marriages after retirement.

## Commutations

- 5.19. Allowance is made for pensioners and spouses to commute the pensions that they become entitled to. It was previously assumed that 20% of age and invalidity retirements and 10% of eligible spouses would commute their pensions to lump sums. As a result of experience over the last three years, the rate for age and invalidity retirements has been increased to 25% and for spouses has been reduced to 5%.

## Impact of Changes in Assumptions

- 5.20. Changes in economic assumptions are usually more significant in their impact than changes to demographic assumptions. The assumed investment return of -17.6% in 2008-09 has had a major impact on the valuation results. I have provided information about the effect of the economic and other changes on the valuation results in the next two Sections of the report.
- 5.21. Generally, only the change in the commutation rates has had a significant positive impact on the valuation results. In particular, for the Old Scheme, the lower age difference for spouse pensioners and the lower commutation rates have more than offset the impact of lower age retirements and the higher proportions married.



6
---

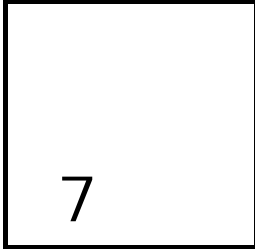
## Closure of the New Scheme

- 6.1. Under the provisions of the Statutes Amendment (Police Superannuation) Act 2008, all New Scheme members were transferred to the Triple S Scheme as at 1 July 2008. A summary of the amounts transferred were:

<b>Balances Transferred to Triples S</b>	<b>Member</b>	<b>Employer</b>	<b>Total</b>
	<b>(\$'000)</b>	<b>(\$'000)</b>	<b>(\$'000)</b>
New Scheme Accounts	22,311	47,653	69,964
Preserved Lump Sum benefits	730	2,922	3,652
Voluntary Contributions and Rollins	1,317	-	1,317
<b>Total</b>	<b>24,358</b>	<b>50,575</b>	<b>74,933</b>

- 6.2. The member amounts transferred represent each member's account balance in the New Scheme as at 30 June 2008. The accrued employer liability calculated using the 2008 assumptions was \$51.0m representing an excess of \$0.4m over the amount transferred.
- 6.3. Under sub-clause 15(11) of Part 2 of Schedule 3 to the Southern State Superannuation Act (see section 2.6 above), members receive a minimum benefit on retirement equal to the benefit that would have been paid under the Police Superannuation Act prior to their transfer to the Triple S scheme. The minimum benefit is payable if the member continues to contribute at the same rate as applied in the Police Lump Sum Scheme and the amount of the minimum benefit is specified in regulation 15 of the Southern State Superannuation Regulations.
- 6.4. Member contributions to the Triple S scheme in relation to service after 30 June 2008 will initially be at the same rate as the Police Lump Sum scheme but members can elect vary their contributions under sub-section 25(5) of the Southern State Superannuation

Act. The employer contributions rate is 10% of salary while the member contributes at a rate of 4.5% or more and 9% otherwise.



## Valuation Results – Old Scheme

### Calculation of Funding Proportion

- 7.1. To assess the financial position of the Old Scheme, I have projected the future experience of current contributors and pensioners, and then discounted these benefit payments to the current date. The resulting values are the present value of projected liabilities for members of the Pension Scheme, the prescribed proportion (22.0% in this analysis) of which must be compared with the value of the assets in the Fund and the present value of future member contributions.
- 7.2. I have set out below the results of the calculations using the current prescribed proportion of 22.0% of these liabilities. I have also adjusted the results to allow for a return for 2007/08 of – 17.6%. This return is based on the actual return of the Fund’s assets to December 2008 with an allowance for a 3.5% return for the balance of the financial year.

**1. Present Value of Prescribed Proportion of Liabilities**

	<b>\$'000</b>	<b>\$'000</b>
<b><i>Current Contributors</i></b>		
Age Retirements	254,435	
Invalidity Retirements	14,319	
Spouse and Children's Benefits	19,616	
Resignations with Cash Payments	816	
Expenses	2,064	291,250
<b><i>Current Pensioners</i></b>		
Age Retirements	58,105	
Invalidity Retirements	17,975	
Pensioner Spouses	6,303	
Contributor Spouses and Children	25,485	
Expenses	856	108,724
<b>Total Liabilities</b>		<b>399,974</b>

**2. Present Value of Assets**

	<b>\$'000</b>	<b>\$'000</b>
Future Member Contributions	56,806	
Fund Investments as at 30 June 2008	347,205	
<b>Total Assets</b>		404,011
<b>Surplus (Deficit)</b>		<b>4,037</b>
less adjustment for expected negative return in 2008-09	(79,857)	
<b>Surplus (Deficit)</b>		<b>(75,820)</b>

- 7.3. These results show that, if the Fund is used to meet the prescribed proportion (22.0%) of benefit costs, the Fund would have had sufficient assets to meet its obligations as at 30 June 2008. However, when allowance is made for an expected return of -17.6% for 2008/09, a deficit arises. The present day value of this deficit of assets over liabilities is \$75,820,000. This compares to a surplus of \$1,937,000 at 30 June 2005 assuming the Fund share was 22.0% at that time, or a surplus of \$17,430,000 if the Fund share remained at 21.0%.

- 7.4. If the prescribed proportion is decreased to 17.5% the Fund will have a small surplus of \$5.2m. I have therefore recommended that the proportion of benefits that can be met from the Fund be decreased from 22% to 17.5%.

## Projected Long Term Cost of the Scheme

- 7.5. I have also considered the long term cost of supporting the benefits in respect of service after 30 June 2008 for members of the Old Scheme. (Past service liabilities are being progressively funded by the State Government, as discussed earlier in this Report).
- 7.6. For this purpose, I have projected the future benefit payments based only on the future service of current contributors, and then discounted the projected benefit payments to the current date. The resulting values are the present value of the future service benefit liabilities for members of the Old Scheme.
- 7.7. I have shown the results of the calculations in the following table.

### Present Value of Future Service Liabilities

	\$'000	\$'000
Age Retirements	249,348	
Invalidity Retirements	11,181	
Spouse and Children's Benefits	17,030	
Resignations with Cash Payments	212	
Expenses	2,065	
<b>Total Liabilities</b>		<b>279,836</b>
Future Member Contributions		56,806
<b>Liability to be Funded by Government Contributions</b>		<b>223,030</b>
<b>Required Government Contribution Rate</b>		<b>20.3%</b>

- 7.8. This means that, if an amount equivalent to 20.3% of contributors' salaries is set aside as a provision or invested each year, the projected future service benefits would be able to be totally met by those future provisions or investments together with future member contributions, based on the projection assumptions. This compares to the contribution rate of 19.4% determined at the 30 June 2005 actuarial investigations. I therefore recommend that Government contribution rate be increased to 20.5% of contributor salaries.
- 7.9. The main reasons for the increase are:
- (i) the specific allowance for expenses introduced this year,

- (ii) the longer life expectancy associated with further improvements in mortality; and
- (iii) less contributors retiring and taking a lump sum benefit upon retirement between ages 50 and 55.

## Explanation of Change in the Financial Position of the Fund

7.10. I have analysed the change in the financial position, by considering the main contributing factors. These factors relate to both experience and changes in the valuation assumptions. This analysis is set out below.

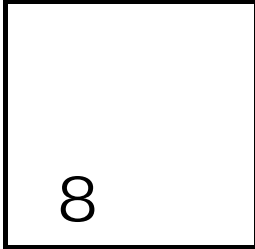
7.11. The following table sets out the major influences affecting the change in the financial position between 30 June 2005 and 30 June 2008. The starting point of this analysis is the surplus of \$17,430,000 at 30 June 2005 which was based on the previous funding proportion of 21%.

<i>Influence</i>	<i>Impact \$m</i>
<b><i>Experience</i></b>	
Change in fund proportion from 21.0% to 22.0%	(15.5)
Salary and promotional increases	(10.8)
Investment Returns	13.5
Higher pension increases	(2.6)
Commutation profit	1.3
Other	(0.4)
<b><i>Total Experience</i></b>	<b>(14.5)</b>
<b><i>Change in Valuation Assumptions</i></b>	
Assumed investment return for 2008-09 of -17.6%	(79.7)
Separate allowance for expenses	(3.3)
Changes to commutation assumptions	4.6
Other changes to mortality, spouse age differences and proportion married assumptions	(0.2)
<b><i>Total Change in Valuation Assumptions</i></b>	<b>(78.6)</b>
<b>Net Change in Surplus</b>	<b>(93.1)</b>

Note that these values have been rounded to the nearer \$100,000 and this may result in a minor rounding error compared to the actual change in surplus.

7.12. The major items above are discussed below:

- Change in fund proportion. Reflects the increase from 21% to 22% following the surplus identified at 30 June 2005.
- Investment Returns. Higher than expected investment returns were achieved as discussed in paragraph 4.8.
- Higher than expected salary increases were granted as discussed in paragraph C11.
- Assumed investment return of -17.6%. This impact recognises the difference between the assumed long term return of 7% and the actual return of -17.6%.

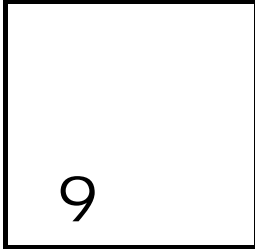


## Projected Cost to the State Government

- 8.1. I have projected the cost of the Old Scheme using the assumptions described in this Report, assuming that the recommended cost sharing arrangements apply in the future. I have recommended that the State Government be responsible for meeting 82.5% of the cost of benefits for members of the Old Scheme, relative to the current funding proportion of 78%.
- 8.2. In the following table I have set out these projected costs (expressed in current salary terms) as well as the total cost of the Scheme, including member contributions.



<b>Year Ended</b>	<b>State Government</b>	<b>Total Cost</b>
	<b>Cost</b>	<b>(incl member contributions)</b>
<b>30 June</b>	<b>\$ m</b>	<b>\$ m</b>
2009	56.9	69.3
2010	54.2	66.0
2011	58.3	70.8
2012	59.1	71.9
2013	59.8	72.7
2014	61.9	75.1
2015	65.2	79.1
2016	65.8	79.8
2017	70.7	85.8
2018	72.6	88.0
2019	74.0	89.8
2020	73.7	89.4
2025	71.2	86.4
2030	62.7	76.0
2035	51.8	62.8
2040	43.4	52.6
2045	34.6	42.0
2050	25.7	31.2



## Conclusions

- 9.1. In this Report, I have set out my comments about the funding status of the Police Superannuation Scheme.
- 9.2. I have concluded that the Old Scheme funding proportion of 22% should be decreased to 17.5%, after allowing for a negative return of minus 17.6% in 2008-09. The Government contribution which would be required to fund future service liabilities would be 20.5% (up from 19.5%) of contributor salaries.

A handwritten signature in black ink, appearing to read 'Stuart Mules', written in a cursive style.

**Stuart Mules**

Fellow of the Institute of Actuaries of Australia

Mercer (Australia) Pty Ltd  
Authorised Representative #287909 of  
Mercer Investment Nominees Limited ASF Licence #235906

**13 March 2009**

## Appendix A

## Benefits and Contributions

### Overview

- A.1.1. The Police Superannuation Scheme is closed to new members. New members of the Police force must contribute to the Southern State Superannuation Scheme.
- A.1.2. This description of the Scheme is intended to provide a general understanding of the benefit entitlements of contributors to the Scheme. It is not intended to be a complete summary of the legislation.
- A.1.3. There are two distinct types of benefit payable under the Scheme, those payable to:
- Old Scheme or pension members, being members who were accepted as contributors before 1 June 1990; and
  - New Scheme or lump sum members, being members who were accepted as contributors on or after 1 June 1990, and before the Scheme was closed to new contributors. As from 1 July 2008, all New Scheme members have been transferred to the Triple S Scheme. However, the description of benefits and contributions for New Scheme members have been retained in the appendix.
- A.1.4. Benefits previously payable under the Police Occupational Superannuation Scheme are now paid as an additional lump sum benefit under the Police Superannuation Scheme. The merger of the occupational scheme into the Police Superannuation Scheme was effective from 1 July 2001. This additional benefit is equivalent to:
- (a) 2.275% of final salary for each year of service for Old Scheme members, and
  - (b) 3.4% of final salary for each year of service for New Scheme members.

## Contributions

A.1.5. Benefits are based on contribution points. One contribution point is awarded for each month of contribution, with proportional points awarded for part-time employees.

A.1.6. Members contribute at a constant contribution rate, based on their age at the time of entry to the Scheme. Member contribution rates are:

Age at Commencement	New Scheme Contribution Rate	Old Scheme Contribution Rate
less than 20	5.0%	5.0%
20	5.2%	5.1%
21	5.4%	5.2%
22	5.6%	5.3%
23	5.8%	5.4%
24	6.0%	5.5%
25	6.0%	5.6%
26	6.0%	5.7%
27	6.0%	5.8%
28	6.0%	5.9%
29 and over	6.0%	6.0%

A.1.7. Members who hold the rank of senior sergeant or a lower rank and who have worked on rostered shifts during the contribution period will have their salary increased by 10% for the purpose of determining contributions and benefits.

## Old Scheme - Pension Benefits

### Retirement Benefits

A.2.1. The retirement age is 55 for most members. A contributor who has reached this age is entitled to a pension and a lump sum.

(i) The pension is calculated as:

$$P = FS \times A \times \frac{2}{3} \times K \times \left( I + \frac{X}{600} \right)$$

FS is the contributor's actual or attributed salary;

A is the lesser of 1.0 and the numerical value obtained by dividing the number of the contributor's accrued contribution points by 360 or, if the contributor has not reached age 60, the total of 300 and the number of months by which the contributor's age exceeds 55;

X is the number of months by which the contributor's age at retirement exceeds age 60;

K is a reduction factor which varies with the contributor's age at retirement.

(ii) The lump sum is calculated as:

$$LS = Pn \left( \frac{FS \times 0.91 \times M}{480} \right)$$

FS is the contributor's actual or attributed salary;

M is the number of months of the contribution period after 31 December 1987;

Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987.

### Early Retirement Benefits

A.2.2. A contributor who retires between age 50 and 55 is entitled to a lump sum benefit calculated as follows:

$$LS = 5.4545 \times A \times FS \times \left( 1 + \frac{0.1667 \times X}{100} \right) + Pn \left( \frac{FS \times 0.91 \times M}{480} \right)$$

- FS is the contributor's actual or attributed salary;
- A is the lesser of 1.0 and the numerical value obtained by dividing the number of the contributor's accrued contribution points by 360;
- X is the number of months by which the contributor's age at retirement exceeds age 50.
- M is the number of months of the contribution period after 31 December 1987;
- Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987.

### Retrenchment Benefits

- A.2.3. A contributor who has contributed to the Old Scheme for more than five years is entitled on retrenchment to receive a pension equal to the member's accrued pension and a lump sum.

### Disability Pensions

- A.2.4. A contributor who is temporarily or permanently incapacitated for work, who is not eligible for weekly workers compensation payments and who has used all available sick leave credits, is entitled to a temporary disability pension. The pension will not be paid for periods of less than one week, and may not be paid if the incapacity is expected to last less than six months. Usually the temporary disability pension will be paid for a maximum of twelve months.

The amount of the pension is calculated as follows:

$$P = A \times \frac{2}{3} \times FS$$

- FS is the contributor's actual or attributed salary;
- A is calculated in the same manner as for the retirement benefit at age 60 but with prospective service to age 60 being included.

While a temporary disability pension is being paid, a contributor is not required to make contributions to the Scheme.

## Invalidity Benefits

A.2.5. When a contributor's employment is terminated because of invalidity, an invalidity benefit is payable. Where the incapacity is assessed as being likely to be permanent and at a level of 60% or more, the contributor is entitled to:

- (i) a pension at the same level as the age 60 pension entitlement; and
- (ii) a lump sum benefit.

Where the contributor's condition does not satisfy this requirement, a lump sum benefit is paid, equal to:

$$LS = 5.4545 \times A \times FS \times \left( 1 + \frac{0.1667 \times X}{100} \right) + Pn \left( \frac{FS \times 0.91 \times M}{480} \right)$$

with a minimum of twice actual or attributed salary.

- FS is the contributor's actual or attributed salary;
- A is the lesser of 1.0 and the numerical value obtained by dividing the number of the contributor's accrued contribution points by 360;
- X is the number of months by which the contributor's age at invalidity retirement exceeds age 50.
- M is the number of months of the contribution period after 31 December 1987;
- Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987.

## Pensions Payable on Death of a Contributor

A.2.6. When a contributor dies, a surviving eligible spouse is entitled to a pension equal to two-thirds of the deceased contributor's notional pension, and if employed at death, a lump sum equivalent to the lump sum payable on retirement.

Children of a deceased contributor who are under the age of sixteen years, or who are undertaking full-time study and are under the age of twenty five years, are eligible for children's pensions. The rate of pension paid is dependent on the number of eligible children and on whether a spouse's pension is also payable.

Where a spouse's pension is payable, children's pensions vary from one ninth of the contributor's notional pension for one child to a maximum of one third of the contributor's notional pension divided among three or more eligible children.

Where no spouse's pension is payable, an orphan's benefit is payable varying from 45% of the deceased contributor's notional pension for one child to a maximum equal to 100% of the deceased contributor's notional pension divided among three or more eligible children. If employed at death, a lump sum equal to the greater of the balance of the contributor's contribution account and twice the contributor's final salary plus a lump sum equivalent to the lump sum payable on retirement. Otherwise a lump sum is paid equal to the balance of the contributor's contribution account.

Where no spouse or child pension is payable, a lump sum is payable equal to 7 times the actual or attributed salary reduced by the factor 'A' as used for early retirement benefit calculations plus a lump sum equivalent to the lump sum payable on retirement. If the contributor dies in the course of duty the minimum benefit is 3 times the actual or attributed salary.

### Resignation Benefits

A.2.7. On resignation, contributors may elect either to receive a cash lump sum equal to a return of their contributions with interest, or to preserve their benefit until retirement at or after age 55. Preserved benefits include full vesting of the employer share of benefits.

A.2.8. If contributors elect to receive a cash lump sum, they are also entitled on retirement to a preserved lump sum consisting of a Superannuation Guarantee Minimum Requisite Benefit, and a component calculated as:

$$Pn \left( AFS \times \frac{0.91}{480} \times M \right)$$

AFS is the contributor's actual or attributed salary on resignation adjusted for changes in the CPI since the date of resignation;

M is the number of months of the contribution period from 1 January 1988 to 30 June 1992;

Pn is the proportion of full-time employment during that part of the contribution period from 1 January 1988 to 30 June 1992.

This preserved lump sum may also transferred to an approved fund, or paid on resignation if less than \$200 in value.



A.2.9. Where contributors elect to preserve their entitlements, the form of the benefit is determined by the contributor's length of contributory membership before resignation. For contributors with ten years or more membership, the benefit is in the form of a pension and lump sum, while for contributors with less than ten years membership, the benefit is in the form of a lump sum.

A.2.10. The lump sum preserved benefit for less than ten years membership consists of:

- (i) an amount equivalent to the amount standing to the credit of the contributor's contribution account; and
- (ii) an employer component equal to  $2\frac{1}{3}$  times the balance of the contribution account; and
- (iii) a lump sum calculated as:

$$LS = Pn \left( \frac{AFS \times 0.91 \times M}{480} \right)$$

AFS is the contributor's actual or attributed salary on resignation adjusted for changes in the CPI since the date of resignation;

M is the number of months of the contribution period after 31 December 1987;

Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987.

A.2.11. The preserved benefits for more than ten years membership consist of:

- (i) a pension equal to:

$$P = 0.5181 \times A \times AFS$$

AFS is the contributor's actual or attributed salary at the date of resignation, adjusted for changes in CPI to the date of commencement of pension payment;

A is the numerical value obtained by dividing the number of the contributor's accrued contribution points by the greater of 300 and the number of months between the age at entry and 55.

and;

- (ii) a lump sum equivalent to the benefit in part (iii) of A.2.10 above

## Commutation

A.2.12. On commencement of an invalidity pension, up to 10% of the pension may be commuted for a lump sum, with further commutation available at age 55. Full commutation is available for retirement pensions. On attainment of age 55 in the case of invalidity or retrenchment pensioners, up to 50% of a pension entitlement may be commuted for a lump sum. The commutation basis is independent of sex or marital status, with the factor varying by age. The table below shows the amount of lump sum for each \$1.00 of pension commuted.

Age	Factor
65	\$9.50
64	\$9.70
63	\$9.90
62	\$10.10
61	\$10.30
60	\$10.50
59	\$10.70
58	\$10.90
57	\$11.10
56	\$11.30
55 or less	\$11.50

Spouses of deceased contributors have similar initial options to commute their pension entitlements. Commutation rates are \$11.50 at ages below 50 reducing to \$8.50 at age 65 and continuing to reduce progressively at older ages.

## Indexation of Pensions

A.2.13. Indexation of pension payments occur at 1 October and 1 April each year, using the rate of change in the Consumer Price Index for Adelaide for the 6 month period to the last June and December quarter respectively. All pensions which commenced to be paid under the Police Pensions Act, 1971 are indexed at 1 1/3 times the change in the CPI index. Prior to April 2002, pensions were only adjusted in October.

## New Scheme - Lump Sum Benefits

### Retirement Benefits

A.3.1. A retirement benefit may be paid after age 55, calculated as:

$$LS = 6 \times FS \times A \times \left(1 + 0.2778 \times \frac{X}{100}\right) + Pn \left(\frac{FS \times 1.36 \times M}{480}\right)$$

- FS is the contributor's actual or attributed salary;
- A is the lesser of 1.0 and the numerical value obtained by dividing the number of the contributor's accrued contribution points by 420 or where the contributor has not reached the age of 60 by the total of 360 and the number of months by which the contributor's age exceeds 55;
- X is the number of months by which the contributor's age at exceeds 55;
- Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987;
- M is the number of months of the contribution period after 31 December 1987.

A.3.2. A limited number of contributors may retire after reaching age 50 (and before age 55), with the entitlement calculated as:

$$LS = 5.4545 \times FS \times A \times \left(1 + 0.1667 \times \frac{X}{100}\right) + Pn \left(\frac{FS \times 1.36 \times M}{480}\right)$$

- A is the lesser of 1.0 and the numerical value obtained by dividing the number of the contributor's accrued contribution points by 360;
- X is the number of months by which the contributor's age at retirement exceeds 50;
- Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987;
- M is the number of months of the contribution period after 31 December 1987.

**Resignation Benefits — Without Preservation**

A.3.3. On resignation, if contributors elect not to preserve their entitlements but to receive an immediate cash payment of the balance of their contribution accounts, they are also entitled to a Superannuation Guarantee Minimum Requisite Benefit, and a component calculated as;

$$Pn \left( AFS \times \frac{1.36}{480} \times M \right)$$

AFS is the contributor's actual or attributed salary on resignation adjusted for changes in the CPI since the date of resignation;

M is the number of months of the contribution period from 1 January 1988 to 30 June 1992,.

Pn is the proportion of full-time employment during that part of the contribution period from 1 January 1988 to 30 June 1992.

This preserved lump sum may also transferred to an approved fund, or paid on resignation if less than \$200 in value.

**Resignation Benefits — With Preservation**

A.3.4. On resignation, if contributors elect to preserve their entitlements, their benefits remain in the Fund and are only paid on death, becoming incapacitated and on attaining the retirement age. The benefits are calculated as if the member had remained in employment and retired at age 55 but had not paid any contributions from the date of resignation. The contributor's salary on resignation is adjusted for changes in CPI.

A.3.5. The benefit which is paid on the death of a preserved member before age 55 is calculated as:

$$LS = 4 \times A \times AFS + Pn \left( AFS \times \frac{1.36}{480} \times M \right)$$

AFS is the contributor's actual or attributed salary at the date of resignation, adjusted for changes in CPI to the date of commencement of pension payment;

A is the numerical value obtained by dividing the number of the contributor's accrued contribution points by the greater of 360 and the number of months between the age at entry and 55;

$P_n$  is the proportion of full-time employment during that part of the contribution period after 31 December 1987;

$M$  is the number of months of the contribution period after 31 December 1987.

### Resignation Benefits — Transfers

A.3.6. On transfer to an approved superannuation scheme the amount transferred is the balance of the contributor's contribution account plus:

(i) an employer component equal to the lesser of twice the employee component and 3.86 times the contributor's actual or attributed salary on resignation adjusted for changes in the CPI since the date of resignation and for the proportion of full-time employment over the contribution period; and

(ii) a lump sum component calculated as.

$$LS = P_n \left( \frac{AFS \times 1.36 \times M}{480} \right)$$

$AFS$  is the contributor's actual or attributed salary on resignation adjusted for changes in the CPI since the date of resignation;

$M$  is the number of months of the contribution period after 31 December 1987;

$P_n$  is the proportion of full-time employment during that part of the contribution period after 31 December 1987.

### Retrenchment Benefits

A.3.7. On retrenchment a member can elect either to receive an immediate lump sum equal to the amount of the early retirement benefit, or to take a preserved resignation benefit.

### Invalidity Benefits

A.3.8. A member aged less than 55 who is incapacitated is entitled, in the first instance, to a temporary disability pension of  $\frac{2}{3}$  of salary for a period of up to 12 months. This may be extended to 18 months in special circumstances.

A.3.9. Where the Police Superannuation Board assesses the incapacity as being likely to be permanent and at a level of 60% or more, a lump sum benefit is paid, equal to:

$$LS = 6 \times A \times FS + Pn \left( \frac{FS \times 1.36 \times M}{480} \right)$$

- FS is the contributor's actual or attributed salary;
- A is the lesser of 1.0 and the numerical value obtained by dividing the number of the contributor's extrapolated contribution points (adjusted to allow for periods of workers compensation payments) by 360,
- M is the number of months of the contribution period after 31 December 1987,
- Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987.

A.3.10. Where the contributor's condition does not satisfy this requirement, two benefits are payable:

- (i) a lump sum benefit equal to the greater of twice the actual or attributed salary, and

$$5.4545 \times A \times FS \times \left( 1 + \frac{0.1667 \times X}{100} \right)$$

- FS is the contributor's actual or attributed salary;
- A is the lesser of 1.0 and the numerical value obtained by dividing the number of the contributor's accrued contribution points by 360;
- X is the number of months by which the contributor's age at invalidity retirement exceeds age 50.

and;

- (ii) a lump sum benefit equal to:

$$LS = Pn \left( \frac{FS \times 1.36 \times M}{480} \right)$$

- FS is the contributor's actual or attributed salary;
- M is the number of months of the contribution period after 31 December 1987;
- Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987.

### Death Benefits - for Surviving Spouses

A.3.11. The lump sum paid to a surviving spouse on death is the same as the invalidity benefit except that:

- (a) the multiple of 6 is replaced by a multiple of 5; and
- (b) in the calculation of 'A', contribution points are divided by 420 and not 360.

### Death Benefits - for Eligible Children

A.3.12. Pensions payable to each eligible child are calculated as follows.

- (1) Where a spouse's benefit is payable and there are less than 4 eligible children:

$$P = A \times .05 \times FS$$

- (2) Where a spouse's benefit is payable and there are 4 or more eligible children:

$$P = \frac{A \times .15 \times FS}{\text{number of children}}$$

- (3) Where there is no spouse's benefit payable and there are less than 4 eligible children:

$$P = A \times .15 \times FS$$

- (4) Where there is no spouse's benefit payable and there are 4 or more eligible children:

$$P = \frac{A \times .45 \times FS}{\text{number of children}}$$

A is the lesser of 1.0 and the numerical value obtained by dividing the number of the contributor's extrapolated contribution points to age 60 by 420.

In (3) and (4) above a lump sum is also paid to the estate of the contributor equal to the balance of the contributor's contribution account plus:

- (i) the greater of the balance of the deceased member's contribution account and twice the deceased contributor's actual or attributed salary; and

(ii) a lump sum component calculated as:

$$LS = Pn \left( \frac{FS \times 1.36 \times M}{480} \right)$$

FS is the contributor's actual or attributed salary;

M is the number of months of the contribution period after 31 December 1987;

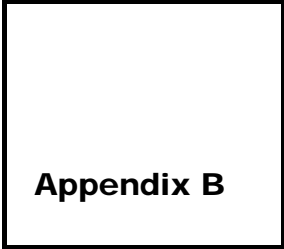
Pn is the proportion of full-time employment during that part of the contribution period after 31 December 1987.

### **Death Benefits - with neither spouses nor eligible children**

A.3.13. Where no spouse or child benefits are payable, a lump sum is payable equal to the aggregate of:

- (i) 7 times the actual or attributed salary reduced by the factor 'A' as used for early retirement benefit calculations. If the contributor dies in the course of duty the minimum benefit is 3 times the actual or attributed salary; and
- (ii) a lump sum for the contribution period after 31 December 1987, as in part 0 of Section A.3.10.





Appendix B

## Membership Information

### **B.1 BACKGROUND**

I have been able to use the membership data that has been extracted from the administration system used by the Police Superannuation Board for the ongoing administration of the Schemes.

I have been able to satisfy myself that the data is sufficiently accurate for the purpose of my calculations, and consider that any errors in the recording of member information would not have a material impact on my conclusions.

A number of checks have been performed on the member data, to ensure consistency between years and to ensure that contributor and pensioner information is consistent.

I have set out information about the membership and movement in membership over the three year period. The data has been obtained from a number of sources and it is possible that the tables below may not be totally consistent, with minor variations in numbers. These variations do not have an effect on the calculations that I have performed and are not material in this process.

### **B.2 CONTRIBUTOR RECORD DETAILS**

The following records were obtained for contributing members:

- Identification
- Date of birth

- Date started service
- Date of joining the Scheme
- Salary
- Sex
- Exit code
- Contribution rate
- Accrued points
- Contribution account balance
- Amount of any Lump Sum payment
- Disability date

### **B.3 PENSIONER RECORD DETAILS**

The following records were obtained for current pensioners:

- Identification
- Pension type
- Sex
- Dates of birth for member and spouse
- Date pension started and date spouse pension started
- Exit code and date of exit
- Details of children
- Commutation details
- Basic pension
- Supplementation pension

#### B.4 SUMMARY OF CONTRIBUTOR MOVEMENTS FOR THE THREE YEARS TO 30 JUNE 2008

Old Scheme	Males	Females	Total
2005 Contributors	1,816	253	2,069
Age Retirements	153	4	157
Invalidity / disability	20	2	22
Deaths	4	1	5
Resignations (with refund)	13	8	21
Resignations (preserved)	31	1	32
<b>Total departures</b>	<b>221</b>	<b>16</b>	<b>237</b>
<b>2008 Contributors</b>	<b>1,595</b>	<b>237</b>	<b>1,832</b>

New Scheme	Males	Females	Total
2005 Contributors	291	105	396
Age Retirements	5	—	5
Invalidity / disability	3	1	4
Deaths	—	—	—
Resignations (with refund)	15	3	18
Resignations (preserved)	4	2	6
Resignations (transfer)	1	—	1
<b>Total departures</b>	<b>28</b>	<b>6</b>	<b>34</b>
<b>2008 Contributors</b>	<b>263</b>	<b>99</b>	<b>362</b>

**B.5 SUMMARY OF CONTRIBUTOR DETAILS AS AT 30 JUNE 2008**

<b>Old Scheme</b>	<b>Males</b>	<b>Females</b>	<b>Total</b>
<b><i>Contributors</i></b>			
Number	1,595	237	1,832
	\$'000	\$'000	\$'000
Annual salaries	128,520	18,226	146,746
Contributions	6,350	851	7,201
Account balances	212,132	22,057	234,189
<b><i>Preserved members</i></b>			
Number	152	39	191
	\$'000	\$'000	\$'000
Account balances	12,487	2,269	14,756
<b><i>SG preserved contributors</i></b>			
Number	159	65	224

<b>New Scheme</b>	<b>Males</b>	<b>Females</b>	<b>Total</b>
<b><i>Contributors</i></b>			
Number	263	99	362
	\$'000	\$'000	\$'000
Annual salaries	18,890	6,921	25,811
Contributions	—	—	—
Account balances	17,021	5,290	22,311
<b><i>Preserved members</i></b>			
Number	16	4	20
	\$'000	\$'000	\$'000
Account balances	560	170	730
<b><i>SG preserved contributors</i></b>			
Number	75	40	115

**B.6 SUMMARY OF OLD SCHEME CONTRIBUTORS BY AGE GROUPS****Males**

Ages	2005		2008	
	No.	Average Salary \$	No.	Average Salary \$
25 - 29	—	—	—	—
30 - 34	57	60,727	—	—
35 - 39	254	61,979	131	75,235
40 - 44	411	64,891	273	79,097
45 - 49	550	65,430	509	80,000
50 - 54	361	69,040	404	80,712
55 - 59	183	74,353	242	84,685
60 - 64	—	—	35	90,431
65 - 70	—	—	—	—
<b>Totals</b>	<b>1,816</b>	<b>66,295</b>	<b>1,595</b>	<b>80,577</b>

**Females**

Ages	2005		2008	
	No.	Average Salary \$	No.	Average Salary \$
25 - 29	—	—	—	—
30 - 34	23	58,948	—	—
35 - 39	101	61,076	57	72,924
40 - 44	88	63,595	101	76,419
45 - 49	26	62,815	58	78,229
50 - 54	12	72,250	14	85,893
55 - 59	4	67,898	7	87,328
60 - 64	—	—	—	—
65 - 70	—	—	—	—
<b>Totals</b>	<b>254</b>	<b>62,570</b>	<b>237</b>	<b>76,903</b>

**B.7 SUMMARY OF PENSIONER DETAILS AS AT 30 JUNE 2008**

Type of Pension	Current Act		Repealed Act		Total	
	Number	Annual Pension \$'000	Number	Annual Pension \$'000	Number	Annual Pension \$'000
Age	491	16,462	174	5,318	665	21,780
Invalidity and Disability	62	1,999	145	4,621	207	6,620
Spouses of —						
Contributors	40	850	41	957	81	1,807
Pensioners	40	737	214	4,880	254	5,617
Children	30	181	2	7	32	188
<b>Total</b>	<b>663</b>	<b>20,229</b>	<b>576</b>	<b>15,783</b>	<b>1,239</b>	<b>36,012</b>

**B.8 DETAILS OF PENSIONER MOVEMENT FOR THE THREE YEARS TO 30 JUNE 2008**

Type	2005 In Force	New Pensioners	Exits	2008 In Force
Age	593	142	70	665
Invalidity	215	15	23	207
Spouse	326	53	44	335
Child	36	10	14	32
<b>Total</b>	<b>1,170</b>	<b>220</b>	<b>151</b>	<b>1,239</b>

**B.9 DETAILS OF AVERAGE PENSION AMOUNTS AS AT 30 JUNE 2008****Males**

Ages	2005		2008	
	No.	Average Pension \$	No.	Average Pension \$
35 - 39	2	25,554	1	33,702
40 - 44	4	25,600	4	32,562
45 - 49	8	26,168	7	38,835
50 - 54	28	31,197	20	31,274
55 - 59	92	29,909	96	33,679
60 - 64	147	30,825	205	36,341
65 - 69	139	28,123	116	32,888
70 - 74	161	24,389	148	29,225
75 - 79	102	26,588	129	27,372
80 - 84	59	31,595	72	31,841
85 - 89	35	39,097	40	38,070
90 - 94	4	32,211	7	47,227
95 - 99	1	24,149	—	—
100 - 104	—	—	—	—
<b>Totals</b>	<b>782</b>	<b>28,711</b>	<b>845</b>	<b>32,617</b>

**Females**

Ages	2005		2008	
	No.	Average Pension \$	No.	Average Pension \$
30 - 34	1	10,496	—	
35 - 39	3	17,637	2	18,884
40 - 44	7	18,996	6	19,844
45 - 49	10	18,852	10	24,790
50 - 54	22	20,729	13	20,258
55 - 59	36	22,116	40	23,332
60 - 64	20	22,605	32	24,774
65 - 69	35	20,444	32	21,591
70 - 74	48	18,342	52	21,114
75 - 79	51	20,453	52	20,282
80 - 84	63	23,253	59	24,374
85 - 89	31	21,794	48	25,998
90 - 94	13	16,457	12	23,234
95 - 99	7	13,591	2	13,789
100 - 104	2	14,445	2	15,565
<b>Totals</b>	<b>349</b>	<b>20,650</b>	<b>362</b>	<b>22,821</b>



Appendix C
------------

## Contributor Experience

C.1 As at 1 July 2008, all New Scheme members were transferred to the Triple S Scheme.

The numbers transferred were: .

New Scheme members transferred to Triple S	Number
Active	362
Preserved	135
Total	497

The remainder of this section will only relate to Old Scheme members.

C.2 The Old Scheme was closed to new entrants on 31 May 1990.

C.3 The total years of exposure during the period were as follows:

	Males	Females
Years of exposure	5,119	739

### Deaths

C.4 The mortality experience was as follows, with expected deaths determined according to the assumptions used in the previous investigation.

	Males	Females
Actual deaths	4	1
Expected deaths	9	—

The mortality rates have been retained at various percentages of the Australian life tables for each age. The Australian life tables used are Australian Life Tables 2000-02 adjusted for mortality improvement at the rates used in this review.

### Invalidity Retirements

C.5 The invalidity experience was as shown below.

	Males	Females
Actual invalids	20	2
Expected invalids	25	2

The 22 invalidity retirements compare with 30 in the period 2002-05. The existing assumptions have been retained.

### Resignations

C.6 Resignations in the period 2005-08 were slightly less than expected. A comparison of actual and expected resignations and the rates of resignation, for the three years ending 30 June 2008, are shown below.

Age	Males			Females		
	Actual	Expected	Rate	Actual	Expected	Rate
30 - 34	—	1	0.000	1	—	0.090
35 - 39	16	16	0.029	5	7	0.021
40 - 44	11	17	0.011	3	5	0.010
45 - 49	9	12	0.006	—	1	0.000
50 - 54	7	1	0.006	—	—	0.000
<b>Total</b>	<b>43</b>	<b>46</b>		<b>9</b>	<b>14</b>	

The existing assumptions which were increased at the last review have been retained.

## Preservation

C.7 A summary of the numbers preserving and as a percentage of those eligible to preserve is as follows:

Age	Males		Females		Total	
	Actual	Percentage	Actual	Percentage	Actual	Percentage
30 - 34	—	—	1	100%	1	100%
35 - 39	8	50%	—	—	8	38%
40 - 44	8	73%	—	—	8	57%
45 - 49	7	78%	—	—	7	78%
50 - 54	7	100%	—	—	7	100%
<b>Total</b>	<b>30</b>	<b>70%</b>	<b>1</b>	<b>11%</b>	<b>31</b>	<b>58%</b>

This experience is higher than that observed over the 2002-05 period. The current assumptions would have produced an average 61% preserving in 2005-08.

Although the experience is close to expected, the assumed proportions preserved have been increased so that the minimum proportion is 50% up to age 35 with corresponding increases up to 100% at age 48.

## Age Retirements — Current Contributors

C.8 Actual and expected age retirements for the three years to June 2008 were as follows:

	Males	Females
Actual retirements	153	4
Expected retirements	207	6

There were 157 age retirements compared with an expected number of 213.

The number at each age in the last three years and for the 2002-05 period are as follows:

Age	Actual Retirements		Rate	
	2002-05	2005-08	2002-05	2005-08
50	18	21	0.071	0.066
51	5	4	0.020	0.016
52	5	4	0.024	0.018
53	4	1	0.018	0.005
54	1	1	0.005	0.004
55	20	22	0.116	0.099
56	17	9	0.111	0.050
57	13	16	0.102	0.112
58	22	21	0.218	0.182
59	18	21	0.292	0.233
60	20	29	0.582	0.449
61	3	5	0.308	0.194
62	—	2	0.000	0.152
63	1	—	0.410	0.000
64	—	—	0.000	0.000
65	1	1	1.000	0.356
66	—	—	0.000	0.000
67	—	—	0.000	0.000
<b>Total</b>	<b>148</b>	<b>157</b>		

C.9 New lower rates of age retirement have been adopted which would have given an expected number of age retirements in 2005-08 of 175 instead of 213. The rates have been reduced at most ages over age 52.

**Age Retirements — Preserved Contributors**

C.10 Actual and expected age retirements for the three years to June 2008 were as follows:

	Males	Females
Actual retirements	17	—
Expected retirements	22	—

**Promotional Salary Increases**

C.11 Promotional salary increases were higher than expected, as was the level of general salary inflation. Promotional salary increases were 0.5% more than expected while total salary increases were 1.7% pa more than expected.

	Males % pa	Females % pa	Total % pa
<b><i>Promotional Salary Increases</i></b>			
Actual increase	1.6%	2.0%	1.6%
Expected increase	1.1%	1.5%	1.1%
<b><i>Total Salary Increases</i></b>			
Actual increase	6.9%	7.2%	6.9%
Expected increase	5.1%	5.6%	5.2%

The average annual increase in salaries over the three year period was 6.9%. This does not include the 3.5% increase on 5 July 2008.

C.12 The higher salary increases than expected were largely due to a salary restructure on 3 January 2008 which resulted in additional ranks being adopted. Therefore, the existing assumed rates of salary promotion have been retained.

## Commutation

C.13 Contributors can commute up to 100% of their pensions on age retirement or up to 10% on invalidity retirement. Invalid pensioners may also commute up to 50% of their pension on attaining age 55. New spouse pensioners may also commute up to 50%.

For the three years ended 30 June 2008 the commutation experience was as follows:

	Percentage of pensioners who commuted	Percentage of pension commuted by those who commuted	Average Percentage of pension commuted
	%	%	%
Age retirements:			
Males	65%	41%	29%
Females	50%	50%	30%
Invalidity retirements:			
At start of pension	44%	24%	10%
At age 55	30%	11%	4%
Spouses	11%	31%	3%

Details of the average percentage of all new pensions commuted over each of the three years are:

	2005-06 %	2006-07 %	2007-08 %
Age Retirements	24%	29%	33%
Invalidity retirements:			
at start of pension	16%	3%	5%
at age 55	3%	3%	8%
Spouses	3%	5%	2%

The past trend for members to commute less of their pensions has not continued. As a result, I have increased to 25% (from 20%) the commutation assumption in relation to age retirement pensions and invalidity pensions at age 55. The proportions for spouses have continued to decline and therefore I have reduced the commutation assumption from 10% to 5%.

Appendix D
------------

## Pensioner Experience

D.1 The mortality experience of pensioners during the three years to 30 June 2008 has been examined and compared with that assumed in the previous actuarial investigation.

Where appropriate the previous assumptions have been modified in light of this experience. Mortality rates have been expressed as a proportion of the underlying population mortality. For the purposes of this review I have taken the population mortality to be the Australian Life Tables 2000-02 updated by the rates of mortality improvement used in this review (referred to as adjusted ALT 2000-02).

Comments on individual aspects of the experience are detailed in the following sections of this Appendix and summaries of the rates adopted for the current investigation are set out in Appendix E.

### Age Retirement Pensioners

D.2 The mortality experience was as follows, with expected deaths determined according to the assumptions used in the previous investigation.

	Males	Females
Actual deaths	48	1
Expected deaths	43	1

The proportions of the population mortality are the same as in the previous review and rise from 50% at ages below 65 to 100% from age 95.

### Invalidity Pensioners

D.3 It is to be expected that invalidity pensioners will suffer higher rates of mortality than age retirement pensioners will, particularly in the first few years after retirement. The mortality experience of invalidity pensioners is summarised below:

	Males			Females		
	Year 1	Year 2	Later Years	Year 1	Year 2	Later Years
Actual deaths	4	0	16	0	0	0
Expected deaths	1	*	17	*	*	*

\* *less than one expected death.*

For durations over two years, the mortality rates have been set to 120% of population mortality with minimum value of 0.01. This minimum value has been decreased from 0.012 to 0.01.

For early durations the mortality rate has been set at 0.075 in year one and 0.04 in year two for both males and females.

### Spouse Pensioners

D.4 The mortality experience of spouse pensioners was as follows:

	Males	Females
Actual deaths	—	44
Expected deaths	*	30

\* *less than one expected death.*

Spouse rates of mortality have been set to be the same as age pensioner rates. This approach is consistent with that adopted for the State Superannuation Scheme.

### Mortality Improvement

D.5 Rates of mortality improvement are the same as for the 2005 review which were set equal to the average of the 2002 assumptions and rates derived from improvement factors in Appendix E of the Australian Life Tables 2000-02. The rates derived from the



improvement factors in Appendix E of the Australian Life Tables 2000-02 represent the average of the 25 and 105 year mortality improvement experience..

### **CPI Increases**

D.6 Pensions are increased each 1 October and 1 April, according to the change in the Adelaide Consumer Price Index for the 6 months to the previous 30 June and 31 December respectively. Where the increase in CPI is negative, no adjustment to pensions is made and the pension increase for the following 6 months is based on the increase in CPI for the period since the last adjustment.

During the period, pensions were increased as follows:

<b>Month of Increase</b>	<b>Current Act</b>	<b>Repealed Act</b>
October 2005	1.20%	1.60%
April 2006	1.52%	2.03%
October 2006	2.27%	3.03%
April 2007	0.76%	1.01%
October 2007	0.94%	1.25%
April 2008	1.75%	2.33%

### **Proportion Married**

D.7 The proportions of members and pensioners who are married have been set by increasing the proportions for the 2005 review by 2.5% to allow for the removal of the 5 year qualifying period for a spouse pension. See section 2.5 of the report.

D.8 The age difference between male pensioners and their spouses was previously assumed to increase from 3 to 4 years at age 66. An analysis of all female spouse pensioners has shown an average age difference of 3.2 years with no clear indication of an increase at the ages where most spouse pensions commence. The assumed age difference for ages over 65 has therefore been reduced to 3 years.

Appendix E
------------

## Demographic Assumptions

### E.1 CONTRIBUTOR MORTALITY RATES

Age	Males	Females
20	0.00050	0.00019
25	0.00063	0.00020
30	0.00067	0.00024
35	0.00070	0.00033
40	0.00084	0.00047
45	0.00112	0.00068
50	0.00157	0.00105
55	0.00247	0.00164
60	0.00411	0.00256

### E.2 CONTRIBUTOR INVALIDITY RETIREMENT RATES

Age	Males & Females
20	0.00058
25	0.00084
30	0.00121
35	0.00174
40	0.00251
45	0.00361
50	0.00519
55	0.00746
60	0.01074

**E.3 CONTRIBUTOR RESIGNATION RATES**

<b>Age</b>	<b>Males &amp; Females</b>
20	0.03078
25	0.03402
30	0.03607
35	0.03343
40	0.02263
45	0.01129

**E.4 PRESERVATION PROPORTIONS**

<b>Age</b>	<b>Proportion</b>
20	0.043
25	0.157
30	0.279
35	0.500
40	0.692
45	0.885
50	1.000
55	1.000
60	1.000

**E.5 RATES OF RETIREMENT**

<b>Age</b>	<b>Current Contributors (2008)</b>	<b>Current Contributors (2005)</b>	<b>Preserved Contributors</b>
50	0.070	0.070	0.000
51	0.020	0.020	0.000
52	0.020	0.020	0.000
53	0.010	0.020	0.000
54	0.010	0.020	0.000
55	0.090	0.110	0.850
56	0.090	0.110	0.930
57	0.090	0.110	0.970
58	0.180	0.220	1.000
59	0.250	0.300	1.000
60	0.500	0.500	1.000
61	0.250	0.500	1.000
62	0.250	0.500	1.000

**E.6 RATES OF PROMOTIONAL SALARY INCREASES**

<b>Age</b>	<b>Males &amp; Females</b>
20	1.000
25	1.219
30	1.437
35	1.641
40	1.822
45	1.973
50	2.090
55	2.172
60	2.223

**E.7 FAMILY STATISTICS — MALES**

<b>Age</b>	<b>Percentage Married %</b>	<b>Age of Husband less Age of Wife</b>	<b>No. of Dependent Children</b>	<b>Average Age of Dependent Children</b>
20	2	—	—	—
25	26	2	1	1
30	51	3	2	4
35	72	3	2	7
40	85	3	2	10
45	95	3	2	13
50	97	3	1	15
55	97	3	—	—
60	96	3	—	—
65	95	3	—	—
70	92	3	—	—
75	88	3	—	—
80	80	3	—	—
85	64	3	—	—
90	42	3	—	—

**E.8 FAMILY STATISTICS — FEMALE**

<b>Age</b>	<b>Percentage Married</b>	<b>Age of Husband less Age of Wife</b>	<b>No. of Dependent Children</b>	<b>Average Age of Dependent Children</b>
20	9	4	—	—
25	39	4	1	2
30	66	4	2	7
35	76	4	2	10
40	84	4	2	12
45	86	3	1	14
50	87	3	1	15
55	86	3	—	—
60	85	3	—	—
65	83	3	—	—
70	79	2	—	—
75	72	2	—	—
80	61	2	—	—
85	43	2	—	—
90	23	2	—	—

**E.9 PENSIONER MORTALITY RATES**

Age	Age Retirements		Invalidity Pensioners				Spouse Pensioners	
	Male	Female	Year 1 M & F	Year 2 M & F	Subsequent Years Male Female		Male	Female
20			.07500	.04000	.01000	.01000	.00042	.00016
25			.07500	.04000	.01000	.01000	.00053	.00017
30			.07500	.04000	.01000	.01000	.00056	.00020
35			.07500	.04000	.01000	.01000	.00059	.00028
40			.07500	.04000	.01000	.01000	.00070	.00039
45	.00093	.00057	.07500	.04000	.01000	.01000	.00093	.00057
50	.00131	.00088	.07500	.04000	.01000	.01000	.00131	.00088
55	.00206	.00137	.07500	.04000	.01000	.01000	.00206	.00137
60	.00343	.00214	.07500	.04000	.01000	.01000	.00343	.00214
65	.00571	.00329	.07500	.04000	.01369	.01000	.00571	.00329
70	.01166	.00665			.02302	.01313	.01166	.00665
75	.02356	.01361			.03971	.02294	.02356	.01361
80	.04524	.02800			.06685	.04138	.04524	.02800
85	.08625	.05968			.11399	.07888	.08625	.05968
90	.14668	.11185			.17602	.13422	.14668	.11185
95	.18848	.16648			.22618	.19978	.18848	.16648
100	.23065	.21730			.27678	.26076	.23065	.21730

**E.10 RATES OF MORTALITY IMPROVEMENT**

The table shows the annual rates of decrease of mortality rates at each age.

Age	Males %	Females %
60	3.103	2.565
70	2.862	2.584
80	1.999	2.276
90	1.189	1.691
100	0.853	1.347

**E.11 COMMUTATION**

<b>Pension Type</b>	<b>Percentage Committed</b>
Age	25%
Invalid	25%
Spouse	5%



# MERCER



MARSH MERCER KROLL  
GUY CARPENTER OLIVER WYMAN

Mercer is a registered business name of  
Mercer (Australia) Pty Ltd  
ABN 32 005 315 917, which is a corporate  
authorised representative #260851 of  
Mercer Investment Nominees Limited  
ABN 79 004 717 533 AFS Licence #235906  
108 North Terrace Adelaide SA 5000  
GPO Box 9946 Adelaide SA 5001  
08 8110 3400