Mercer

Actuarial Investigation as at 30 June 2023

Government Employees Superannuation Fund

Gold State Super

Pension Scheme (including Provident Account)

West State Super

22 August 2023

welcome to brighter

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Key Results and Recommendations

This report on the actuarial investigation as at 30 June 2023 of the Government Employees Superannuation Fund (the Fund), has been prepared for the Government Employees Superannuation Board (GESB).

Whilst this actuarial investigation includes information for the Fund as a whole, the primary focus is on the financial position of the defined benefit schemes: Gold State Super (GSS) and the Pension Scheme (PS), and the adequacy of the reserve held for the minimum benefit guarantee and the self-insured death and disability benefits of West State Super (WSS).

This report considers both the funded and unfunded benefit liabilities. However, it should be noted that the Fund's assets are only held in respect of funded benefits.

Summary of Financial Results

The net financial position of the defined benefit schemes as at 30 June 2023 is shown in the table below. The financial position for the previous four years is also shown for comparison:

Financial Position as at 30 June	2019 ($million)	2020 ($million)	2021 ($million)	2022 ($million)	2023 ($million)
Total net assets	**29,504.1**	**29,340.0**	**34,527.2**	**33,161.6**	**36,039.5**
less					
West State Super	16,392.9	16,190.5	18,885.9	17,861.7	19,046.7
GESB Super	4,605.8	4,878.9	6,212.4	6,287.9	7,411.1
Retirement Income	5,327.1	5,295.2	6,016.1	5,908.1	6,243.7
Term Allocated Pension	18.3	16.0	16.8	14.6	14.0
Total Reserves	236.7	244.0	250.6	230.6	238.3
Net assets for defined benefit schemes	**2,923.3**	**2,715.4**	**3,145.4**	**2,858.7**	**3,085.7**
Accrued Funded Liabilities					
Gold State Super	2,126.9	2,172.5	2,150.5	2,102.3	2,131.7
Pension Scheme	73.5	80.5	76.1	69.6	64.3
Net financial position	**722.9**	**462.4**	**918.8**	**686.8**	**889.7**
Net financial position as % of funded defined benefit liabilities	**32.9%**	**20.5%**	**41.3%**	**31.6%**	**40.5%**

The overall financial position of the Fund has improved since the previous actuarial investigation as at 30 June 2022 primarily due to the investment return for the defined benefit schemes of 10.2% for the year being higher than the previously assumed return of 5.5% per annum, and the increase in the assumed rate of future investment returns.

The combined funding percentage in respect of the accrued funded liabilities for GSS and the PS has increased from 131.6% at 30 June 2022 to 140.5% of funded liabilities at 30 June 2023.

The table also shows that there can be considerable variation in the net financial position from year to year.

The funding percentage expressed in terms of the accrued liabilities (both funded and unfunded) for GSS is 60.6% (55.8% in 2022), and for the PS is 6.6% (6.3% in 2022).

Our Recommendations

Gold State Super (GSS)

GSS continues to be in a very strong financial position, with Scheme assets exceeding the funded share of accrued liabilities by 40.5%. Under the current investment strategy and contribution rate settings this position is expected to further strengthen in the future, as the number of members continues to reduce and the existing surplus is spread across a smaller number of members.

The term of the liabilities continues to reduce, with approximately 60% of the active membership and 44% of the deferred membership expected to retire in the next six years. The weighted average term of the defined benefit liabilities (funded and unfunded) is six years (a slight decrease from last year, but no change to rounded figures). Over the remaining life of the Scheme, it is expected that the term of the liabilities will continue to shorten and the proportion of liabilities linked to Perth CPI (rather than salary inflation) will continue to increase.

We understand that GESB is currently discussing various portability options with Treasury. These options would permit some or all deferred members to roll over their benefit to another superannuation fund and enable GESB to be included in the Australian Taxation Office (ATO) unclaimed money scheme to reunite unclaimed monies with their beneficiaries. The proposed start date for these options is 1 July 2024.

Although the introduction of portability is not expected to materially affect the options available to the Board for the future funding of the Scheme, it could be expected to increase the recoupments required to be paid by the Government in the short term. Decreasing the recoupment rate would reduce the amount of the additional recoupments required to be paid as a result of portability.

The very strong financial position enables the Board to consider a number of options for the future funding of the Scheme, including (but not limited to):

(i) Reducing the recoupment percentage and employer contribution rate. Understanding the Board’s preference for stable long term costs for employers, we recommend that the Board seeks to maintain a minimum buffer of 25% of accrued funded liabilities, to allow for investment volatility and the inherent uncertainty in assumptions. This corresponds to a maximum initial reduction in the recoupment percentage from 73.6% to 67.0%. Further reductions could be made over time, if experience is no less favourable than the adverse assumptions adopted for this report.

(ii) Developing an appropriate and gradual “de-risking” of the investment strategy, in order to reduce the expected volatility of investment returns. This could be expected to result in lower investment returns and therefore a higher cost to the employers, but with greater predictability.

(iii) Maintaining the current investment strategy and recoupment percentage for the time being. As illustrated in the projections in Section 7, if this approach were maintained indefinitely, and experience were in line with the assumptions, Scheme assets would be significantly more than required to finance the funded share of liabilities, and by around 2031 the Scheme would be “fully funded”, meaning the recoupment percentage could potentially be reduced to zero (although in practice it is likely the Board would require recoupments to continue beyond this date in order to provide a buffer against adverse experience).

We recommend the Board discuss these options with Treasury, taking into account the expected impacts of the proposed portability options.

Pending these discussions, we recommend no change to the employer contribution rate of 15.0% of salaries and the recoupment percentage of 73.6% for unfunded benefits for the year ending 30 June 2024.

We understand that GESB expenses in respect of GSS will continue to be met by a separate appropriation from the Consolidated Account each year.

Pension Scheme (PS)

We note that the PS Rules suggest that surplus assets should be used to finance future indexation of the pensions. The Board may wish to explore this option.

We are not recommending any immediate change to the employer contributions in respect of the PS. The reason is that the PS is primarily a pay-as-you-go scheme and the assets represent a small proportion of the total projected liabilities.

We note that expenses incurred by GESB in administering the PS are appropriated from the Consolidated Account each year.

West State Super (WSS)

The WSS Government Guaranteed Payments Reserve (WGGPR) is expected to be sufficient to meet all future payments in respect of the Minimum Benefit Guarantee and the death and disability claims which are not covered by external insurance.

However, it is recommended that GESB continue to monitor the emerging self-insurance claims experience, particularly in relation to ‘top up’ payments.

I welcome any questions relating to the need for any supplementary information or explanation about this actuarial investigation.

Prepared by:

Esther Conway
Fellow of the Institute of Actuaries of Australia

22 August 2023

2 Introduction

Background

This report on the actuarial investigation as at 30 June 2023 of the Government Employees Superannuation Fund (the Fund), has been prepared for the Government Employees Superannuation Board (GESB). The Fund comprises the following superannuation schemes:

- Gold State Super (GSS);
- the Pension Scheme (PS), including the Provident Account;
- West State Super (WSS);
- GESB Super, including Retirement Access; and
- the Retirement Income Schemes (RIS), including both account-based pensions and term allocated pensions.

The Fund is an exempt public sector superannuation scheme for the purposes of the *Superannuation Industry (Supervision) Act 1993*. The Fund is deemed to be a complying superannuation fund for Superannuation Guarantee purposes under the *Superannuation Guarantee (Administration) Act 1992* and for income tax purposes under the *Income Tax Assessment Act 1936*. GSS, PS and WSS are constitutionally protected superannuation schemes (as defined in the Income Tax Assessment legislation), and are therefore not required to pay tax.

Scope and Purpose

The *State Superannuation Act 2000* requires an actuarial investigation into the state and sufficiency of the Fund be carried out at least every three years.

The main purposes of the investigation are to:

- establish the financial state of the Fund;
- assess the adequacy of future member and employer financing;
- assess the adequacy of the proportion of the benefits paid from the Consolidated Account in respect of unfunded benefits; and
- review the reserves held by the Fund in respect of the WSS minimum benefit guarantee and the self-insured death and disability benefits.

Whilst this actuarial investigation includes information for the Fund as a whole, the primary focus is on the financial position of the defined benefit schemes: Gold State Super (GSS) and the Pension Scheme (PS), and the adequacy of the reserve held for the minimum benefit guarantee and the self-insured death and disability benefits of West State Super (WSS).

The scope of this investigation does not include a review of the accumulation schemes (other than the WSS reserve mentioned above) or the adequacy of the operational risk reserve or the general accumulation reserve.

This report considers both the funded and unfunded benefit liabilities. However, it should be noted that Fund assets are only held in respect of funded benefits.

The previous actuarial investigation was conducted by me as at 30 June 2022, and the results are contained in a report dated 12 August 2022.

Overview of Benefits and Funding

This section provides a high level summary of the benefits provided by the schemes and considers the funding framework in place to pay for these benefits. More detail on the design of the defined benefits is provided in Appendix A.

Gold State Super

GSS members receive lump sum defined benefits on retirement, death or disablement. These benefits are fully funded or partly funded, dependent on the status of each participating employer. Funded benefits are provided by employers who make regular contributions to GSS to cover the cost of benefits as they accrue, whereas partly funded benefits are provided by employers who make payments when benefits fall due on a pay-as-you-go basis, in respect of the relevant service. All active members make regular contributions to the Fund.

The cost of any unfunded benefits is charged to the Consolidated Account at the time the benefits are paid, so that the Fund is only required to meet the cost in respect of funded benefits. The recoupment is calculated as a fixed proportion of retirement benefits accrued with employers who provide unfunded benefits. This proportion is called the Recoupment Percentage and is reviewed periodically by the Fund Actuary.

In respect of death or disablement benefits, the funding of accrued (or past service) benefits is treated in the same manner as retirement benefits whereas the benefits relating to future service are unfunded and fully recouped from the Consolidated Account for employees of Treasury funded agencies. However for employees of other agencies, the Fund bears the full cost of all death and disablement claims.

In addition to their normal benefits, GSS members who have transferred from the PS receive a lump sum reflecting the value of their accrued pension benefits as at the date of transfer.

From 1 January 2008, GSS members are able to access 100% of their accrued retirement benefits prior to actual retirement thereby enabling them to participate in the transition to retirement provisions introduced by the Australian Government. The payments of these lump sum benefits (paid after the preservation age) are treated in the same manner as other retirement benefits through the operation of the Recoupment Percentage. However, when the member finally retires, their benefit is reduced by an offset multiple due to the earlier payment of the transition to retirement benefit.

GSS is an untaxed scheme; that is, no contributions or investment earnings tax is payable by the scheme. However, tax is payable by the member on receipt of a benefit.

Pension Scheme

The PS provides pensions to members, commencing on their elected retirement date. The level of a member's pension is determined by a system of units. This system allows members to select the amount of their pension based on the level of their contributions. Employers do not contribute to the Fund but rather pay benefits on a pay-as-you-go basis.

However, members do contribute. Hence, the pensions are partly funded and partly unfunded:

- **The Fund Share** represents the funded, member-financed portion of the benefits;
- **The State Share** represents the unfunded, employer-financed portion of the benefits, as well as the cost of indexing both the Fund Share and State Share after pension payments have begun. The maximum State Share is a pension of 50% of final salary.

The Fund pays benefits to members as they fall due. The cost of any unfunded benefits is subsequently recouped in full from the Consolidated Account, so the PS meets the cost in respect of funded benefits only.

Pensions are indexed half-yearly by the Perth CPI, and all indexation costs are met by appropriations from the Consolidated Account. However, if the Fund has a surplus of assets for the PS, it must be made available to help meet pension indexation costs.

The PS is also an untaxed scheme; that is, no contributions or investment earnings tax is payable by the scheme. However, tax is payable by the member on receipt of a benefit.

West State Super

WSS members receive a lump sum accumulation benefit on retirement. These benefits are fully matched by assets, so there is no recoupment from the Consolidated Account when a member is paid a benefit.

Like the defined benefit schemes, WSS is an untaxed scheme; that is, no contributions or investment earnings tax is payable by the scheme. However, tax is payable by the member on receipt of a benefit.

The benefits provided to WSS members in all circumstances are calculated as:

	Employer and member contributions
plus	investment earnings (net of investment expenses)
less	insurance premiums
less	administration expenses
plus	an insurance payout in the case of death or disablement.

Members have the choice of several different investment options in which to invest their contributions. No investment guarantee is provided on members' accounts, although a minimum benefit guarantee applies to benefits as at the introduction of investment choice on 1 July 2001.

Until 30 June 2008, WSS self-insured members' death and disablement benefits. From 1 July 2008, insurance has been outsourced to a third party insurer. However, WSS remains responsible for Partial and Permanent Disability (PPD) claims on an ongoing basis and the run-off in respect of pre-existing conditions following the outsourcing decision. In addition, WSS is responsible for any difference between the statutory insurance component (i.e. using the insurance formula which applied prior to 1 July 2008) and the member's actual insurance component.

Payments required as the result of the minimum benefit guarantee or self-insured death and disability claims are met from the WGGPR.

GESB Super & Retirement Income Schemes (RIS)

GESB Super and RIS are fully funded, taxed accumulation schemes. A review of the operation of these schemes, and the associated reserves, is beyond the scope of this investigation.

Significant events since the investigation date

The investment return on the defined benefit schemes assets for the period from 30 June 2023 to 17 August 2023 was 0.22%, compared to the funding assumption of 0.77% over the same period.

The Perth CPI increase for the quarter 31 March 2023 to 30 June 2023 (published in late July) was 0.80%, compared to the funding assumption of 0.74% over the same period.

Overall this experience will have slightly deteriorated the financial position of the two defined benefit schemes, with the negative impact of slightly lower than assumed investment returns adding to the negative impact of slightly higher than assumed price inflation. This short-term experience does not materially impact the strong financial position of the scheme or the recommendations contained in this report.

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Experience of the Defined Benefit Schemes

Membership

The membership data used for this investigation has been supplied by Link Group, who administers the Schemes on behalf of the Board.

The membership records for GSS and the PS are provided as at 30 April 2023. We have adjusted the data to allow for contributions, benefit accruals and indexation for the period 1 May 2023 to 30 June 2023, but assumed no change in membership status or salaries during the two months to 30 June 2023.

We have not independently verified or audited the data provided but have performed a range of broad "reasonableness" checks and tested for consistency with previous records. We are satisfied that the data is sufficiently accurate for the purposes of the actuarial investigation. GESB has ultimate responsible for the validity, accuracy and comprehensiveness of the membership data.

The following section summarises the membership data of GSS and the PS as at the current and previous investigation dates:

Gold State Super

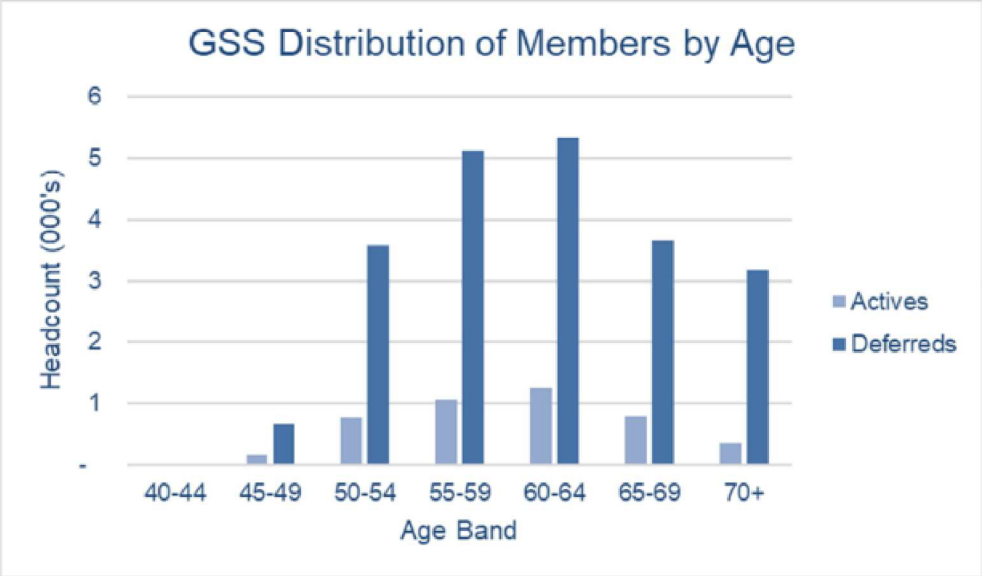
Active Members	Headcount	Average Age	Average Past Membership	Average Salary
As at 30 June 2022	**5,470**	**60.0 years**	**27.9 years**	**$119,450**
New members*	2			
Retirements	-168			
Transfers to Deferred in GSS	-921			
As at 30 June 2023	**4,383**	**60.3 years**	**28.3 years**	**$119,507**

* Members granted special permission to join GSS.

Deferred Members	Headcount	Average Age
As at 30 June 2022	**21,150**	**60.4 years**
New members*	1	
Transfers from Active	921	
Retirements	-538	
As at 30 June 2023	**21,534**	**61.4 years**

* Reversal of a payment in the prior period.

The chart below shows the age distribution of the current members in GSS:



The above graph shows the age distribution of GSS members. The high proportion of members aged over 55 is clear. About 47% of membership is expected to retire in the next six years.

Over 83% of GSS members are deferred, with 80% of these members being over 55. Approximately 59% of the funded liability (and 55% of the total accrued liability) now relates to deferred members. As benefits for deferred members are increased in line with Perth CPI plus 1% per annum until age 55 and Perth CPI plus 2% per annum thereafter (rather than salary growth), this means that the actual Perth CPI experience has a significant impact on the Scheme's overall financial position.

Pension Scheme

Contributors	Headcount	Average Age	Average Past Membership	Average Salary
As at 30 June 2022	**22**	**64.2 years**	**41.5 years**	**$98,928**
Transfers out*	-1			
Retirements	-7			
Death/Disablement	0			
As at 30 June 2023	**14**	**67.1 years**	**42.0 years**	**$89,985**

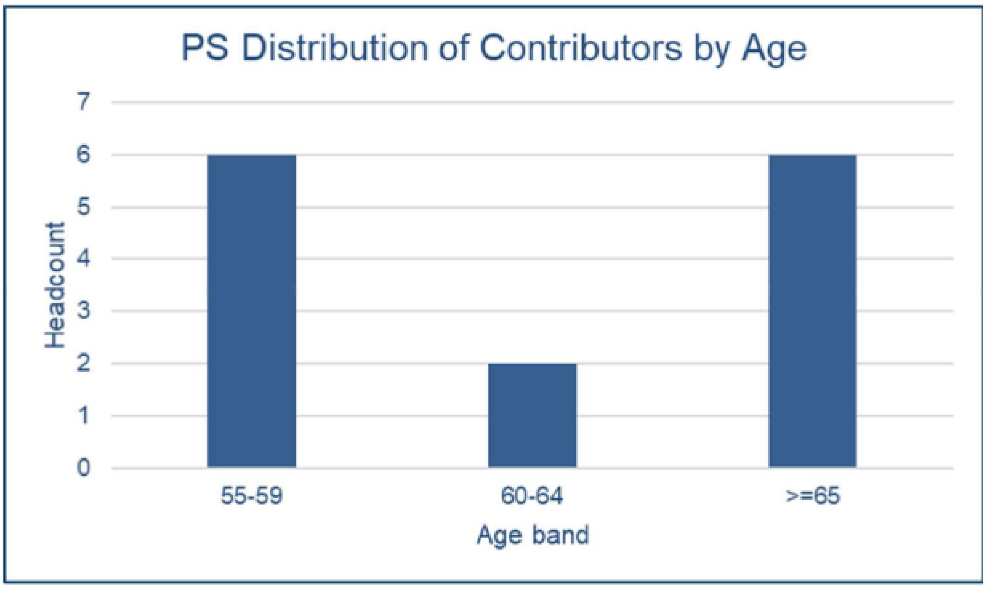
* Transfer to GSS after member became ineligible to remain in PS.

Pensioners	Age Retirement	Invalidity	Widowed	Total
As at 30 June 2022	**1,822**	**286**	**2,097**	**4,205**
Average Age	84.3 years	81.0 years	87.7 years	85.8 years
Average Annual Pension*	$45,788	$40,898	$26,420	$35,797
Active to Pensioner	7	0	0	7
New Pensioner/Spouse Pensions	0	0	63	63
Deceased	-152	-18	-241	-411
As at 30 June 2023	**1,677**	**268**	**1,919**	**3,864**
Average Age	84.4 years	81.4 years	87.9 years	85.9 years
Average Annual Pension*	$50,788	$44,687	$29,075	$39,581
Number of Funded Pensioners** as at 30 June 2022	1,079	286	1,509	2,874
Number of Funded Pensioners** as at 30 June 2023	1,003	268	1,392	2,663

*State share

**Number of pensioners whose benefit is partially funded by Fund assets.

The following graph shows the age distribution of active members. All members are now aged over 55, and over 85% of the active membership is expected to retire in the next five years.



Salary Increases

The average rate of salary increase for active GSS members who remained in the scheme throughout the year was 1.6%. At the previous investigation, it was assumed increases would average 3.5% per annum. The average rate of salary increase over the last three and five years is shown in the table below:

Year	Increase (per annum)
2018-19	0.8%
2019-20	1.2%
2020-21	1.3%
2021-22	1.1%
2022-23	1.6%
Last 3 years	**1.3%**
Last 5 years	**1.2%**

The above table indicates that salary increases during recent years were lower than the rate assumed in the previous report.

Perth Consumer Price Index

Given that indexation is applied at different times for each Scheme, the actual experience differs slightly between the two Schemes. The table below shows separately the rate used to index GSS benefits for each financial year (based on the increase for the year to 31 March and applied from 1 July in the following year) and the rate used to index PS pensions for each financial year (based on the increase for the year to the December preceding financial year end).

Financial Year	CPI for GSS Indexation (per annum)	CPI for PS Indexation (per annum)
2018-19	1.1%	1.3%
2019-20	2.1%	1.6%
2020-21	1.0%	-0.1%[1]
2021-22	7.6%	5.7%[2]
2022-23	5.8%	8.3%
3 year average	**4.8%**	**4.6%**
5 year average	**3.5%**	**3.3%**

Source: Australian Bureau of Statistics

[1] Perth CPI change was negative but treated as 0% for indexation of pensions.

[2] Pension increase awarded in PS for the full year was 5.6% due to adjustment for 2020-21 negative change.

At the previous investigation, it was assumed that Perth CPI increases for GSS indexation would average 3.0% per annum for the first 3 years and 2.5% per annum thereafter. For the PS, we adopted a higher first year pension indexation assumption of 5.5%, taking into account the different timing of indexation and the known experience to the date of the report.

The above table indicates that for both GSS and the PS, those increases which are linked to Perth CPI were 2.8% higher than assumed[1] in respect of the 2022-23 year.

However, for GSS, the previous investigation allowed for the 2021-22 indexation to be applied in full as at 1 July 2022 (in addition to the future indexation described above). We have now learned that in practice, this indexation was applied gradually over the following financial year[2]. For this investigation we have adjusted our approach to better reflect the actual timing of indexation (i.e one year later than previously assumed). The impact of this change is to remove one year's worth of future indexation, approximately offsetting the impact of the higher than assumed Perth CPI increase.

Investment Return

The assets of the GSS and the PS currently have a benchmark exposure to equities and medium risk investments of 82%. The actual allocation to these investments as at 30 June 2023 was 79.6%.

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[1] 5.8% actual compared with 3% assumed for GSS and 8.3% actual compared with 5.5% assumed for PS.

[2] That is, indexation based on the 7.6% Perth CPI figure was assumed to be applied as at 1 July 2022, but in practice was applied over the year to 30 June 2023.

The annual investment returns are shown in the table below:

Year	Investment Return (net of fees, per annum)
2018-19	7.4%
2019-20	-2.1%
2020-21	20.7%
2021-22	-5.1%
2022-23	10.2%
3 year average	**8.1%**
5 year average	**5.8%**

Source: GESB

During the last three years, the average investment return from these assets, of 8.1% per annum compound, has been higher than the assumption adopted at the previous investigation of 5.5% per annum.

Summary of Scheme Experience

The main experience items affecting the Scheme's financial position during the period from 30 June 2022 to 30 June 2023 were as follows:

Item	Assumption	Scheme experience	Comment on effect
Investment returns	5.5% p.a.	10.2%	Positive effect – investments grew at a higher rate than assumed
Salary increases	3.5% p.a.	1.6%	Positive effect – benefit liabilities grew at a lower rate than assumed
Perth CPI increases (GSS)	3.0% p.a. for the first 3 years 2.5% p.a. thereafter*	5.8%	Neutral – although Perth CPI was higher than assumed, this was approximately offset by a change in the assumed timing of indexation.
Pension indexation	5.5% for the first year, 3.0% p.a. for the next 2 years 2.5% p.a. thereafter	8.3%	Negative effect – benefit liabilities grew at a higher rate than assumed[3]

*In addition to the rates shown the known increase of 7.6% plus 1% or 2% was applied to deferred benefits from 1 July 2022

The positive investment return experienced by the Scheme increased the surplus by approximately $170 million. The lower than assumed salary increases increased the surplus by approximately $10 million.

[3] Although the cost of these increases are currently met by additional employer contributions rather than Scheme assets.

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Actuarial Assumptions

The actuarial process includes projections of the Fund's possible future experience on the basis of actuarial assumptions about future experience. These assumptions include investment returns, salary increases, pension increases, rates at which members cease service for different reasons, and various other factors affecting the financial position of the Fund.

It is not expected that these assumptions will be precisely borne out in practice, but rather that in combination they will produce a model of possible future experience that is considered a suitable basis for setting the contribution rate and/or recoupment percentage.

Economic Assumptions

The most significant assumption made in estimating the cost of defined benefits is the difference between:

- the assumed investment earnings; and
- the salary and inflation increases used in the projections of future benefit payments.

This difference is commonly referred to as the "gap".

The key long-term economic assumptions adopted for this investigation are shown in the table below. Assumptions for the previous investigation are also shown for comparative purposes.

Assumption	As at 30 June 2022	As at 30 June 2023
Investment returns (after investment fees)	5.5% p.a.	6.0% p.a.
Salary increases[1]	3.5% p.a.	3.5% p.a.
Perth CPI increases (GSS)	3.0% p.a. for the first 3 years followed by 2.5% p.a. thereafter	5.8% for the first year[3], 3.0% for the second year followed by 2.5% p.a. thereafter
Pension indexation[2]	5.5% for the first year, 3.0% p.a. for the next 2 years followed by 2.5% p.a. thereafter	3.0% p.a. for the first 2 years followed by 2.5% p.a. thereafter

[1] Inclusive of promotional increases. This high level approximation is considered reasonable given the older membership of both GSS and the PS.

[2] No allowance for indexation is made in the calculation of funded liabilities, because in general indexation is unfunded and is met from the Consolidated Account. However, if the Fund has a surplus of assets for the PS, it must be made available to help meet pension indexation costs. Allowance for indexation of both funded and unfunded pensions is made in the calculation of unfunded liabilities, and the projected cash flows.

[3] Reflecting actual increase in Perth CPI over the year ended March 2023.

The investment return assumption has been increased to 6.0% per annum. This assumption is based on expected investment returns for the Fund's current investment mix, using advice received from Mercer Investment Consulting on the long term expected returns from various asset classes, as well as the short to medium term impact of current market conditions on those expected returns. Appendix C provides an explanation of this long-term rate based on the asset allocation of the defined benefit schemes.

Based on Reserve Bank of Australia and Mercer forecasts, we have assumed Perth CPI increases of 3.0% per annum for the first two years and 2.5% per annum thereafter. This assumption is the same as the previous investigation assumption.

However, we have adjusted the first year indexation assumption for GSS deferred benefits, to reflect the known Perth CPI increase of 5.8% for the year to March 2023 (which we understand will be applied during the year to 30 June 2024). For the PS, no adjustment was made since Perth CPI experience for the December 2022 to March 2023 quarter was approximately in line with the short term assumption of 3.0% per annum.

The salary increase assumption is based on economic forecasts for future increases in salaries as well as taking into account the assumptions adopted by the State Government for its superannuation disclosures. The salary increase assumption for GSS members remains at 3.5% per annum with no separate short term assumptions, maintaining the 1% margin above CPI increases in the long term.

Our review notes that in the superannuation disclosures in its financial statements, the State Government has allowed for future salary increases to be 3.8% for the first year and 3.0% per annum thereafter. These rates include a 0.5% allowance for promotional salary increases. We have made a slightly different assumption in the above table.

The impact of changing the investment return assumption as described above was to increase the surplus by approximately $59.4 million. As described above, the impact of increasing the first year indexation assumption for GSS (to reflect known CPI experience for the year ended 31 March 2023) was approximately offset by the change in the assumed timing of GSS indexation.

Sensitivities

It must be recognised that the future is uncertain and that the actual economic experience is likely to differ from these assumptions. The sensitivity of the Fund's financial position is illustrated by considering a "lower investment return" scenario with the assumed investment return reduced by 1% per annum (i.e. a long-term assumption of 5.0% per annum), whilst keeping all other assumptions unchanged. Under this scenario, a smaller gap between the rate of investment return and the rate salary increases and inflation is assumed. However, it should be recognised that this lower investment return assumption scenario does not represent the boundary of possible future adverse outcomes.

The following table shows the effect of adopting the lower investment return assumptions rather than the main assumptions on the net financial position (i.e. Fund assets less accrued funded liabilities), with the impact of the change as a percentage of assets shown in brackets:

Scenario	Net Financial Position as at 30 June 2023 ($million)	Change ($million)	Change (% of assets)
Main assumptions	889.7		
1% lower investment return assumptions	767.7	-122.0	-4.0%

It can be seen that if investment returns were 1% per annum lower than assumed, the defined benefit schemes would remain in a strong financial position. If the salary and CPI assumptions were 1% per annum higher than assumed the impact on the net financial position would be slightly smaller than the impact of investment returns being 1% lower, since the PS does not fund pension increases and is therefore unaffected by changes in salary and CPI assumptions.

Further discussion of the sensitivity of each Scheme to changes in economic assumptions is provided in Sections 7 and 8.

Demographic Assumptions

The demographic assumptions used in preparing this report are based on a detailed analysis of the GSS and PS membership experience over the period to 30 June 2021. This analysis is set out in our report *GESB – Demographic Experience Investigation 2019-2021* dated 15 June 2022. Details of the demographic assumptions are set out in Appendix C.

Expenses and Allocation of Contributions

Our understanding of the current arrangements to meet expenses in respect of the defined benefit schemes is that there is an annual appropriation from the Consolidated Account by WA Treasury. However, as this payment does not affect the funding of benefits, we have ignored this payment in our funding calculations. This means that for GSS with a recoupment percentage of 73.6% of unfunded benefits, the Fund has been required to finance 26.4% of the defined benefits.

For the PS, the annual dollar based budget for expenses is directly appropriated from the Consolidated Fund by WA Treasury and has therefore been ignored in our funding calculations.

5 Financial Position of the Fund

Fund Assets

We have been provided with the unaudited investment values of the units on issue for WSS, GESB Super and the RIS as at 30 June 2023. We have also been provided with the unaudited value of the total assets for the Fund as a whole, which includes these schemes as well as GSS and the PS.

For the purposes of this investigation, we have assumed a Net Asset Value at 30 June 2023 of $36,039.5m, as shown in the Fund's draft financial statements.

Allocation of assets to schemes

In order to assess the financial position of each scheme it is necessary to allocate the Fund's assets between the various schemes.

The allocation process begins by considering the assets required for the accumulation schemes, allowing for both the value of member balances and the required reserves as determined by the Board. The remaining assets are then available for the defined benefit schemes as shown in the following table:

As at 30 June 2023	Net Value of Assets ($million)
Fund assets	**36,039.5**
less Accumulation schemes' member balances	32,715.5
Reserves	238.3
Net assets for accumulation schemes	**32,953.8**
Net assets for defined benefit schemes	**3,085.7**

After allowing for the value of the accrued funded liabilities in the accumulation schemes and the associated reserves, the remaining assets have been apportioned between GSS and the PS in proportion to each scheme's funded accrued liabilities, as shown below:

As at 30 June 2023	Gold State Super	Pension Scheme	Total
Total accrued funded liabilities	$2,131.7m	$64.3m	$2,196.0m
Net assets for defined benefit schemes	$2,995.3m	$90.4m	$3,085.7m
Assets as % of accrued funded liabilities			**140.5%**

For GSS, the funded liabilities shown are calculated according to the established approach of recognising a proportion (currently 26.4%) of any benefit accrued with a PAYG employer, together with the whole of any benefit accrued with a contributing employer.

For the PS, the funded liability is the present value of the Fund Share of the accrued pension.

Net Position

The net financial position of the defined benefit schemes as at 30 June 2023 is shown in the table below. The financial position for the previous four years is also shown for comparison:

Financial Position as at 30 June	2019 ($million)	2020 ($million)	2021 ($million)	2022 ($million)	2023 ($million)
Total net assets	**29,504.1**	**29,340.0**	**34,527.2**	**33,161.6**	**36,039.5**
less					
West State Super	16,392.9	16,190.5	18,885.9	17,861.7	19,046.7
GESB Super	4,605.8	4,878.9	6,212.4	6,287.9	7,411.1
Retirement Income	5,327.1	5,295.2	6,016.1	5,908.1	6,243.7
Term Allocated Pension	18.3	16.0	16.8	14.6	14.0
Total Reserves	236.7	244.0	250.6	230.6	238.3
Net assets for defined benefit schemes	**2,923.3**	**2,715.4**	**3,145.4**	**2,858.7**	**3,085.7**
Accrued Funded Liabilities					
Gold State Super	2,126.9	2,172.5	2,150.5	2,102.3	2,131.7
Pension Scheme	73.5	80.5	76.1	69.6	64.3
Net financial position	**722.9**	**462.4**	**918.8**	**686.8**	**889.7**
Net financial position as % of funded defined benefit liabilities	**32.9%**	**20.5%**	**41.3%**	**31.6%**	**40.5%**

The overall financial position of the Fund has improved since the previous actuarial investigation as at 30 June 2022 primarily due to the investment return for the defined benefit schemes of 10.2% for the year being higher than the previously assumed return of 5.5% per annum, and the increase in the assumed rate of future investment returns. The combined funding percentage in respect of the funded liabilities for GSS and the PS has increased from 131.6% at 30 June 2022 to 140.5% at 30 June 2023.

6

Commentary on Key Risks

Investment Policy

The assets of the defined benefits schemes are managed with a single investment strategy and a common asset allocation within the Fund.

The primary objective of the investment policy is to deliver investment performance in excess of the Average Weekly Earnings (AWE) + 2.5% per annum over rolling five-year periods. Returns are measured after investment management expenses.

The secondary performance objective is to achieve a return in excess of the schemes' asset weighted benchmark return over a rolling three-year period. The asset weighted benchmark return is the weighted average of the benchmark return for each asset class based on the schemes' Strategic Asset Allocation (SAA). The SAA is approved by the Treasurer and asset class benchmarks are determined by the Board.

The actual asset allocation and SAA for the assets supporting the funded defined benefit liabilities are as follows:

Asset Class	Actual Allocation as at 30 June 2023	Strategic Asset Allocation
Australian equities	17.7%	19.0%
Overseas equities	36.3%	36.0%
Private Equity	0.7%	1.0%
Growth	**54.7%**	**56.0%**
Property	8.3%	9.0%
Infrastructure	4.7%	5.0%
Medium Risk Alternatives	11.9%	12.0%
Part Growth and Defensive	**24.9%**	**26.0%**
Investment Grade Bonds	9.7%	10.0%
Defensive Alternatives	5.1%	5.0%
Cash	5.6%	3.0%
Defensive	**20.4%**	**18.0%**
Total	**100.0%**	**100.0%**

Source: Link

It can be seen that the SAA involves significant exposure to 'growth' (or partially growth) assets such as shares and property. 'Growth' assets are expected to earn higher returns over the long term compared to 'defensive' assets, but also to exhibit more variation in returns from year to year.

Given that it is not known when members will take their benefit with certainty, the exact term of the GSS liabilities is unknown. However, a substantial proportion of accrued defined benefits now relates to members who are over age 55 and therefore approaching retirement, as can be seen from the membership graphs in Section 3. Over the remaining life of the Scheme, it is expected that the term of the liabilities will continue to shorten and the proportion of liabilities linked to Perth CPI (rather than salary inflation) will continue to increase.

The Scheme's investments are expected to provide a high level of liquidity in normal circumstances. Additionally, the very strong financial position (as will be described in Section 7) gives the Scheme significant capacity to 'ride out' the ups and downs in returns that are expected from investment strategies with substantial exposure to 'growth' assets. We do not envisage any problem for the defined benefit schemes in being able to redeem the necessary assets to meet benefit payments as they arise in the next few years.

However, given the ongoing changes in the GSS membership profile, it would be prudent for the Board, in conjunction with the Treasurer, to continue its regular review of the current prudential guidelines for investments. In particular, consideration could be given to the development of an appropriate and gradual de-risking strategy (that is, modifying the investment objective and moving part or all of the defined benefit assets to a lower risk strategy), particularly if the Treasurer wishes to reduce the potential for contribution rate volatility. We can prepare additional information to assist the Board in considering a change in investment strategy if required, including assessing the expected impact on recoupment and employer contribution rates, and on the variability of the financial position.

By contrast with GSS, the PS has a small level of assets as most of the PS's benefits are funded on a pay-as-you-go basis, which results in a very small net cash outflow. Hence, we are satisfied that the investment strategy is appropriate in view of the PS's longer term cash flows and the financial support provided by the Government.

Insurance Arrangements

There are several existing insurance arrangements protecting the Fund from possible adverse experience in respect of deaths, disablements or longevity. These include:

- financial support from the Government in respect of death and disablement claims for GSS members who are employed by Treasury funded agencies;
- financial support from the Government for all pension payments from the PS; and
- a group life insurance policy with a third party covering death and Total and Permanent Disability (TPD) claims for eligible WSS and GESB Super members from 1 July 2008.

However, there are three types of claims where the Fund bears the full risk (i.e. self-insurance):

- death and disablement claims from GSS members who are employed by self-funded agencies where there is no financial support from the Government should a catastrophe or adverse experience occur. Based on the current GSS membership from self-funded agencies, it is expected that there will be 'insurance' payments in respect of future service totalling about $125,000 for these members during the next 12 months, with a maximum amount 'at risk' of approximately $39 million (the total additional payments if all GSS members from self-funded agencies had a claim falling due during the next 12 months). We are satisfied that GSS has sufficient reserves to meet any insurance payments required.
- Partial and Permanent Disability (PPD) claims for WSS members and the run-off in respect of pre-existing conditions, especially for TPD claims.

- Any difference between the statutory insurance component payable to WSS members and the amount of the member's external insurance.

We recommend that the Board continue to monitor the ongoing claims experience of WSS, particularly in relation to the third point mentioned above.

West State Government Guaranteed Payment Reserve

The following table summarises the movement in the West State Government Guaranteed Payment Reserve (WGGPR) over the year to 30 June 2023:

	($million)
Opening balance at 1 July 2022	**41.5**
Utilisation of reserve	-2.1
Contribution to reserve	0.0
Surplus from accumulation schemes	0.0
Transfer from Accumulation General Reserve	0.0
Investment income	1.4
Closing balance at 30 June 2023	**40.8**

This reserve arose from the merger of the previous Minimum Benefit Guarantee Reserve and the WSS Insurance Reserve. It is used to fund payments arising from:

- the guarantee provided to WSS members in respect of their balance as at 30 June 2001 indexed by the Perth CPI plus 2%;
- the self-insured PPD insurance claims for WSS members;
- the run-off in respect of pre-existing conditions for WSS members; and
- any difference between the statutory insurance component and the member's actual insurance is provided by GESB.

Further discussion of the adequacy of this reserve is discussed in Section 9.

7

Gold State Super (GSS)

Overview

This report considers the financial position of GSS, in respect of both

- the funded portion of the GSS liabilities; and
- a comprehensive approach including both funded and unfunded benefits, which takes into account all past and future service, as well as future contributions, recoupments and total benefit payments.

The financial position of GSS has improved over the year since the last actuarial investigation due primarily to a higher than assumed investment return of 10.2% during the period and increase in the assumed rate of future investment return, and remains in a strong position.

We understand that GESB is currently discussing various portability options with Treasury. These options would permit some or all deferred members to roll over their benefit to another superannuation fund and enable GESB to be included in the Australian Taxation Office (ATO) unclaimed money scheme to reunite unclaimed monies with their beneficiaries. The proposed start date for these options is 1 July 2024.

The very strong financial position enables the Board, in conjunction with Treasury, to consider various options for the future funding of the Scheme.

These include:

- Reducing the recoupment percentage and employer contribution rate;
- Developing an appropriate an appropriate “de-risking” strategy; or
- Maintaining the current recoupment percentage and investment strategy, with a view to minimising the future recoupments required.

These options are discussed further below, and we have recommended that the Board discuss them with Treasury, taking into account the expected impacts of the proposed portability options (also discussed further below).

Pending these discussions, we recommend no change to the employer contribution rate of 15.0% of salaries and the recoupment percentage of 73.6% for unfunded benefits for the year ending 30 June 2024.

Financial Position for Accrued Funded Liabilities

The financial position of GSS as at 30 June 2023 is shown in the table below. The net asset value that has been used represents a portion of the assets allocated to the defined benefit funds by GESB as discussed in Section 5. The position as at 30 June 2022 is shown for comparison purposes.

The actuarial value of accrued liabilities shown in this table is calculated using the valuation process set out in Appendix B and the actuarial assumptions described in Appendix C.

Financial Position as at	30 June 2022 ($million)	30 June 2023 ($million)
Net value of assets	**2,767.0**	**2,995.3**
Accrued Funded Liabilities		
Current members	1,052.6	864.9
Deferred members	1,049.7	1,266.8
Total accrued funded liabilities	**2,102.3**	**2,131.7**
Net financial position	**664.7**	**863.6**
Net financial position as % of funded defined benefit liabilities	**31.6%**	**40.5%**

The total accrued liabilities (both funded and unfunded) for GSS are $4,940.5 million. This corresponds to a funding percentage expressed in terms of total accrued liabilities (both funded and unfunded) of 60.6% (55.8% in 2022). This highlights that the assets are significant in comparison to the total accrued liability which is important to note when considering investment strategy.

The value of vested benefits for GSS members as at 30 June 2023 is shown in Appendix D for AASB1056 purposes.

The weighted average term of defined benefit liabilities (including both funded and unfunded liabilities) for GSS members is 5.9 years (a slight decrease from last year).

Financial Position for All Liabilities (Past and Future Service)

The previous section considered accrued funded liabilities only. However, a more comprehensive approach to assessing GSS's long term financial position and required funding rates takes into the total future benefit liabilities: funded and unfunded, and liabilities relating to future service (as well as those already accrued). This approach also allows for future contributions and future recoupments to be included in the total asset figure.

The following table shows the scheme's valuation balance sheet which treats future contributions and recoupments as an asset and future benefits (based on both past and future service) as a liability. Again, there is an improvement in the net position due to higher than assumed investment returns in the year ended 30 June 2023.

Actuarial Balance Sheet as at	30 June 2022 ($million)	30 June 2023 ($million)
Net value of assets	2,767.0	2,995.3
Value of future member contributions	155.2	121.1
Value of future employer contributions	70.1	54.9
Value of future recoupments	3,190.3	3,062.1
Total assets	**6,182.6**	**6,233.4**
Value of past service benefits	4,959.3	4,940.5
Value of future service benefits	536.6	408.2
Total liabilities	**5,495.9**	**5,348.7**
Net position	**686.7**	**884.7**

Under this approach, the net financial position is similar to that shown for accrued funded liabilities only, as the value of the unfunded liabilities is exactly offset by the value of future recoupments. The small difference in net position arises from the inclusion of future service liabilities and future member and employer contributions. In particular, the slightly higher net position indicates that the value of future member and employer contributions is expected to be more than sufficient to finance the funded component of future service benefits.

Sensitivity of Results

We have tested the effect of changes to the key assumptions in order to assess their effect on the value of liabilities and the net position.

The liabilities shown above have been calculated using our best estimate assumptions for investment return (6.0% per annum), salary growth (3.5% per annum) and price inflation (5.8% for the first year, 3.0% for second year, 2.5% per annum thereafter). As all of these items are unknown it is almost certain that actual experience will differ from these assumptions.

It is the difference between the investment return rate and salary growth rate and price inflation (commonly referred to as the 'gap') that is crucial rather than the individual assumptions, because the value of the assets move with investment returns while liabilities grow with salaries or inflation linked indexation.

To quantify the sensitivity of the net position to our assumptions, we have calculated the change in liability based on the following scenarios:

- Salary growth and price indexation increases or decreases by 1% per annum;
- Decrease the long term investment return assumption by 1% per annum; and
- A shock scenario, where the value of net assets suddenly reduces by 10%; and
- Decrease in the long term investment return assumption by 1% per annum AND the value of net assets suddenly reduces by 10% ("Adverse assumptions").

All other assumptions, including an employer contribution rate of 15% and a recoupment percentage of 73.6%, are assumed to remaining the same.

The effects of these changes are shown below, with the impact of the change as a percentage of assets shown in brackets:

Scenario	Net Position as at 30 June 2023 ($million)	Change	
		($million)	(% of assets)
Main assumptions	884.7		
Decrease salary increase and price indexation by 1% p.a.	994.4	109.7	3.7%
Increase salary increase and price indexation by 1% p.a.	764.5	-120.2	-4.0%
Decrease investment return by 1% p.a.	753.9	-130.8	-4.4%
Shock scenario – immediate 10% reduction in net value of assets	585.2	-299.5	-10.0%
Adverse assumptions	454.4	-430.3	-14.4%

The GSS is expected to remain in surplus under the scenarios outlined above.

Alternative Employer Contribution and Recoupment Rates

Given the very strong financial position, a reduction in the recoupment percentage and employer contribution rates could be considered.

Reducing the recoupment percentage to 52.7% (and the employer contribution rate to 10.7%) would reduce the net position under the main assumptions to zero, meaning that assets and future recoupments would be exactly sufficient to finance future benefit payments, if experience was in line with the valuation assumptions. These figures provide an indication of the average future recoupments and employer contributions which would be required if the valuation assumptions are borne out in practice. However, reducing future employer contributions to these levels would leave no buffer against adverse experience and is not recommended.

As illustrated above, the financial position is sensitive to the assumptions adopted for future investment returns, salary increases and price inflation. Understanding the Board's preference for stable long term costs for employers, we believe a cautious approach is prudent. Therefore, we recommend that the Board maintains a minimum surplus of assets over accrued funded liabilities of 25% (compared with the current 40.5% shown in the first table in this Section 7).

The following table shows the impact of reducing the recoupment percentage from 73.6% to 67.0%, and the employer contribution rate from 15% to 13.65% (corresponding to the minimum 25% surplus described above) under the main assumptions and the adverse assumptions described above.

Scenario	Net Position as at 30 June 2023 ($million)	Change	
		($million)	(% of assets)
Main assumptions (73.6% recoups)	884.7		
Main assumptions (67% recoups)	605.2	-279.5	-9.3%
Adverse assumptions (73.6% recoups)	454.4	-430.3	-14.4%
Adverse assumptions (67% recoups)	159.5	-725.2	-26.9%

The GSS is expected to remain in surplus under the scenarios outlined above, indicating that further reductions to the recoupment percentage could be made over time, if experience were no less favourable than the adverse assumptions.

Alternative Investment Strategy

Past actuarial investigation reports have suggested that the Board, in conjunction with the Treasurer, consider developing an appropriate and gradual “de-risking” strategy for Scheme assets. This would involve modifying the investment objective and moving some or all of the assets to a lower risk investment strategy, in order to reduce the volatility of returns. However, such an approach would also reduce expected returns, and increase the expected total future contributions and recoupments required from the employers.

To illustrate the potential impact on the Scheme financial position, the following table shows the estimated impact of reducing the expected investment return from 6% per annum to 4.5% per annum[4].

Scenario	Net Position as at 30 June 2023 ($million)	Change	
		($million)	(% of assets)
Main assumptions	884.7		
Decrease investment return by 1.5% p.a.	688.5	-196.2	-6.6%

The adoption of a de-risking strategy would also reduce the potential for investment return volatility and therefore the need to maintain a buffer against future uncertainty. We can prepare additional information to assist the Board and the Treasurer in considering a change in investment strategy if required, including assessing the expected impact on the required future recoupments and employer contributions and on the variability of the financial position.

[4] Corresponding to the assumed rate of Perth CPI increases plus 2%, the rate of indexation applied to deferred accounts for members over age 55 years.

Impact of increased portability

We understand the Board is currently discussing various portability options with Treasury. These options would permit some or all deferred members to roll over their benefit to another superannuation fund and enable GESB to be included in the Australian Taxation Office (ATO) unclaimed money scheme to reunite unclaimed monies with their beneficiaries. The proposed start date for these options is 1 July 2024.

From a Scheme point of view, these options are expected to have a relatively small impact on the results presented in this report, as the majority of deferred members are already able to access portability, and the options would not be available to active members. Based on the data provided for this report, as well as earlier data regarding the number of deferred members over age 55 who are currently unable to access portability[5], we estimate that the portability options would affect less than 15% of the total liabilities.

To the extent that member benefits are paid earlier as a result of portability, the amounts paid could be expected to exceed the value of the corresponding liabilities by approximately 10% to 15% (based on the assumptions adopted for this report). Although part of this additional cost would be met via recoupments, we estimate that about half would be met from Scheme assets (depending on the recoupment rate in place at the time the benefits are paid and whether the benefits paid relate to members of funded or unfunded agencies). This would have a small negative impact on the financial position of the Scheme in dollar terms, but a positive impact in percentage terms. That is, the surplus would decrease in dollars but increase as a percentage of the remaining liabilities.

Overall, the introduction of portability is not expected to materially affect the options available to the Board for the future funding of the Scheme.

However, from a Government point of view, the introduction of portability could be expected to increase the recoupments required in the short term, as some benefits will be paid earlier than would otherwise be the case. Mercer is currently undertaking further work to quantify these impacts, as well as the potential impact on the superannuation liability shown in the Government's financial statements. These impacts should be taken into account when discussing the various options with Treasury. In particular, decreasing the recoupment rate would reduce the additional recoupments required to be paid as a result of portability.

[5] Deferred members over age 55 who are employed within the Western Australian public service.

Recommendation

As indicated, GSS remains in a very strong financial position which enables the Board to consider a number of options for the future funding of the Scheme, including (but not limited to):

(i) Reducing the recoupment percentage and employer contribution rate. Understanding the Board's preference for stable long term costs for employers, we recommend that the Board seeks to maintain a minimum buffer of 25% of accrued funded liabilities, to allow for investment volatility and the inherent uncertainty in these assumptions. This corresponds to a maximum initial reduction in the recoupment percentage from 73.6% to 67.0%. Further reductions could be made over time, if experience is no less favourable than the adverse assumptions adopted for this report.

(ii) Developing an appropriate and gradual "de-risking" of the investment strategy, in order to reduce the expected volatility of investment returns. This could be expected to result in lower investment returns and therefore a higher cost to the employers, but with greater predictability.

(iii) Maintaining the current investment strategy and recoupment percentage for the time being. As illustrated in the projections below, if this approach were maintained indefinitely, and experience were in line with the assumptions, Scheme assets would be significantly more than required to finance the funded share of liabilities, and by around 2031 the Scheme would be "fully funded", meaning the recoupment percentage could potentially be reduced to zero (although in practice it is likely the Board would require recoupments to continue beyond this date in order to provide a buffer against adverse experience).

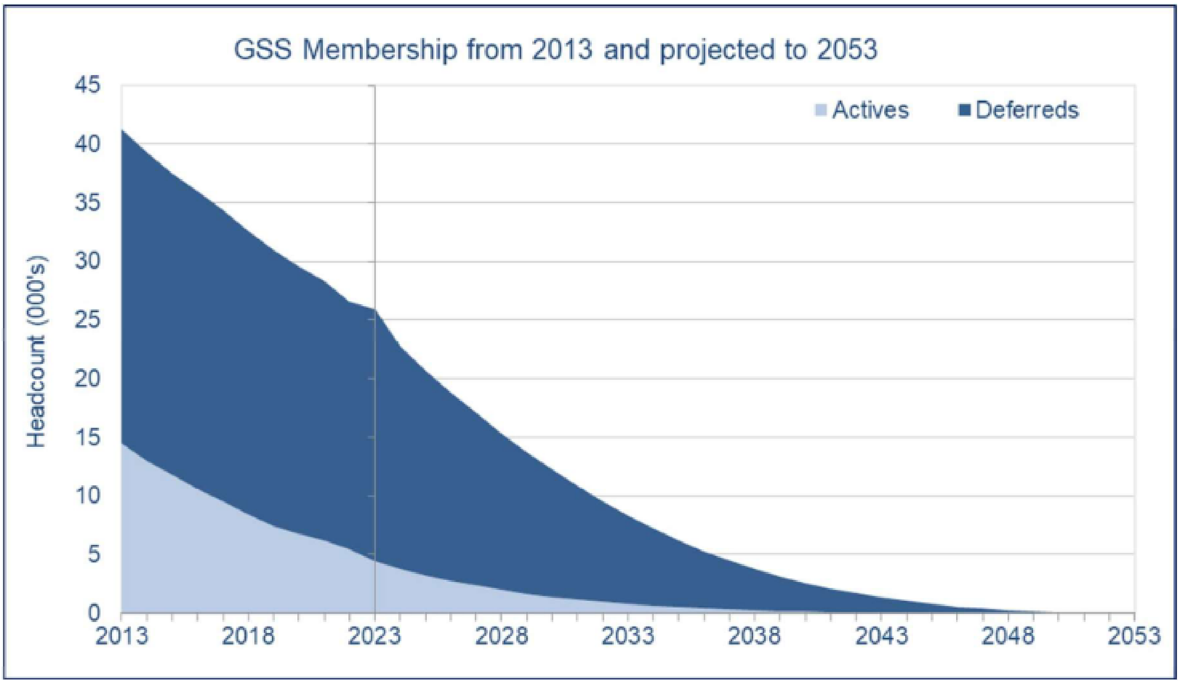
We recommend the Board discuss these options with Treasury, taking into account the expected impacts of the proposed portability options.

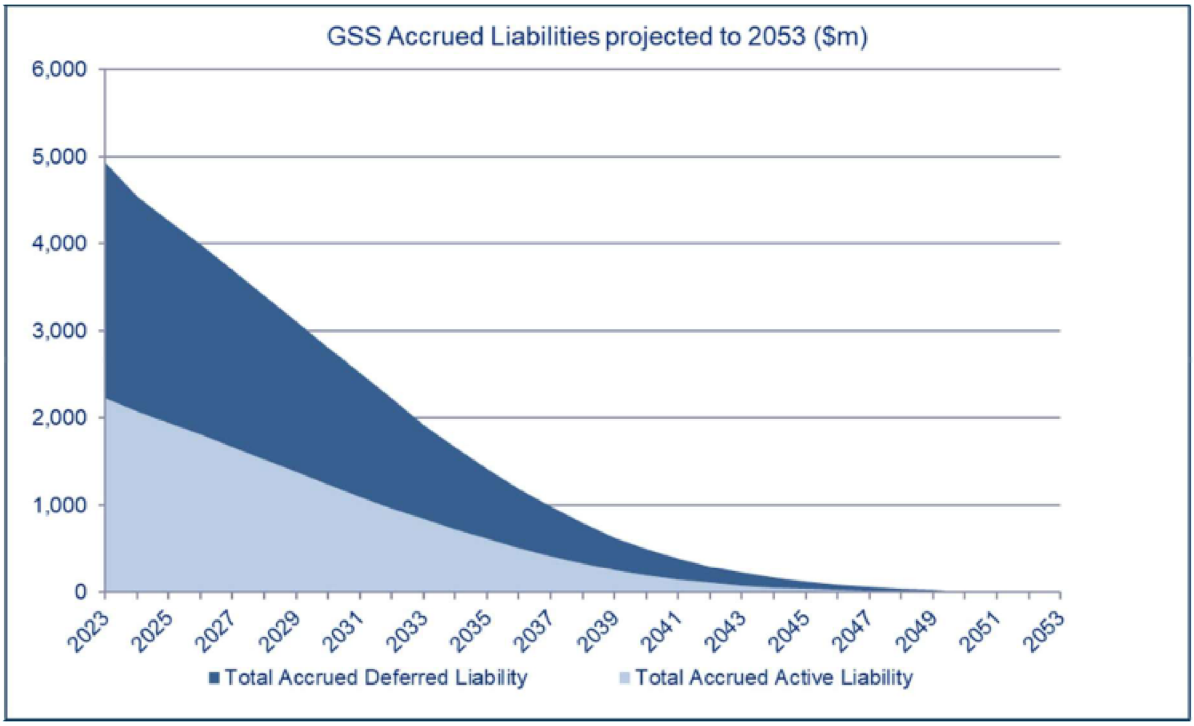
Although the introduction of portability is not expected to materially affect the options available to the Board for the future funding of the Scheme, it could be expected to increase the recoupments required to be paid by the Government in the short term. Decreasing the recoupment rate would reduce the amount of the additional recoupments required to be paid as a result of portability.

Pending these discussions, we recommend no change to the employer contribution rate of 15.0% of salaries and the recoupment percentage of 73.6% for unfunded benefits for the year ending 30 June 2024.

Projections

We have projected the estimated membership and total accrued liabilities (funded and unfunded) of GSS for active and deferred members to 2053. The following chart illustrates the actual and projected membership since 2013. These projections indicate that by number, deferred members will continue to make up the majority of GSS members in the future.

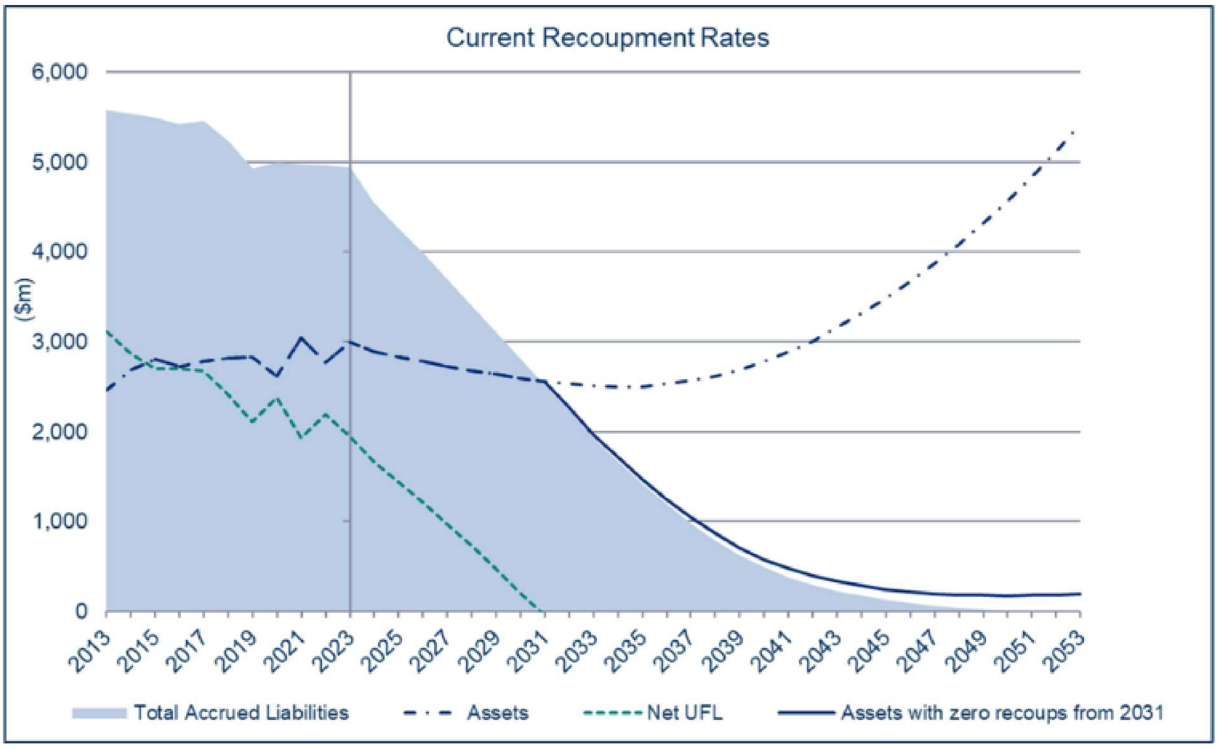




We have also projected the financial position of GSS to 2053, including data from the past ten years for comparison. All projections are based on the actuarial assumptions outlined in Section 4 and Appendix C, but allow for variation in the future employer contribution and recoupment rates.

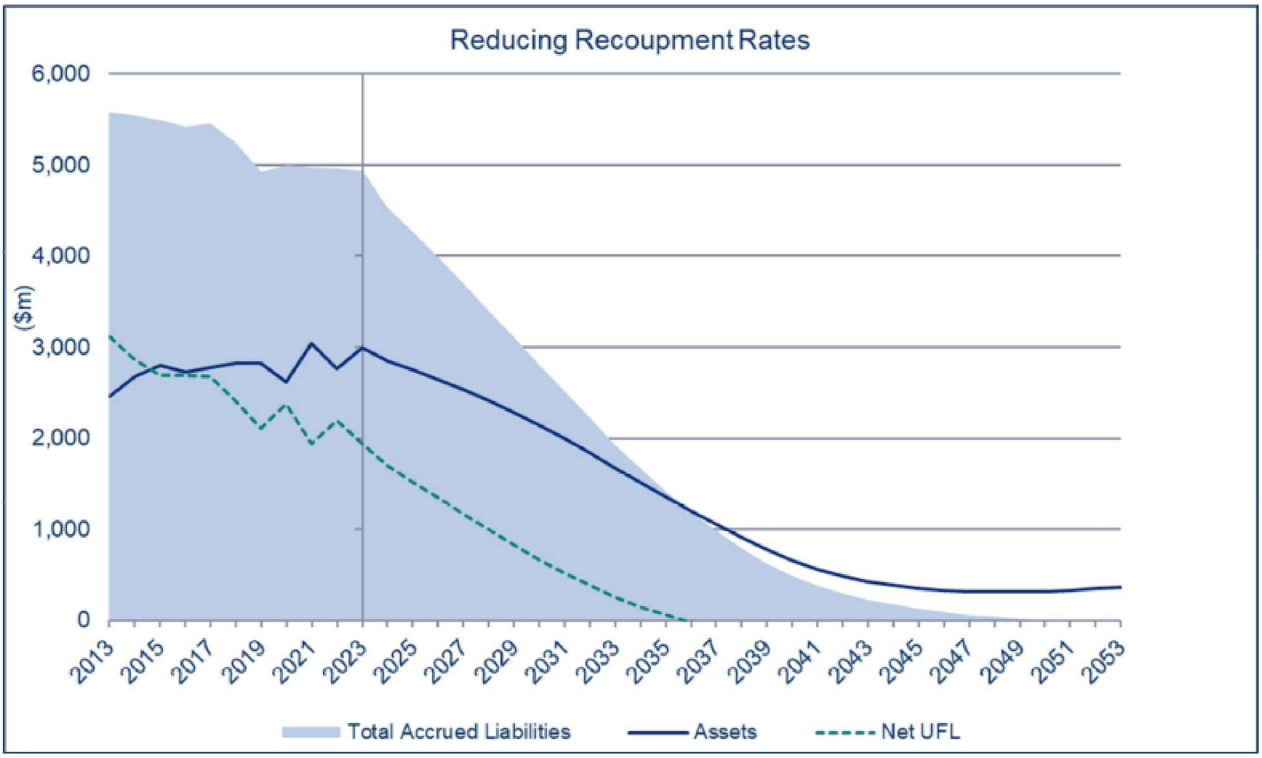
The first graph shows the projected financial position of GSS taking into account both funded and unfunded benefits, and assuming the current employer contribution and recoupment rates continue until the Scheme is fully funded, which is expected to occur in 2031. At that time, assets are projected to equal to total liabilities (both funded and unfunded). The dashed blue line shows the projected assets if employer contributions and recoupments were to continue at current levels indefinitely, while the solid blue line shows the projected assets assuming all employer contributions and recoupments cease from 1 July 2031. The graph illustrates that once the Scheme is fully funded, no further employer contributions are expected to be required. That is, the assets are projected to be sufficient to meet the promised benefits, even with no further contributions. In practice, it is likely that contributions and recoupments would continue slightly beyond the date full funding is achieved, in order to maintain a buffer against adverse experience.

The graph also shows the projected net unfunded liability (UFL) each year which represents the difference between the assets and the accrued benefit liabilities, with no allowance for minimum vested benefits. In the first graph the UFL reaches zero in about 2031.



The liabilities at 2023 have remained broadly in line with those at 2022, despite being expected to reduce. This is due to fewer members than expected retiring over the year, although this was partly offset by the lower than assumed salary increases.

The second graph illustrates an alternative scenario under which employer contribution and recoupment rates are reduced more gradually over time. This gradual reduction would maintain a buffer of 25% of surplus assets compared to accrued funded liabilities. In this illustration recoupments would reduce to 67% from 1 July 2023 and reach zero by 2040.



In this second graph the assets decline more rapidly from 2023 to 2031 than in the first graph (reflecting the lower recoupments and employer contributions), and the Net UFL does not reduce to zero until about 2036. Employer contributions and recoupments continue until 2040 in order to maintain a buffer against adverse experience.

We have also projected future cash flows. The table below shows the expected cash flows from Fund assets (i.e. excluding benefit payments which are funded via recoupments) together with the projected levels of assets, funded liabilities, unfunded liabilities and the net UFL, assuming no change in the current recoupment rates. All monetary figures are shown in millions:

Year Ended 30 June	Contributions (excluding recoupments)	Funded Benefit Payments	Investment Earnings	Assets	Funded Liabilities	Unfunded Liabilities	Net UFL
2023				2,995.3	2,131.7	2,808.8	1,945.2
2024	32.4	-314.0	171.3	2,885.0	1,957.0	2,586.0	1,658.0
2025	28.7	-246.6	166.6	2,833.6	1,839.8	2,428.8	1,435.0
2026	25.3	-241.7	163.5	2,780.8	1,717.7	2,270.2	1,207.1
2027	22.3	-234.4	160.5	2,729.1	1,593.2	2,105.2	969.3
2028	19.6	-225.4	157.6	2,680.9	1,468.2	1,935.1	722.4
2029	17.0	-217.5	154.8	2,635.3	1,341.6	1,763.7	470.0
2030	14.7	-204.7	152.4	2,597.7	1,218.8	1,592.0	213.1
2031	12.6	-197.5	150.3	2,563.1	1,094.2	1,425.7	-43.2
2032	10.7	-186.4	148.5	2,535.9	972.2	1,256.0	-307.7
2033	9.0	-186.5	146.8	2,505.2	841.1	1,081.8	-582.3
2034	7.5	-156.0	145.9	2,502.6	733.2	936.1	-833.3
2035	6.2	-149.9	145.8	2,504.7	624.0	792.0	-1,088.7
2036	5.0	-127.6	146.6	2,528.7	530.8	659.6	-1,338.3
2037	3.9	-116.0	148.4	2,565.0	443.3	541.0	-1,580.7
2038	3.1	-102.1	150.9	2,616.9	364.6	431.7	-1,820.6
2039	2.4	-86.7	154.5	2,687.1	296.7	328.9	-2,061.5
2040	1.8	-70.2	159.2	2,777.9	241.7	252.5	-2,283.7
2041	1.3	-56.8	165.0	2,887.4	197.2	187.1	-2,503.1
2042	0.9	-47.6	171.8	3,012.5	159.5	135.5	-2,717.5
2043	0.7	-37.8	179.6	3,155.1	129.5	98.3	-2,927.3
2044	0.5	-29.5	188.4	3,314.5	106.5	66.4	-3,141.6
2045	0.3	-32.5	197.9	3,480.2	78.7	48.2	-3,353.3
2046	0.2	-24.2	208.1	3,664.3	58.0	32.8	-3,573.5
2047	0.1	-20.4	219.2	3,863.3	40.0	22.0	-3,801.3
2048	0.1	-14.8	231.4	4,079.9	26.8	14.3	-4,038.8
2049	0.0	-12.4	244.4	4,311.9	15.4	8.4	-4,288.1
2050	0.0	-8.8	258.5	4,561.6	7.0	3.3	-4,551.3
2051	0.0	-3.4	273.6	4,831.8	3.8	1.2	-4,826.8
2052	0.0	-2.8	289.8	5,118.8	1.1	0.7	-5,117.0

8

Pension Scheme (PS)

Overview

This section considers both the member-financed (funded) and the pay-as-you-go (or unfunded) portions of the PS liabilities.

The financial position of the PS has improved over the year since the last actuarial investigation primarily due to the higher than assumed investment return for the year.

Financial Position for Accrued Funded Liabilities

The financial position of the PS as at 30 June 2023 is shown in the table below. The net asset value that has been used represents a portion of the assets allocated to the defined benefit funds by GESB as discussed in Section 5. The position as at 30 June 2022 is shown for comparison purposes.

The actuarial value of accrued liabilities shown in this table are calculated using the valuation process set out in Appendix B and the actuarial assumptions described in Section 4 and Appendix C, but with no allowance for future pension indexation.

Financial Position as at	30 June 2022 ($million)	30 June 2023 ($million)
Net value of assets	**91.7**	**90.4**
Accrued Funded Liabilities		
Current contributors*	2.6	1.5
Retirement pensioners	41.9	39.4
Invalidity pensioners	13.0	11.9
Widowed pensioners	12.1	11.5
Total accrued funded liabilities	**69.6**	**64.3**
Net financial position	**22.1**	**26.1**
Net financial position as % of funded defined benefit liabilities	**31.6%**	**40.6%**

* This includes the effect of minimum vested benefit underpin which occurs if contributory members leave the PS before retirement when they receive their own contributions plus interest (although in practice this has no impact).

The value of the accrued funded liabilities as at 30 June 2023 would be $14 million higher if allowance was included for future pension indexation on the funded benefits, reducing the surplus from $26.1 million to $12.1 million.

The total accrued liabilities (both funded and unfunded) for the PS are $1,361.2 million. This corresponds to a funding percentage expressed in terms of total accrued liabilities (both funded and unfunded) of 6.6% (6.3% in 2022). This highlights that the assets are not significant in comparison to the total accrued liability.

Sensitivity of Results

Given the insignificant role of the PS assets, we have considered sensitivity of results in terms of the change in funded liability arising from a 20% change in the pensioner mortality rates as well as a 1% per annum increase or decrease in the discount rate (linked to the investment return assumption). We have also considered decreasing the long term investment return assumption by 1% AND the value of net assets suddenly reduces by 10% (“Adverse assumptions”). The effects of these changes are shown below, with the impact of the change as a percentage of assets shown in brackets:

Scenario	Funded Liability as at 30 June 2023 ($million)	Change		Net financial position as % of funded defined benefit liabilities
		($million)	(% of assets)	
Main assumptions	64.3			40.6%
Increase investment return by 1% p.a.	59.9	-4.4	-4.9%	50.9%
Decrease investment return by 1% p.a.	69.4	5.1	5.6%	30.3%
Increase pensioner mortality rate by 20%	61.3	-3.0	-3.3%	47.5%
Decrease pensioner mortality rate by 20%	68.0	3.7	4.1%	32.9%
Adverse assumptions	69.4	5.1	5.6%	17.2%

In all the scenarios outlined above the PS is expected to remain in surplus.

The other significant assumption in respect of the PS is the rate of future pension increases. Currently, the full cost of pension increases is met via employer contributions and therefore does not impact the financial position. If the cost were to be met from fund assets the sensitivity to a 1% per annum increase in the assumed rate of future pension increases is approximately the same as a 1% per annum decrease in the investment return assumption.

Financial Position for All Liabilities (Past and Future Service)

The previous section considered funded liabilities only. However, a more comprehensive approach to assessing the PS’s long term financial position takes into account all past and future service by members. This approach also allows for future contributions, future benefit payments and future employer-sponsor payments. We have also allowed for indexation of pensions.

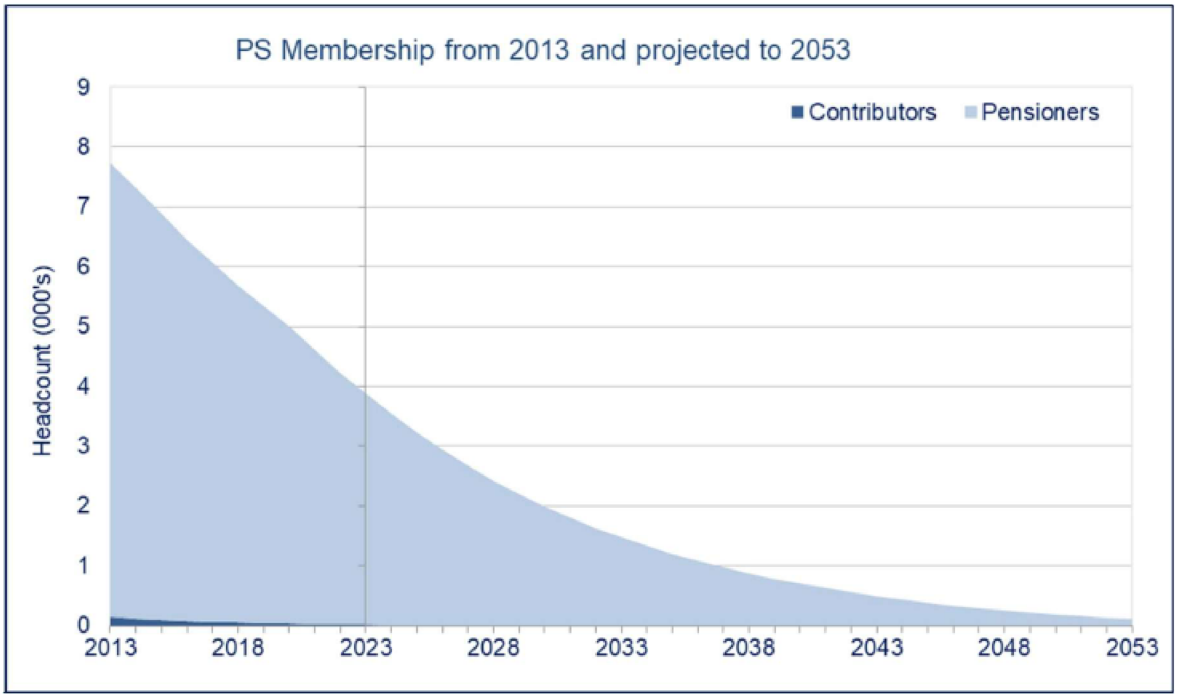
The following table shows the scheme’s valuation balance sheet which treats future contributions and recoupments as an asset and future benefits (based on both past and future service) as a liability. The future employer-sponsor payment includes the value of indexation of Funded and Unfunded benefits although in practice is it likely the fund assets will pay for some indexation of pensions in the future.

Actuarial Balance Sheet as at	30 June 2023 ($million)
Net value of assets	90.4
Value of future member contributions	0.2
Value of future employer-sponsor payments	1,297.0
Total assets	**1,387.6**
Value of past service benefits	1,361.2
Value of future service benefits	0.4
Total liabilities	**1,361.6**
Net position	**26.0**
Net financial position as % of all defined benefit liabilities	**1.9%**

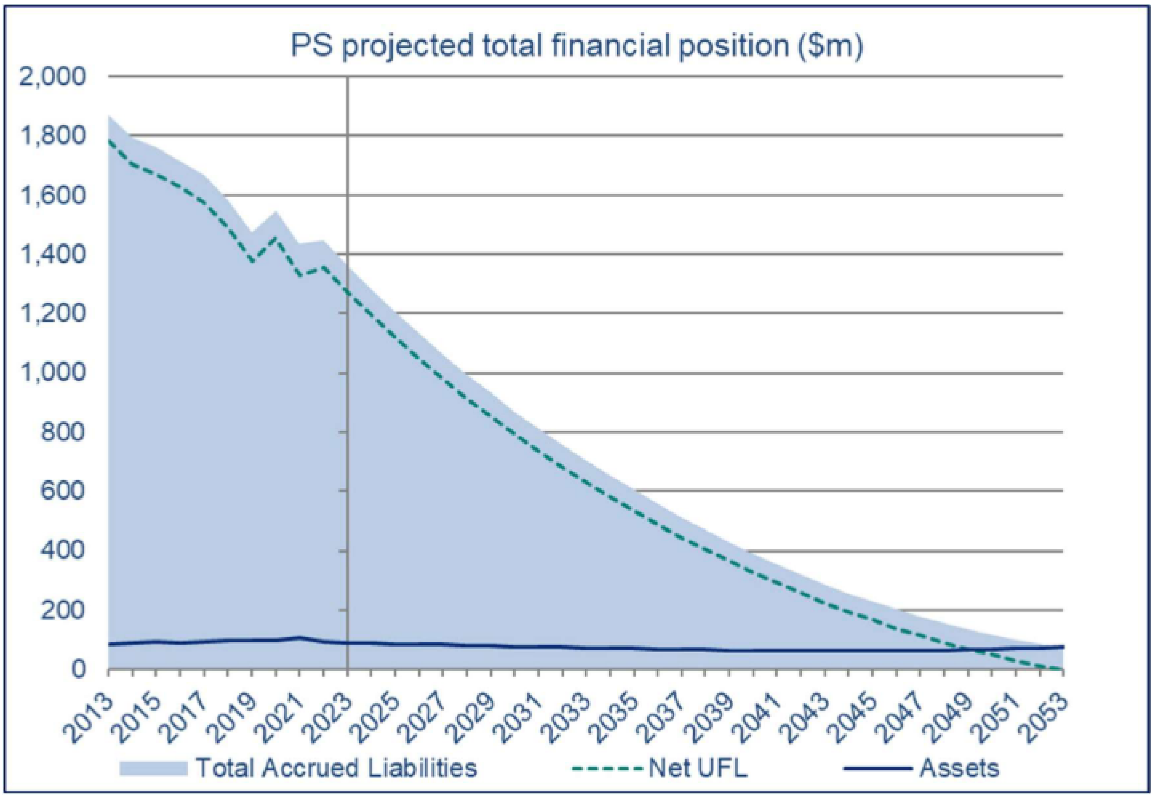
The Board may wish to explore possible methods by which some of the assets could be used to finance future indexation of the pensions.

Projections

The data shows a reduction in the membership of the PS, as would be expected for closed funds. The number of active members is now very small, and will continue to reduce in the future, as shown in the next chart:



We have projected the financial position of the PS to 2053, including data from the past ten years for comparison. All projections are based on the actuarial assumptions outlined in Appendix C. The following graph shows the projected financial position of the PS taking into account both funded and unfunded benefits, and assuming that indexation of the funded share of benefits will be met from scheme assets.



As expected, there is a steady decline in the accrued liability as the number of pensioners declines. The decrease in liabilities since 30 June 2022 is broadly in line with expectations, with the impact of the higher investment return assumption (resulting in a lower actuarial value of liabilities) being approximately offset by larger than assumed pension increases during the year.

We have also projected future cash flows. The table below shows the expected net cash flows together with the projected levels of assets, funded liabilities, unfunded liabilities and the net UFL. All monetary figures are shown in millions.

Year Ended 30 June	Net cash flows[1]	Investment Earnings	Assets	Funded Liabilities[2]	Unfunded Liabilities[3]	Net UFL
2023			90.4	64.3	1,296.9	1,270.8
2024	-6.9	5.2	88.7	61.1	1,221.9	1,194.3
2025	-6.9	5.1	86.9	57.8	1,149.4	1,120.3
2026	-6.8	5.0	85.1	54.7	1,079.0	1,048.6
2027	-6.7	4.9	83.3	51.6	1,011.9	980.2
2028	-6.6	4.8	81.5	48.5	947.8	914.8
2029	-6.5	4.7	79.7	45.6	886.7	852.6
2030	-6.3	4.6	78.0	42.7	828.4	793.1
2031	-6.2	4.5	76.3	40.0	772.8	736.5
2032	-6.1	4.4	74.6	37.3	719.8	682.5
2033	-5.9	4.3	73.0	34.7	669.0	630.7
2034	-5.7	4.2	71.5	32.2	620.5	581.2
2035	-5.6	4.1	70.0	29.8	574.1	533.9
2036	-5.4	4.0	68.6	27.4	529.8	488.6
2037	-5.2	4.0	67.4	25.2	487.4	445.2
2038	-5.0	3.9	66.3	23.1	446.9	403.7
2039	-4.8	3.8	65.3	21.1	408.3	364.1
2040	-4.6	3.8	64.5	19.2	371.7	326.4
2041	-4.4	3.7	63.8	17.3	337.0	290.5
2042	-4.2	3.7	63.3	15.6	304.1	256.4
2043	-4.0	3.7	63.0	14.0	273.2	224.2
2044	-3.7	3.7	63.0	12.5	244.2	193.7
2045	-3.5	3.7	63.2	11.1	217.2	165.1
2046	-3.3	3.7	63.6	9.8	192.1	138.3
2047	-3.0	3.7	64.3	8.6	168.9	113.2
2048	-2.8	3.8	65.3	7.6	147.6	89.9
2049	-2.6	3.8	66.5	6.6	128.3	68.4
2050	-2.4	3.9	68.0	5.7	110.7	48.4
2051	-2.1	4.0	69.9	4.9	94.9	29.9
2052	-1.9	4.1	72.1	4.2	80.8	12.9
2053	-1.7	4.3	74.7	3.5	68.4	-2.8

[1] Net cash flows comprise all contributions and recoupments less benefit payments. For this purpose it has been assumed that indexation of the funded share of benefits will be met from scheme assets rather than recoupments.

[2] Excluding value of future indexation.

[3] Including value of future indexation of funded and unfunded liabilities.

9

West State Super (WSS)

Overview

West State Super (WSS) was closed to new members on 15 April 2007 except for a special class of GSS members who continue to have the right to open a WSS account. New employees join GESB Super.

In addition to the Operational Risk Reserve and the Accumulation General Reserve which are held for all accumulation schemes, GESB holds a separate WSS Government Guaranteed Payments Reserve (WGGPR) to meet the cost of amounts payable as a result of the minimum benefit guarantee and the self-insured death and disability benefits of WSS. It is expected that WGGPR will be sufficient to meet future payments which are required to be made from this reserve. However, we note that there is significant uncertainty relating to the potential liability for 'top up' payments, in part due to the limited data which is maintained in relation to this aspect of self-insurance.

It is recommended that GESB continue to monitor the emerging self-insurance claims experience, particularly in relation to 'top up' payments, and investigate the possibility of maintaining additional data to assist in the quantification of this risk.

Current Financial Position

The financial position of WSS as at 30 June 2023 is shown in the table below with the position as at 30 June 2022 included for comparison purposes:

Financial Position as at	30 June 2022 ($million)	30 June 2023 ($million)
Net value of assets*	**17,903.2**	**19,087.5**
Member balances	17,861.7	19,046.7
WGGPR	41.5	40.8
Total liabilities	**17,903.2**	**19,087.5**
Net financial position	**Nil**	**Nil**

*Excluding Operational Risk Reserve and Accumulation General Reserve

The Vested Benefits of the WSS as at 30 June 2023 are shown in the table below. The position as at 30 June 2022 is shown for comparison. These figures are required for reporting purposes only.

Vested Benefit Position as at	30 June 2022 ($million)	30 June 2023 ($million)
Net value of assets	**17,903.2**	**19,087.5**
Member balances	17,861.7	19,046.7
Minimum Benefit Guarantee*	3.8	3.9
Total liabilities	**17,865.5**	**19,050.6**
Excess/(Deficit)	**37.7**	**36.9**

* If WSS had wound up on 30 June 2023, it would have had to pay guarantees to all members in full. This would have resulted in payments totalling $3.9 million in addition to the member balances.

As at 30 June 2023, the net value of assets exceeded vested benefits by $36.9 million.

West State Government Guaranteed Payments Reserve

The adequacy of each component of the WGGPR is examined below.

Minimum Benefit Guarantee (MBG)

When WSS began offering investment choice on 1 July 2001, it provided a guarantee to existing members at that date that their benefit payable at any time in the future would not be less than the figure at 30 June 2001 increased with the Perth CPI plus 2% per annum.

The guarantee has had a limited effect on “active” members, because these members’ ongoing contributions increase their balance, but not their guarantee. Consequently, the guarantee is likely to apply to very few active members in the future.

Even for “deferred” members, where no contributions were being made to increase their balance, for most members the increase in their account balance since 2001 has been well in excess of the increase in the guarantee.

However, the guarantee continues to be of relevance for those members who have a relatively small account balance. For those members, the impact of fees and charges may mean that their account balance is reducing, or increasing by less than the increase in the guarantee (which is not affected by fees and charges).

A cost to WSS is only incurred if members withdraw their money and, at that time, the guarantee exceeds their normal balance. The cost so far has been as follows:

Year Ended 30 June	Annual Cost ($million)	Cumulative Cost ($million)
2003	4.1	6.3
2004	2.3	8.8
2005	0.7	9.5
2006	0.2	9.7
2007	0.1	9.8
2008	0.2	10.0
2009	0.9	10.9
2010	0.7	11.6
2011	0.7	12.3
2012	1.1	13.4
2013	0.5	13.9
2014	0.3	14.2
2015	3.3	17.5
2016	2.2	19.7
2017	1.0	20.7
2018	1.3	21.1
2019	0.4	22.4
2020	0.9	23.3
2021	1.6	24.9
2022	0.3	25.2
2023	1.0	26.3

As described above, the majority of payments made as a result of the MBG are made to members with small account balances. For example, members with account balances of less than $3,000 make up almost 82% of accounts currently affected by the MBG, amounting to 56% of the $3.9 million which would have been payable if WSS were wound up as at 30 June 2023. The average top up required as at that date would have been $1,058.

If we consider all accounts for which there is a MBG liability, the average change in account balance during the year was an increase of $33. That is, even during a year of relatively strong investment performance (with the default My West State Super investment option earning 8.39%), the growth due to investment earnings was largely offset by deductions for fees and charges.

To give an idea of the maximum amount payable in relation to the MBG, we have assumed that:

- For members with an account balance of less than $3,000, the full value of the MBG will be payable. That is, we assume that these accounts will reduce to zero over time due to the impact of fees and charges;
- For members with an account balance of more than $3,000, we assume a 10% fall in account balances. That is, to allow for the impact of a shock to investment markets.

Under the above scenario, the amount payable as at 30 June 2023 would be approximately $8 million. The equivalent figure at 30 June 2022 was $9 million.

This represents the current value of MBG payments which would fall due in the future under a specific set of assumptions about future investment returns. Thus it is an alternative scenario to the $3.9 million payment that would have been due if WSS had wound up on 30 June 2023. We note that the above scenario is not considered likely as:

- We understand that in recent years GESB has made efforts to close out small accounts, in part to avoid these account balances reducing to zero. We assume that those efforts will continue;

- Although a 10% fall in investment markets is possible, it is unlikely that a large number of members would exit the scheme immediately following such a fall.

Therefore, we would regard $8 million as a conservative estimate of the amount which may be required to meet future payments required under the MBG provisions.

WSS Self Insurance

Until 30 June 2008, WSS self-insured all death and disablement benefits. From 1 July 2008, these have been outsourced to a third party insurer. However, WSS remains responsible for PPD claims on an ongoing basis and the run-off in respect of pre-existing conditions following the outsourcing decision. In addition, in the event of death or TPD WSS is responsible for any difference between the member's "statutory" insured component and the amount insured via AIA (subject to the member meeting certain conditions). These payments are referred to below as "top-up" payments.

The following table shows the claims paid from the insurance reserve since insurance was outsourced:

Year Ended 30 June	PPD ($million)	Death and TPD ($million)	Total ($million)
2009	0.641	1.494	2.134
2010	0.836	1.284	2.121
2011	0.296	1.386	1.683
2012	0.343	1.156	1.498
2013	0.106	0.263	0.368
2014	0.286	0.509	0.795
2015	0.429	0.378	0.807
2016	0.488	0.266	0.754
2017	0.069	0.508	0.577
2018	0.123	0.384	0.507
2019	0.108	0.746	0.854
2020	0.025	0.062	0.087
2021	0.492*	0.094	0.586
2022	0.040	0.310	0.350
2023	0.091	0.651	0.742

*Includes 7 previously outstanding payments (and interest on delayed payments) which were processed as part of a cleansing project.

It can be seen that the level of PPD claims in 2023 was higher than the prior year. If we look at the experience over the last five years the level of PPD claims has not decreased as expected and is very volatile.

The level of self-insured death and TPD claims were higher than the prior three years, with the data indicating that approximately $110,000 of the total was attributable to pre-existing conditions and $541,000 attributable to "top-up" payments.

In 2016 we undertook some analysis of claims experience and the likely impact of future "top up" payments: that is, the difference between the statutory insurance component and the externally insured component for each member.

That analysis suggested that the value of future "top up" claims (including PPD) was likely to be in the order of $10 million, with these claims expected to peak in around 2035. We believe this is still a reasonable high level estimate (albeit that approximately $3.5 million of claims have been paid since that time).

However, it should be noted that there were a number of uncertainties associated with this estimate; including availability of data, changes in future insurance level and assumptions made regarding salary increases and claim experience.

Given the above uncertainties, the length of time since the last review, and the continued emergence of payments in respect of death and TPD claims attributable to pre-existing conditions we would recommend allowing for a margin of at least 50% of the above amount (i.e. $15 million in total).

If GESB would like to have a better understanding of the potential risks associated with the "top-up" self-insurance payments we recommend some further analysis. Our 2019 report outlines the data that would be required for such analysis.

WSS Government Guaranteed Payments Reserve

Based on the above analysis, the minimum level of WGGPR would be:

Minimum Benefit Guarantee	$8 million
Self-Insurance payments	$15 million
Total	**$23 million**

Thus, the current reserve of $40.8 million in WGGPR is expected to be sufficient.

10

Actuary's Certification

Professional Standards and Scope

This report satisfies the requirements of Professional Standard No. 400 of the Institute of Actuaries of Australia. Professional Standard No. 400 relates to the preparation of reports commenting on the financial condition of defined benefit superannuation funds.

Use of Report

This investigation report should not be relied upon for any other purpose or by any party other than the Government Employees Superannuation Board. Mercer is not responsible for the consequences of any other use. This report should be considered in its entirety and not distributed in parts.

The advice contained in this report is given in the context of Australian law and practice. No allowance has been made for taxation, accountancy or other requirements in any other country.

Actuarial Uncertainty and Assumptions

An actuarial investigation provides a snapshot of a scheme's financial condition at a particular point in time, and projections of a scheme's estimated future financial position based on certain assumptions. It does not provide certainty in relation to a scheme's future financial condition or its ability to pay benefits in the future.

Future funding and actual costs relating to a scheme are primarily driven by the scheme's benefit design, the actual rate of salary inflation and any discretions exercised by the trustee of the scheme or the employer-sponsor. The scheme's actuary does not directly control or influence any of these factors in the context of an actuarial investigation.

A scheme's future financial position and the estimated long term costs depend on a number of factors, including the amount of benefits the scheme pays, the cause and timing of member withdrawals, plan expenses, the level of taxation and the amount earned on any assets invested to pay the benefits. These amounts and others are uncertain and unknowable at the valuation date, but are predicted to fall within a reasonable range of possibilities.

To prepare this report, actuarial assumptions are used to select a single scenario from the range of possibilities. However, the future is uncertain and a scheme's actual experience will differ from those assumptions. These differences may be significant or material. In addition, different assumptions or scenarios may also be within the reasonable range and results based on those assumptions would be different. For this reason, this report also shows the impact on the results of certain changes in assumptions.

Actuarial assumptions may also be changed from one valuation to the next because of mandated requirements, scheme experience, changes in expectations about the future and other factors. We did not perform, and thus do not present, an analysis of the potential range of future possibilities and scenarios.

Because actual scheme experience will differ from the assumptions, decisions about benefit changes, investment policy, funding amounts, benefit security and/or benefit related issues should be made only after careful consideration of alternative future financial conditions and scenarios, and not solely on the basis of a set of results.

Prepared by:

Esther Conway
Fellow of the Institute of Actuaries of Australia

22 August 2023

I have reviewed this report under Mercer’s professional Peer Review Policy. I am satisfied that it complies with the applicable professional standards and uses assumptions and methods that are suitable for the purpose.

Mark Samuels
Fellow of the Institute of Actuaries of Australia

Appendix A
Summary of Benefits

A summary of the main benefit provisions in respect of defined benefit members is set out below. For definitive statements, reference should be made to the *State Superannuation Act 2000*, the *State Superannuation Regulations 2001*, and other formal documents governing the Fund.

Gold State Super Benefits

GSS is a Defined Benefit scheme with benefits expressed as a multiple of salary.

Members' Contributions (% of salary)	Members may contribute to the scheme at rates of 3%, 4%, 5%, 6% and 7% of salary, although the average rate cannot exceed 5%.
Final Average Salary (FAS)	Average salary over the two years prior to retirement.
Normal Retirement Age	A member may retire at any time after age 55.

Normal Retirement Benefit	The retirement benefit is based on a percentage of FAS for each year of membership according to the member's contribution rate. These are as follows: Member Contribution Rate 3% 4% 5% 6% 7% Retirement Percentage (pa) 12% 16% 20% 24% 28%
Death Benefit	Upon the death of a member, the standard benefit payable is equal to the benefit the member would have received at age 60 had they remained in service to this age and continued to contribute at their average contribution rate. Limited benefits apply to members who choose not to undergo a medical examination, or where the death benefit is a result of a condition for which a limitation was imposed on their standard cover.
Total and Permanent Disability Benefit	On total disablement, the benefit payable is equal to the death benefit.
Partial Disability Benefit	On partial disablement, a reduced benefit is payable according to the assessed proportionate reduction in earning capacity.
Resignation Benefit	Upon resignation of the member, the accrued retirement benefit is preserved in the scheme until age 55. This benefit is then increased at the rate of the Perth CPI plus 1% p.a. until age 55. After age 55, it is increased at the rate of the Perth CPI + 2% p.a..

Transferred Benefits	Special benefits apply to members who transfer to Gold State Super from the Pension Scheme. These benefits are divided into two parts, being: • a Fund Share, being the return of a member's contributions to the Pension Scheme, increased by the Perth CPI plus 2% (this is met by the Fund); and • a State Share, being 12% of Final Salary for each year of Pension Scheme membership (assuming an average contribution rate of 5% of salary). For Funded employers, the cost of the employer-financed benefit (i.e. the second part above) is met at the time the member leaves service. Where the member has a deferred benefit, this means that an amount equal to the State Share cost of the benefit is paid into the Fund. This deferred benefit is then increased at the rate of the Perth CPI plus 1% p.a. until age 55, after which it increased by the Perth CPI plus 2% p.a.. As these increases are expected to be lower than the expected investment return, this arrangement is a potential source of surplus to the Scheme. For an Unfunded Employer the cost is met at the time the benefit actually falls due to be paid. The Recoupment Percentage does not apply to this benefit.
Recoupment Percentage	Funded employers contribute into the Scheme on an ongoing basis whereas unfunded employers do not. Irrespective of the employer, all members contribute. The Scheme meets the full cost of benefits when they fall due in respect of funded benefits. When unfunded benefits fall due the Scheme meets the full cost of these benefits, but recoups the unfunded portion from the Consolidated Fund. This recoupment payment is calculated by applying the Recoupment Percentage to the contributory service component of the benefit payment. In respect of a 5% contributor, the recent rates of employer contribution and recoupment (including allowance for expenses) have been as follows:

Year Ended 30 June	Employer Contribution (% of Salaries)	CRF Proportion of Contributory Service Entitlement
1992	12.00	70.59%
1993	12.00	70.59%
1994	12.33	72.42%
1995	12.67	74.42%
1996	13.00	76.42%
1997-2009	12.00	70.59%
2010	13.50	72.97%
2011-2012	15.00	75.00%

A proportionately adjusted employer contribution rate applies where members contribute at 3%, 4%, 6% or 7% of salary.

Since 2012-13, the recoupment rate has been reduced to 73.6% and all expenses are met separately.

Pension Scheme Benefits

This is a unit-based Scheme under which members purchase units of Pension. The benefit payable is determined according to the units purchased, length of service and final salary.

Members are required to nominate their retirement age, either 60 or 65.

Contributions	Members acquire units, the price of which depends on the member's age at the time and their nominated retirement age. The number of units which may be purchased can be varied. However, there is only a limited opportunity to purchase previously foregone units.
Determination	Members, who have elected to retire at age 65, may after attaining age 60 elect to "determine" their Pension. By doing so, their Pension is effectively determined as if they had retired at that date and no further contributions are required (except for units for which 26 fortnightly contributions have not been paid). For Pension Scheme purposes the member is then considered to have retired.
Normal Retirement Age	A member may retire at any time after age 55.
Normal Retirement Benefit	Members may retire from age 55 onwards, and the pension at this age is approximately 45% of salary at the date of retirement. The maximum pension is approximately 61% of salary at retirement provided retirement occurs at the nominated retirement age and provided the service requirements are met. These depend on the member's service history.
Commutation	On retirement, members can elect to commute part of their pension, namely the Fund Share or member-financed component.
Invalidity	In the event of invalidity of the member, a Pension is payable equal to the Pension the member would have received had the nominated retirement date been brought forward to the time of invalidity.
Resignation Benefit	Upon resignation of the member, the benefit payable is equal to a return of the member's contributions with compound interest at a specified rate. In addition, a "top-up" benefit is payable as if the contributor had been a member of WSS since 1 July 1992.
Spouse Pension	Upon the death of a pensioner a Pension is payable to a surviving spouse, equal to ⅔ of the Pension the pensioner had been receiving. Upon the death of a member before retirement age, the member's surviving spouse would receive ⅔ of the Pension the member would have received had the nominated retirement date been brought forward to the date of death.
Indexation	Pensions are indexed at April and October each year, in line with increases in the Consumer Price Index Perth.
Child Allowance	A child's allowance is paid upon the death of a contributor or pensioner, to each dependent child under the age of 16 or student child under the age of 25 years.
Minimum Benefit	Benefits payable from the Scheme to members are subject to a minimum of the benefit which would have been payable to the member from the West State Super Scheme, had the member been a member of that Scheme since its commencement.

Appendix B
Valuation Methodology

The actuarial valuation process has a number of stages as follows:

Stage 1

Initially, it is necessary to make a number of economic and demographic assumptions about the future. The economic assumptions take into account the current and likely future macroeconomic conditions while the demographic assumptions are based on the recent experience of similar public sector superannuation funds and, in particular, the recent experience of the Fund.

The economic assumptions have changed for this actuarial investigation. The demographic assumptions are based on a detailed analysis of the GSS and PS membership experience over the period to 30 June 2021 set out in report *GESB – Demographic Experience Investigation 2019-2021* dated 15 June 2022.

The complete actuarial basis is set out in Appendix C.

We also make assumptions regarding other items such as expenses and self-insured benefits payable on death and disablement.

Stage 2

Using these assumptions, the annual contribution and benefit cash flows into and out of the Fund are projected until the last current member or pensioner leaves the Fund.

Stage 3

These projected cash flows are then discounted to obtain present values at the valuation date.

Stage 4

The present values of the liabilities represent “best estimates” using the economic and demographic assumptions. However, it is also recognised that the Fund faces the possibility of cash flows arising from other requirements and/or future experience that may be adverse when compared to the “best estimates”. These future events may cause a financial strain on the Fund and it is therefore prudent to establish reserves within the Fund.

Actuarial Value of Accrued Liabilities

A similar process to the first three stages outlined above is used to calculate the actuarial value of accrued liabilities which is the total accrued funded superannuation liability of the Fund in respect of service up to the valuation date.

For GSS active members, the accrued liabilities on all forms of exit are based on the member's accrued multiple and final average salary at the valuation date.

For PS contributors, the accrued pension is based on the member's current unit entitlement and contributions paid to the date of exit as a proportion of total expected contributions.

In respect of GSS deferred members, PS determined pensioners and pensioners; the liability represents the fully accrued benefit. The liability for pensioners in the Pension Scheme also allows for reversionary pensions paid to spouses on the death of a member.

The method of apportionment of benefits between past and future membership satisfies the requirements of Professional Standard No. 402 of the Institute of Actuaries of Australia and is acceptable for the purposes of Australian Accounting Standard AASB 1056.

Vested Benefits

In this report we have also calculated the vested benefits of the Fund. This has been done on a notional 'leaving service' basis, assuming all members leave service on the valuation date and subsequently become entitled to their benefits either immediately (if over age 55) or on reaching age 55 (if under age 55).

The vested benefit figure shown in Appendix D is required for the purposes of accounting reporting only.

Appendix C
Details of Actuarial Assumptions

Economic Assumptions

The key economic assumptions adopted are shown in the table below. Assumptions for the previous investigation are also shown for comparative purposes.

Assumption (per annum)	As at 30 June 2022	As at 30 June 2023
Investment returns (after investment fees)	5.5% p.a.	6.0% p.a.
Salary increases	3.5% p.a.	3.5% p.a.
Perth CPI increases	3.0% p.a. for the first 3 years followed by 2.5% p.a. thereafter[1]	5.8% for the first year, 3.0% for the second year followed by 2.5% p.a. thereafter
Pension indexation	5.5% for the first year, 3.0% p.a. for the next 2 years followed by 2.5% p.a. thereafter[2]	3.0% p.a. for the first 2 years followed by 2.5% p.a. thereafter

[1] In addition to the rates shown in the table, we have allowed for the known increase which will be applied to Gold State deferred benefits at 1 July 2022, based on CPI of 7.6%.
[2] Different short term assumptions have been applied to Pension Scheme to reflect the timing of indexation of benefits and known CPI experience to March 2022

Setting the investment return

In order to set the discount rate, we first estimated the return from each of the major asset classes over the longer term.

Using economic forecasts, historical relationships between inflation and investment returns, historical performance of the asset classes, and the linkage between the returns from different asset classes we determined pre-tax and pre-management fee long term returns for each asset class as follows:

Estimated return by asset class	
Australian equities	7.4%
Overseas equities	6.7%
Private Equity	8.2%
Property	6.8%
Infrastructure	6.2%
Medium Risk Alternatives	6.5%
Investment Grade Bonds Global	3.9%
Defensive Alternatives	3.9%
Cash	3.2%

The expected long term return is then adjusted to reflect any expected short to medium term variations, taking into account current market conditions and the expected duration of liabilities. The estimated returns shown above are the long-term assumptions, and do not take into account the shorter term market adjustment.

Taxation

It is assumed that investment and contribution income of GSS and the PS remains exempt from income tax. Allowance is made in the assumed investment return for the inability of the schemes to claim any imputation credits.

No allowance has been made for:
- Superannuation surcharge, as members' benefits are reduced by a surcharge offset amount.
- Excess contributions tax, as this is payable by the member.
- Division 293 tax on contributions for those with incomes above the threshold, as this is payable by the member.

Superannuation Guarantee

Superannuation Guarantee legislation requires employers to provide a minimum level of superannuation benefits for their employees. No allowance has been made for future increases in the Superannuation Guarantee rate, as these are not expected to have a material impact on the benefits paid from the defined benefit schemes.

Demographic Assumptions

New Members

No allowance has been made for new defined benefit members. Both GSS and the PS are closed to new members.

Rates of Resignation and Retirement

Age	Resignation		Retirement		Exit from Deferred	
	Male	Female	Male	Female	Male	Female
30	-	-	-	-	1.0%	1.0%
35	2.8%	2.8%	-	-	1.0%	1.0%
40	2.4%	2.4%	-	-	1.0%	1.0%
45	2.0%	2.0%	-	-	1.0%	1.0%
50	1.7%	1.7%	-	-	1.0%	1.0%
55	-	-	6.4%	4.8%	6.0%	4.0%
60	-	-	15.2%	10.4%	10.0%	8.0%
65	-	-	26.3%	25.0%	10.0%	8.0%
70	-	-	30.0%	25.0%	10.0%	8.0%
75	-	-	100.0%	100.0%	100.0%	100.0%

Rates of Death and Disability

Age	Death		Disability	
	Male	Female	Male	Female
30	0.02%	0.01%	0.20%	0.10%
35	0.03%	0.01%	0.20%	0.10%
40	0.04%	0.02%	0.20%	0.10%
45	0.05%	0.03%	0.20%	0.10%
50	0.07%	0.05%	0.20%	0.14%
55	0.11%	0.07%	0.31%	0.28%
60	0.16%	0.09%	0.18%	0.24%
65	0.24%	0.14%	-	-
70	-	-	-	-

Pensioner Mortality Rates

Age	Retiree & Widow(er)		Invalid	
	Male	Female	Male	Female
55	0.193%	0.123%	-	-
60	0.233%	0.166%	-	-
65	0.369%	0.267%	0.967%	0.566%
70	0.715%	0.524%	1.547%	0.956%
75	1.373%	1.015%	2.631%	1.676%
80	2.941%	2.149%	4.694%	3.160%
85	6.323%	4.665%	8.677%	6.279%
90	12.226%	10.280%	15.193%	12.208%

The mortality rates shown above are before any mortality improvements have been applied. Mortality improvements apply from 2016 for retiree and spouse pensioners.

Future Mortality Improvements

Allowance is made for assumed future improvements (i.e. reductions) in pensioner mortality.

Improvements in mortality have been updated to reflect the short term (25-year experience) factors derived by the Australian Government Actuary and published in the Australian Life Tables 2015-17.

Age	Mortality Improvement	
	Male	Female
55	2.05%	1.80%
60	2.55%	2.16%
65	2.97%	2.43%
70	2.99%	2.40%
75	2.77%	2.33%
80	2.35%	2.03%
85	1.61%	1.45%
90	0.89%	0.80%
95	0.52%	0.34%
100	0.08%	0.00%
105	0.00%	0.00%

Proportion with Eligible Spouse

Age	Male	Female
50	77.4%	73.7%
60	79.2%	70.1%
70	73.5%	49.9%
80	67.7%	29.6%
90	33.9%	14.8%

Age Difference between Member and Spouse

It is assumed that male members are three years older than their spouse, and that female members are three years younger than their spouse.

Appendix D
AASB1056 Accrued Benefits Information

The following information is provided to assist the Fund to prepare financial reports and disclosure information as required by the Australian Accounting Standard AASB1056 “Superannuation Entities”.

As at 30 June 2023	Gold State Super ($’000s)	Pension Scheme ($’000s)	Total Defined Benefit ($’000s)
Net assets	**2,995,292**	**90,362**	**3,085,654**
Liability for accrued benefits*			
Funded	2,131,657	64,308	2,195,965
Unfunded	2,808,839	1,296,868	4,105,707
Total	**4,940,496**	**1,361,176**	**6,301,672**
Employer-sponsor receivable			
Current	414,598	147,990	562,588
Non-current	1,530,606	1,122,824	2,653,430
Total	**1,945,204**	**1,270,814**	**3,216,018**
Liability for vested benefits			
Funded	2,324,416	64,308	2,388,724
Unfunded	3,028,312	1,296,868	4,325,180
Total	**5,352,728**	**1,361,176**	**6,713,904**

* The liability for accrued benefits has been calculated without applying a minimum of vested benefits

AASB1056 specifies that defined benefit member liabilities are to be measured as the amount of investments needed to yield cash flows sufficient to meet accrued benefits as at the date when they are expected to fall due. Accrued benefits are defined as the benefits the Fund is obliged to pay in the future as a result of membership to the end of the reporting period.

AASB1056 also defines vested benefits as the value of benefits to which members or their beneficiaries would be entitled on voluntary withdrawal from the Fund, or on becoming entitled to a pension or deferred benefit, as at the reporting date.

The assumed investment return has been determined by reference to the investments held by the Fund in respect of the funded defined benefit liabilities.

Benefits payable in the future from the Fund in respect of current accrued membership are projected forward allowing for future salary increases, pension increases and indexation of deferred accounts, and are then discounted back to the reporting date at the assumed investment earning rate.

Assumptions regarding the future increases in accrued benefits, and the timing of when benefits will be paid, are those adopted for the actuarial investigation as at 30 June 2023. Further details can be found in Appendix C.

In the above table, allowance for future pension increases in respect of both the funded and unfunded portion of the Pension Scheme's liabilities is included in the unfunded accrued benefits amount. The vested benefits for active members in the Pension Scheme have been assumed to equal to the accrued benefits.

Defined benefit assets have been apportioned between Gold State Super and the Pension Scheme in proportion with the funded accrued benefit liabilities.

The defined benefit member liabilities change each year as a result of additional benefit accrual, benefit payments, interest cost, and gains and losses relative to the actuarial assumptions adopted (e.g. salary and pension increases, type and timing of benefit payments).

The sensitivity of the liability for accrued benefits to "reasonably possible changes" in the assumed investment earning rate, salary increase rate and the Perth CPI increase rate is demonstrated in the table below:

Key Assumption	Assumed at 30 June 2023	Reasonably Possible Change	Increase/(Decrease) in Accrued Benefits ($'000s)
Investment return	6.0% p.a.	+1.0% p.a.	(330,942)
		-1.0% p.a.	370,320
Salary increase	3.5% p.a.	+1.0% p.a.	95,953
		-1.0% p.a.	(88,833)
Perth CPI increase*	**Gold State** 5.8% for the first year, 3.0% for the second year, 2.5% p.a. thereafter **Pension Scheme** 3.0% p.a. for the first 2 years, 2.5% p.a. thereafter	+1.0% p.a.	260,799
		-1.0% p.a.	(235,432)

* Different short term assumptions have been applied to Gold State and the Pension Scheme to reflect the timing of indexation of benefits and known CPI experience to March 2023.

The weighted average term of the defined benefit liabilities (funded and unfunded) is shown in the table below:

As at 30 June 2023	Gold State Super	Pension Scheme
Term of liability	5.9 years	7.7 years

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