

LGIAsuper

Actuarial Valuation
as at 1 July 2018

29 November 2018

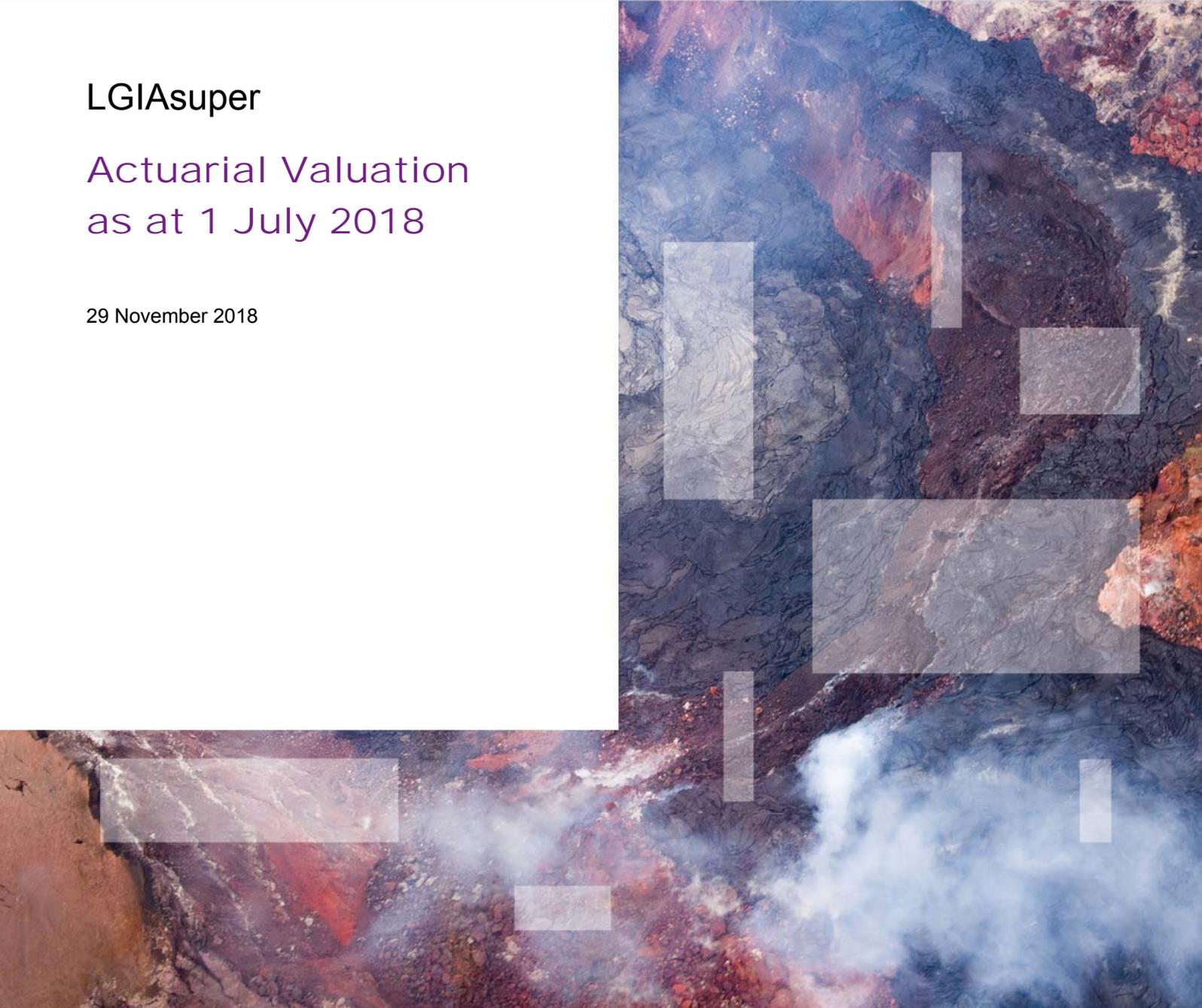


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Section 1: Purpose and Summary

LGIAsuper (“the Scheme”) provides benefits which are of the “*defined benefit*” type where benefits are defined by salary and period of membership. There are two defined benefit arrangements within the Scheme, both of which are closed to new members:

- Regional Defined Benefits Fund (Regional DBF)
- City Defined Benefits Fund (City DBF)

There are also a significant number of Accumulation members of the Accumulation Benefits Fund (ABF) within the Scheme. The ABF is open to new members. Additional accumulation benefits are also provided within the ABF for most Defined Benefit members.

A regular actuarial review of this Scheme is necessary to:

- examine the sufficiency of each DBF’s assets in relation to members’ accrued benefit entitlements
- determine the recommended employer contribution rate required to ensure that each DBF maintains a satisfactory financial position
- examine the suitability of the insurance and investment arrangements
- satisfy Clause 46 of the Trust Deed, and
- meet legislative and prudential standard requirements, in particular paragraph 23 of Prudential Standard 160 Defined Benefit Matters (“SPS160”).

This report has been prepared for the Trustee, LGIAsuper Trustee in my capacity as RSE Actuary to the Scheme. The effective date of this actuarial valuation is 1 July 2018.

This report has been prepared in accordance with Professional Standard 400 issued by the Institute of Actuaries of Australia dated June 2017. I also conducted the previous valuation as at 1 July 2015 with the results set out in a report dated 3 December 2015.

Reliance statement and data

This report is provided subject to the terms set out herein and in our engagement letter dated 8 June 2011 and the accompanying Terms and Conditions of Engagement. This report is provided solely for the Trustee’s use and for the specific purposes indicated above. It may not be suitable for use in any other context or for any other purpose.

Except where we expressly agree in writing, this report should not be disclosed or provided to any third party, other than as provided below. In the absence of such consent and an express assumption of responsibility, no responsibility whatsoever is accepted by us for any consequences arising from any third party relying on this report or any advice relating to its contents.

The Trustee may make a copy of this report available to its auditors, to employers who contribute to the Scheme and to any person to whom the Trustee may be required to provide a copy under relevant legislation, but we make no representation as to the suitability of this report for any purpose other than that for which it was originally provided and accept no responsibility or liability to the Trustee's auditors or the participating employers or any other parties in this regard. The Trustee should draw attention to the provisions of this paragraph when passing this report to these or any other parties.

In preparing this valuation, we have relied upon information and data provided to us orally and in writing by the Trustee and other persons or organisations designated by the Trustee. We have relied on all the data and information provided, including Scheme provisions, membership data and asset information, as being complete and accurate. We have not independently verified the accuracy or completeness of the data or information provided, but we have performed limited checks for consistency. The data and information we have relied upon is shown in Section 2.

In our opinion, all calculations are in accordance with requirements of applicable legislative requirements, and the procedures followed and the results presented conform to applicable actuarial standards of practice.

Employer Contributions

The further steps outlined later in this Section will also have a bearing on the future employer contribution levels required to each DBF.

Regional DBF

In the absence of any special circumstances, we recommend that each Regional DBF employer continues to contribute at the following rates for the three year period commencing 1 July 2018:

- 12.0% of salaries for members contributing at 6% of salary.
- 11.0% of salaries for members contributing at 5% of salary.
- Additional contributions to the ABF for Regional DBF members of 9.5% of the excess of Ordinary Time Earnings over the Regional DBF salary.

City DBF

In the absence of any special circumstances and subject to satisfying any industrial agreements, we recommend that each City DBF employer contributes at the following rates for the three year period commencing 1 July 2018:

- 14.0% of salaries (including the Occupational Account contribution) from 1 July 2018 to 31 December 2018.
- 0.0% of salaries (including the Occupational Account contribution) from 1 January 2019 to 31 December 2021.
- 14.0% of salaries (including the Occupational Account contribution) from 1 January 2022 onwards.

The contribution holiday for 3 years outlined above may be able to be extended, subject to the financial experience of City DBF over the next 3 years. Similarly if the financial experience of City DBF deteriorated significantly over this period, then it may be necessary for contributions to resume earlier than 1 January 2022.

Funding Status Measures

Vested Benefits

Vested benefits are the benefits payable if all members voluntarily resigned from service. As at the valuation date, the ratio of the net assets to vested benefits within each DBF is as follows:

- **Regional DBF** – 121.7%
- **City DBF** – 130.8%

The Scheme is in a “*satisfactory financial position*” if the net realisable value of the assets of the Scheme exceeds the vested benefits. At the valuation date of 1 July 2018, the net assets of the Scheme exceeded the vested benefits and the Scheme was in a satisfactory financial position. Each DBF was also in a satisfactory financial position as at the valuation date.

Assuming in respect of Regional DBF:

- a. the benefits described in the Trust Deed remain unchanged,
- b. employer contributions are paid at the recommended rate and
- c. the future experience is in accordance with the assumptions made in this actuarial valuation

then the net assets of Regional DBF should remain in excess of the corresponding vested benefits of the Regional DBF up to 1 July 2021.

Assuming in respect of City DBF:

- a. the benefits described in the Trust Deed remain unchanged,
- b. employer contributions are paid at the recommended rate and
- c. the future experience is in accordance with the assumptions made in this actuarial valuation

then the net assets of City DBF should remain in excess of the corresponding vested benefits of the City DBF up to 1 July 2021.

Similarly it is expected that investment returns will be credited to account balances of members through the unit pricing adopted within the ABF so that the assets of the ABF are sufficient to cover total account balances.

On this basis, the financial position of each DBF and the Scheme as a whole is expected to remain satisfactory up to 1 July 2021.

Present Value of Accrued Benefits

The present value of accrued benefits is the actuarial value (using the assumptions and methodology detailed in this report) of the expected future benefits payable from the Scheme to the current members and their dependents in respect of Scheme membership completed up to the date of the actuarial investigation.

As at the valuation date, the ratio of the net assets to the present value of accrued benefits within each DBF is as follows:

- **Regional DBF** – 121.0%
- **City DBF** – 139.7%

The net assets of the Regional DBF are adequate to cover the present value of the accrued benefits of Regional DBF members at the valuation date.

The net assets of the City DBF are adequate to cover the present value of the accrued benefits of City DBF members at the valuation date.

Minimum Benefits

Minimum Requisite Benefits (MRB) include member-financed benefits and the portion of the employer-financed benefit that is defined to meet Superannuation Guarantee requirements as specified in the Scheme's Benefit Certificate.

As at the valuation date, the ratio of the net assets to the MRB within each DBF is as follows:

- **Regional DBF** – 123.9%
- **City DBF** – 148.5%

The Scheme is "solvent" if the net realisable value of the assets of the Scheme exceeds the MRBs. As at the valuation date the net assets of the Scheme exceeded the MRBs and the Scheme was in a solvent financial position. Each DBF was also solvent as at the valuation date.

Shortfall Limit

As required under SPS 160, the Trustee has set Shortfall Limits for each DBF which are as follows:

- **Regional DBF** – 98.0%
- **City DBF** – 98.0%

We have reviewed each of these Shortfall Limits as part of this actuarial investigation and consider that the Shortfall Limit of 98.0% for City DBF remains appropriate.

However we recommend the Shortfall Limit of Regional DBF be re-assessed during 2019 having regard to the increasing significance of the minimum SG accumulation benefit in determining the vested benefit of members within the Regional DBF.

Defined Benefit Pensions

The City DBF pays defined benefit pensions to 2 lifetime pensioners with a further 7 contingent pensions which may become payable. Having regard to the financial position of the City DBF and the reserve set aside to pay these pensions, I consider there is a high probability that the Scheme will be able to pay the pensions as required under the Scheme's governing rules.

Superannuation Guarantee

Superannuation Guarantee obligations of employers are met for members by the minimum benefits provided under the Scheme. The latest Benefit Certificate is dated 3 August 2018 and the Benefit Certificate prior to that is dated 1 September 2014.

Funding and Solvency Certificates dated 10 September 2018 and 1 September 2014 have been issued to the Trustee corresponding to the above mentioned Benefit Certificates. The purpose of each Funding and Solvency Certificate is to specify the required Company contributions needed to fund the MRBs used to offset the Superannuation Guarantee charge. All necessary Funding and Solvency Certificates have been issued to the Trustee during the three years to 1 July 2018.

Based on the actuarial assumptions adopted in this valuation being borne out in practice, we expect that an actuary will be able to certify the solvency of the Scheme and each DBF in any Funding and Solvency Certificate required during the three-year period following the valuation date.

Investments

The current investment policy adopted by the Trustee is to have the assets supporting the Scheme's defined benefit liabilities invested 55% in return seeking assets such as shares and property and 45% in risk controlling assets such as cash and bonds.

The current investment policy is considered suitable to the defined benefit liabilities of Regional DBF and City DBF based on membership at 1 July 2018. While the current investment strategy is within a range of investment strategies considered suitable, it should be reviewed regularly (at least triennially) by the Trustee in the light of changes in membership and age profile. If required an Asset Liability Modelling study can be conducted.

The strong financial position of City DBF in particular provides an opportunity to consider whether a lower risk/return profile should be adopted for these assets. The Trustee may also wish to consider whether a separate investment strategy is warranted in respect of the lifetime and contingent pension liabilities of City DBF which are valued at \$1.0 million at the valuation date.

The Trustee regularly monitors the investment performance of the underlying investment managers and we recommend that this continues.

Insurance

In relation to Regional DBF, the total amount of insurance held to provide the unfunded portion of death and total and permanent disablement benefits and the fully insured temporary disablement benefit is considered adequate as at 1 July 2018. While this is the case, we would like to review the formula being used to determine sums insured during 2019.

In relation to City DBF, the total amount of insurance held to provide the unfunded portion of death and total and permanent disablement benefits is considered adequate as at 1 July 2018.

Further steps – Regional DBF

The financial position of the Regional DBF has strengthened over the valuation period with the coverage of vested benefits increasing from 111.9% at the last valuation to 121.7% at this valuation. The relatively strong investment returns over the valuation period have also resulted in accumulation benefits rising relative to the defined benefits they are compared against when determining vested benefits. This relationship can change depending on the prevailing investment returns and the investment strategy adopted.

While there is scope to increase the employer contribution rate to the Regional DBF if a period of low investment returns were to occur in future, this has not occurred to date, with the financial position during those periods being managed by the Trustee through the setting of the Accumulation Comparison Rate applied to some accumulation accounts. We recommend that the Trustee review the operation of the Accumulation Comparison Rate (including the smoothing policy, the past history of how returns have been released and how this should operate in future) in the light of the strengthening financial position of the Regional DBF.

Further steps – City DBF

The financial position of the City DBF has strengthened over the valuation period with the coverage of vested benefits increasing from 119.9% at the last valuation to 130.8% at this valuation.

In periods of low investment returns in the past, the employer has made additional contributions to support the financial position of the City DBF. The current financial position is strong and as a result we have recommended ceasing the employer contributions required for a period of time, with the period from 1 January 2019 to 31 December 2021 as an initial period which could readily be adopted, subject to any industrial agreements which may apply to these contributions.

There is also the opportunity to consider reducing the risk profile of the investment strategy supporting the defined benefits within the City DBF.

The Trustee may also wish to consider if a separate investment strategy is warranted for the City DBF's lifetime and contingent pension liabilities and whether a lower risk profile than currently should be adopted. I also recommend that the Trustee review the smoothing policy applied to determine the crediting rates applied to some additional accumulation benefits held within City DBF.

Experience since 1 July 2018

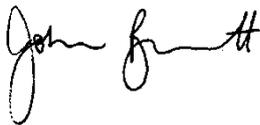
Investment markets have faced some periods of negative returns since the valuation date of 1 July 2018, particularly in October and November 2018. Returns from 1 July 2018 to 23 November 2018 have been approximately -0.7% for the two DBFs.

Given the strong financial positions of each DBF at 1 July 2018 we do not consider any of the recommendations in this report need to be reviewed in the light of this recent experience.

Next Valuation

The next valuation should be held no later than 1 July 2021.

Vested Benefits coverage within each DBF and for the Scheme in total should continue to be monitored at least annually and more frequently if warranted.



John Burnett
Fellow of the Institute of Actuaries of
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29 November 2018

Review: NW/JD

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Section 2: Background and Data

The Scheme was initially established under a Trust Deed first made in 1995 as amended subsequently. The Scheme was known as the Queensland Local Government Superannuation Scheme. On 1 July 2011, the City Super Fund merged with the Scheme.

On 1 July 2017 the Scheme was renamed LGIAsuper.

The Scheme is a regulated complying superannuation fund under the SIS Act and for taxation purposes.

Summaries of the main benefits of Regional DBF and City DBF which are the two defined benefit sections of LGIAsuper are included in Appendix A of this report.

Previous Recommendations

I conducted the previous valuation as at 1 July 2015 with the results set out in a report dated 3 December 2015. Employer contributions paid to each DBF over the three year period ending 1 July 2018 have been in line with the recommendations made at the previous valuation, as follows:

- **Regional DBF**
 - 12% of salaries for members contributing at 6% of salaries, and
 - 11% of salaries for members contributing at 5% of salaries, and
 - Additional contributions to the ABF for Regional DBF members of 9.5% of the excess of Ordinary Time Earnings over the Regional DBF salary.
- **City DBF** – 14.0% of salaries (inclusive of 3% Occupational Account contribution)

As City DBF includes some lifetime pension liabilities, an annual actuarial valuation of the Scheme would normally be required. However APRA has provided the Trustee with an exemption from this requirement dated 24 December 2013 which allows a triennial actuarial valuation to be conducted in the normal course of events. This valuation is being conducted as at 1 July 2018 on this basis.

Changes to benefits since the last valuation of the Scheme

There have been no changes to the benefits of Regional DBF and City DBF members considered in this valuation over the three years ending 1 July 2018.

Sources of Information

We have relied on the administrative records at 1 July 2018, as currently stored on LGIAsuper's administration system. We note that a new administration system has been adopted since the previous valuation.

We have relied on the audited accounts from Pricewaterhouse Coopers for the three years ending 1 July 2018 together with information set out in the Scheme's annual report in each of these years.

Where possible the information provided has been checked for reasonableness and is considered suitable for the purposes of this investigation.

Data

The membership details are summarised in Appendix B. In brief the membership as at 1 July 2018 was as follows:

- **Regional DBF** – there were 1,972 Defined Benefit members with total salaries of \$142.2m
- **City DBF** – there were 160 Defined Benefit members with total salaries of \$12.0m, 2 crystallised Defined Benefit members over age 70, 2 lifetime pension members and 7 contingent pension members.

In total there were 2,143 members as at 1 July 2018, of which 2,134 were active Defined Benefit members with total salaries of \$154.2m.

We have checked a sample of the membership data for internal consistency and are satisfied as to the accuracy of this sample.

Since the previous valuation, the average attained age of Regional DBF members has increased from 56.4 years to 57.6 years.

Since the previous valuation, the average attained age of City DBF members has increased from 54.4 years to 56.1 years.

All members of the Regional DBF and City DBF at the current valuation date were present at the previous valuation. Salaries over the period since the last valuation have increased on average by 2.1% p.a. for Regional DBF members and 2.3% p.a. for City DBF members.

Section 3: Assets and Investment Strategy

Accounts

We have been supplied with accounts covering the twelve month periods to 1 July 2016, 1 July 2017 and 1 July 2018. These accounts were audited by PricewaterhouseCoopers and no material qualifications were identified in the audit report dated 28 September 2018. These accounts have been combined to produce the consolidated accounting statement for the period 1 July 2015 to 1 July 2018 shown in Appendix C to this report for each DBF.

Fair value of Assets or Net Assets

The fair value of assets or net assets of the Scheme at 1 July 2018 are summarised below:

	\$'000
Total Investments	11,985,007
Current Assets	84,307
Current Liabilities	(339,360)
Net Assets	11,729,954

We have relied on the net asset figure of \$11,729,954,000 as shown in the audited financial statements as at 30 June 2018. This can be broken down into the Accumulation Benefits Fund, Regional DBF, City DBF and related reserves as follows:

	\$'000
ABF account balances	10,529,171
Regional DBF assets	1,036,324
City DBF assets	98,141
General Reserve	31,982
ABF Operational Risk Reserve (ORR)	29,980
Regional DBF ORR	4,018
City DBF ORR	338
Net Assets	11,729,954

We have adopted the net asset value of \$1,036.3 million for Regional DBF and \$98.1 million for City DBF in determining the contribution recommendations and Funding Status Measures at the valuation date.

The Trustee maintains Operational Risk Reserves (ORR) to meet the Operational Risk Financial Requirement as shown in the table above. The target ORR for both Regional DBF and City DBF is a minimum of 30 basis points. The actual ORRs for both DBFs at 1 July 2018 are above these targets.

Accumulation benefits – Member Investment Choice

Members can choose from an extensive range of investment options in which to invest their accumulation accounts. The investment options are unitised, with movements in unit prices reflecting the actual investment returns (net of fees and taxes) from the underlying assets.

Defined Benefit Liabilities in general

The level of the Defined Benefit liabilities does not bear the same direct relationship with the defined benefit assets as exists with accumulation liabilities (where the assets and liabilities are generally matched).

The Defined Benefit liabilities reflect membership and salary growth, whereas the supporting assets depend on a range of factors including:

- i. the level of employer contributions, and
- ii. the level of investment returns.

In this case it is the employers who bear the investment risk as the level of contributions required depends on the level of investment returns achieved.

An investment strategy to provide defined benefits which is framed to take a long-term view will often adopt relatively high levels of equity investment in order:

- i. to secure attractive long term investment returns, and
- ii. to provide an opportunity for capital appreciation and dividend growth, which gives some protection against inflation (as benefits are linked to salary growth which is also influenced by inflation).

The main constraint is that potential fluctuations in asset values mean the total asset value could fall below the level of Vested Benefits, placing the DBF concerned and possibly the Scheme in an unsatisfactory financial position.

While the impact of a sudden sharp fall in asset values can be limited by maintaining a buffer of assets over and above the level of vested benefits, the level of the buffer may never be sufficiently high to safeguard against all possible investment outcomes. However, the buffer should be at a level where the risk of the asset values falling below the level of vested benefits under a particular investment strategy is acceptable to the Trustee and the sponsoring employers.

In this regard, a lower buffer may be acceptable where the sponsoring employers are willing and able to accept short-term variations in contributions as part of underwriting the defined benefits of the DBF they participate in. In this case, short-term variations in employer contributions may result from:

- i. reducing a buffer that has grown too large, or
- ii. rebuilding a buffer that has fallen or become negative.

An alternative to consider if a DBF does not have a sufficient asset buffer above the level of Vested Benefits is to adopt a more conservative investment strategy. While this may reduce short-term fluctuations in asset values, it is also likely to reduce long-term returns and hence result in increased employer contributions in the long-term. In summary, a balance needs to be achieved between these short-term and long-term considerations in funding the defined benefit liabilities.

Regional DBF liabilities

The Regional DBF provides 'greater of' benefits where the defined benefit is compared to one or more accumulation benefits and the higher amount is the benefit payable.

As the level of the accumulation benefit depends on the investment strategy adopted, this affects how the defined benefit and accumulation benefit correspond to each other and so is an important consideration when reviewing the investment strategy adopted under such a design.

City DBF liabilities

The City DBF provides defined benefits which are not compared to one or more accumulation benefits and so the same considerations do not apply as outlined for Regional DBF.

Defined Benefits – Investment Objective for Regional and City DBFs

The Trustee's principal investment objective for both Regional DBF and City DBF is to achieve returns in excess of salary inflation plus 1.5% p.a. over rolling 3 year periods.

We have taken account of the investment objectives of the DBFs and the investment guidelines under which the Scheme's investment managers operate in setting our actuarial assumptions in Section 4 of this report.

Investment Strategy for Regional and City DBFs

In order to meet the investment objectives set for the Regional and City DBFs, the Trustee has adopted a specific long term strategic allocation and ranges for each asset class as shown in the table below. The strategic asset allocation and ranges shown below were set out in the Annual Report as effective at 1 July 2018.

Asset Class	Strategic Asset Allocation %	Range %	Actual Allocation as at 1 July 2018 %
Australian shares	9.0	0.0 to 19.0	9.6
International shares	21.0	11.0 to 31.0	25.6
Property	15.0	5.0 to 25.0	14.5
Infrastructure	10.0	0.0 to 20.0	5.6
Return-seeking assets	55.0		55.3
Diversified Fixed Interest	32.5	22.5 to 44.5	30.8
Alternatives	12.5	2.5 to 22.5	8.7
Cash	0.0	0.0 to 5.0	5.2
Risk-controlling assets	45.0		44.7
Total	100.0		100.0

Suitability of Investment Strategy for Regional and City DBFs

At the valuation date of 1 July 2018, the average age of the employed members with defined benefits is 57.6 years within Regional DBF and 56.1 years within City DBF, indicating that a medium-term time horizon should still apply for investment purposes.

Given the age profile and the number of members expected to retire over the next three years as outlined in Appendix B, it is expected that benefit outgo will exceed contribution inflow to each DBF. Within the broader Scheme, the cash-flow to the ABF is likely to be positive over most periods and the Trustee is able to take this into account when considering how the liquidity needs of each DBF will be met.

The current investment strategy of each DBF is within a range considered suitable but should be reviewed regularly (at least triennially) by the Trustee in the light of changes in membership and age profile.

Given the strong financial position of City DBF and the purely defined benefit nature of the main benefits in that DBF, there is the opportunity to consider reducing the risk profile of the investment strategy supporting the defined benefits within the City DBF in particular. However this should also be considered regularly for Regional DBF too.

The Trustee regularly monitors the investment performance of the underlying investment managers and it is recommended that this continues.

Suitability of crediting rates adopted in Regional DBF

The crediting rate applied to the Minimum SG accumulation benefit outlined in Appendix A is based on the actual investment returns (net of fees and taxes) from the underlying assets. I consider this crediting rate policy to be suitable.

The crediting rate known as the Accumulation Comparison Rate applied to other accumulation benefits held within the Regional DBF is subject to smoothing. The Trustee also has regard to the financial position of the DBF when setting this rate. While I consider this crediting rate policy is also suitable, I recommend that the Trustee conduct a review of the smoothing approach to confirm if it is still warranted. When conducting this review, I recommend the Trustee also consider the past history of how returns have been released under the Accumulation Comparison Rate and how this should operate in the future.

Suitability of crediting rate adopted in City DBF

The crediting rate applied to some additional accounts of members held within the City DBF is subject to smoothing using a 3 year average. I recommend that the Trustee conduct a review of the smoothing approach to confirm if it is still warranted.

Considerations relating to Lifetime Pensions in City DBF

The City DBF pays lifetime pensions to 2 lifetime pensioners and there are also 7 contingent lifetime pensions which may become payable. The liability relating to the pensioners and contingent pensioners is valued at \$1.0 million as at 1 July 2018.

The assets supporting this liability are invested in the same way as the other defined benefits of the City DBF which has a strategic asset allocation to return-seeking assets such as shares and property of 55% with the remainder invested in bonds and cash.

The City DBF has sufficient liquidity to make pension payments from regular cash-flows or the ready sale of the DBF's assets from time to time. It is also in a strong financial position as at 1 July 2018. On this basis, I consider the assets held by the City DBF to be suitable for meeting the future expected benefit payments for the pension members of the DBF at the present time.

However the Trustee may wish to consider whether a separate investment strategy is warranted in respect of these pension liabilities and whether a lower risk profile than currently should be adopted.

Section 4: Valuation Method, DBF Experience and Actuarial Assumptions

To carry out an actuarial valuation of the defined benefit liabilities of each DBF, it is necessary to decide on:

- the valuation method to be adopted, and
- the assumptions as to the factors which will affect the cost of the benefits to be provided in the future.

4.1 Attained Age funding method

The funding method adopted at the previous valuation was the Attained Age method. This funding method remains appropriate for each DBF, given the declining nature of the active/employed section of each DBF. We have retained the Attained Age method for this valuation.

Under the Attained Age funding method, the calculation of the employer contribution consists of two parts.

The **first part** is the “normal cost”. The total normal cost is expressed as a level % of expected future salaries and is equal to the sum of:

- the cost based on actuarial assumptions of the benefits accruing to the members in respect of all future membership following the valuation date, plus
- the cost of employer funded insurance premiums and administration expenses as well as resulting cost of contributions tax.

The **second part** is the adjustment to the employer contribution as a result of amortising any surplus or deficiency at the valuation date arising from the funding of past service benefits.

The contribution rate required to maintain vested benefits coverage above 100% in three years' time based on the valuation assumptions is also considered.

4.2 Regional DBF - Experience and Valuation Assumptions

It is important when setting the valuation assumptions to examine the experience of the Regional DBF to see whether the previous assumptions have been borne out in practice. A summary of the major items of experience over the last three years is given in the following paragraphs.

Further details on the valuation assumptions adopted for Regional DBF are set out in Appendix D.

Investment Return

The assumption for investment returns at the last valuation was 5.5% p.a. (net of administration and investment fees and investment tax). The Regional DBF's investment returns over the three years to 1 July 2018 (net of administration and investment fees and investment tax) have been as follows:

Year Ending 30 June	Investment Return (net of administration and investment fees and investment tax)
2016	4.12%
2017	6.90%
2018	8.14%
Average over the 3 years	6.4% p.a.

The average investment return over 3 years of 6.4% p.a. was 0.9% p.a. higher than the assumed rate. This has had a positive effect on the Regional DBF's financial position.

For this valuation, we have adopted a lower long term future investment return equal to 4.8% p.a. (net of administration and investment fees and investment tax). This assumption is consistent with the Trustee's current investment strategy having regard to expected returns in the medium-term under Willis Towers Watson's investment model.

Salary Inflation

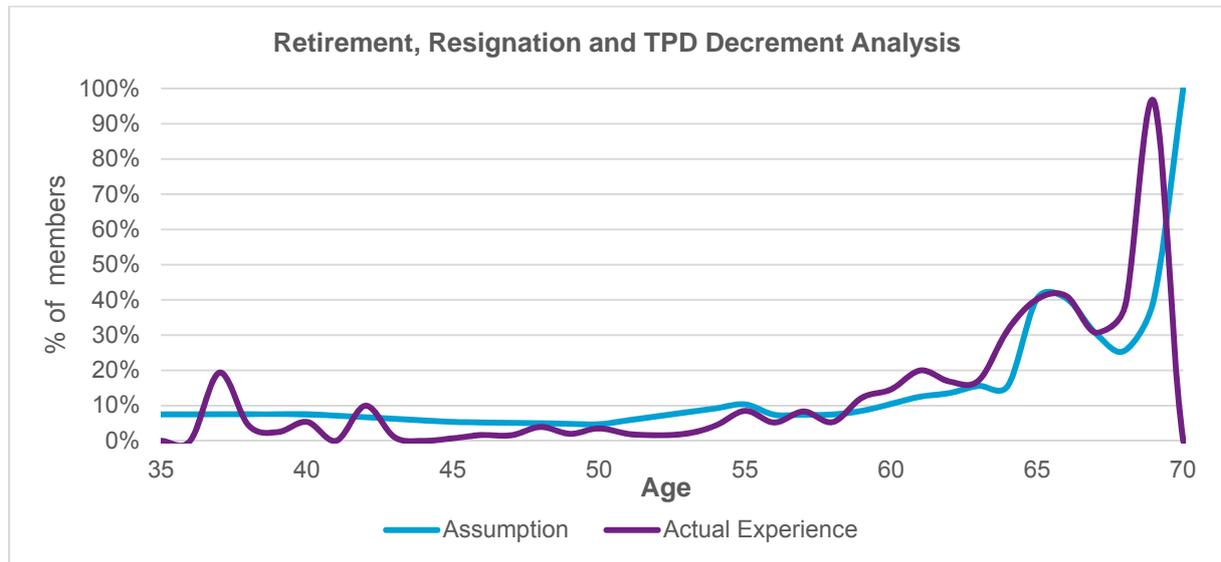
The assumed rate of salary inflation was 4.0% p.a. at the last valuation. The average rate of salary growth for members who were present at both the last and current valuation dates was 2.1% p.a. The actual increase in salary growth was 1.9% p.a. lower than the assumed rate. This has reduced the growth in accrued liabilities of the Regional DBF, which has had a positive effect on the Regional DBF's financial position.

At this valuation we have adopted a revised assumption of 3% p.a. for salary inflation.

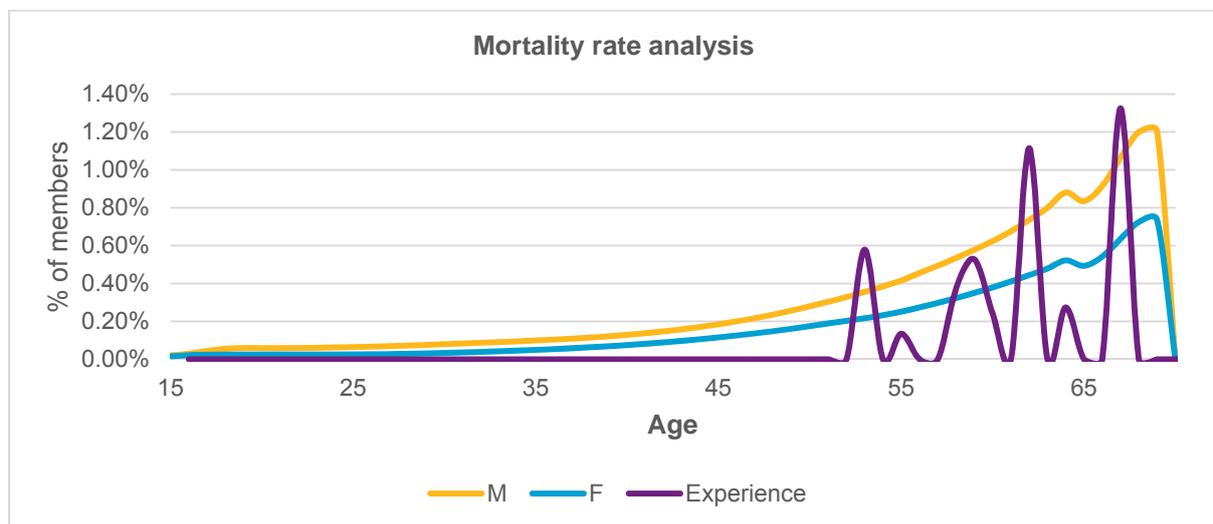
Over the long term, it is the "gap" between the investment return (net of tax) and salary inflation assumption that is important when valuing member's liabilities. In this valuation we have increased the "gap" of 1.5% p.a. used in the previous valuation to 1.8% p.a. Over the review period the actual "gap" was 4.3% p.a. which has had a significant positive impact on the financial position of the Regional DBF.

Rates at which Members Leave Service

We have analysed the rates at which members resign, retire and leave due to total and permanent disability from the Regional and City DBF's and compared the actual experience to that expected based on the previous valuation assumptions. A summary of the comparison is set out in the graph below:



In addition, we have analysed the rates at which members die compared to the assumed rate at the last valuation. A summary of this comparison is set out in the graph below:



While there is some variation between assumed and actual exits at some ages, this is not considered sufficient to vary these assumptions. As a result, we have maintained the same exit assumptions as used at the previous valuation.

4.3 City DBF - Experience and Valuation Assumptions

It is important when setting the valuation assumptions to examine the experience of the City DBF to see whether the previous assumptions have been borne out in practice. A summary of the major items of experience over the last three years is given in the following paragraphs.

Further details on the valuation assumptions adopted for City DBF are set out in Appendix D.

Investment Return

The assumption for investment returns at the last valuation was 5.5% p.a. (net of administration and investment fees and investment tax). The City DBF's investment returns over the three years to 1 July 2018 (net of administration and investment fees and tax) have been as follows:

Year Ending 30 June	Investment Return (net of administration and investment fees and investment tax)
2016	4.12%
2017	6.90%
2018	8.14%
Average over the 3 years	6.4% p.a.

The average investment return over 3 years of 6.4% p.a. was 0.9% p.a. higher than the assumed rate. This has had a positive effect on the financial position of the City DBF.

For this valuation, we have adopted a lower long term future investment return equal to 4.8% p.a. (net of administration and investment fees and investment tax). This assumption is consistent with the Trustee's current investment strategy having regard to expected returns in the medium-term under Willis Towers Watson's investment model.

Salary Inflation

The assumed rate of salary inflation was 4.0% p.a. at the last valuation. The average rate of salary growth for members who were present at both the last and current valuation dates was 2.3% p.a. The actual increase in salary growth is 1.7% p.a. lower than the assumed rate, which has had a positive effect on the City DBF's financial position.

At this valuation we have adopted a revised assumption of 3.0% p.a. for salary inflation.

Over the long term, it is the "gap" between the investment return (net of tax) and salary inflation assumption that is important when valuing member's liabilities. In this valuation we have increased the "gap" of 1.5% p.a. used in the previous valuation to 1.8% p.a. Over the review period the actual "gap" was 4.1% p.a. which has had a significant positive impact on the financial position of the City DBF.

Pensioner Mortality

For this valuation, we have assumed that the mortality relating to lifetime and contingent pensions is in line with Australian Life Tables 2010-2012, the most recently available Australian life tables, including 25 year improving mortality factors.

Pension increases

There are three different categories of lifetime pensioners with different indexation provisions as detailed in Appendix A. Pensions that are indexed in line with CPI have increased since the last valuation as follows:

Year Ending 30 June	CPI Pension Increases
2016	1.5%
2017	1.8%
2018	1.7%
Average over the 3 years	1.7% p.a.

We have assumed future indexation of pensions indexed in line with CPI to be at 2.5% p.a. which is in line with our long term inflation assumption at the valuation date.

Over the long term, it is the “gap” between the investment return and pension increase assumptions which is important when valuing the pension liabilities. For this valuation, we have adopted an investment return assumption of 5.4% p.a. (gross of tax, net of fees) on pension assets, resulting in an assumed a “gap” of 2.9% p.a. for CPI-indexed pensions.

Rates at which Members Leave Service

As outlined in section 4.2 we have retained the assumptions used at the previous valuation based on the total DBF analysis of experience over the 3 years to the valuation date.

4.4 Summary of Valuation Assumptions

A summary of our valuation assumptions is set out in Appendix D of this report.

Section 5: Insurance Arrangements

Adequacy of Insurance

The Scheme currently has death, total and permanent disablement (TPD) and income protection insurance with OnePath.

The insurance coverage within each DBF is considered adequate if the net assets are sufficient to cover the Death and TPD benefits after any insured components have been allowed for.

The following table is based on the information provided to us and shows the adequacy of the insurance cover within each DBF at 30 June 2018:

	Regional DBF	City DBF	
	Death and TPD \$M	Death \$M	TPD \$M
Lump Sum Death and TPD Benefits (A)	1,038.6	98.7	95.6
Less Aggregate Group Life Insurance (B)	96.7	23.1	20.0
Exposure (A – B)	941.9	75.6	75.6
Net Assets (excluding assets in respect of Pensioners)	1,036.3	97.1	97.1

For each DBF as at 30 June 2018, the net assets are sufficient to meet the uninsured portion of the death and TPD benefits. The temporary disablement benefit provided by Regional DBF is also insured under an insurance policy.

On this basis the insurance coverage under both DBFs is considered to be adequate at the valuation date. While this is the case, we would like to review the formula being used to determine sums insured under Regional DBF during 2019.

Section 6: Solvency and Funding Status Measures

There are several methods used to assess the current financial situation (i.e. funding status measures) of the Scheme. These measures are dealt with below.

6.1 Regional DBF

Vested Benefits

Under SPS 160, a fund (or a section of a fund) is in a “satisfactory” financial position if the assets cover the corresponding Vested Benefit entitlements of members.

The Vested Benefits represent the benefits payable on the review date if all members voluntarily resigned (if under 55) or retired (if over 55). The following table shows the progression of the Vested Benefits Index for the Regional DBF over the review period.

	Last Valuation \$M	This Valuation \$M
Net Assets (a)	1,120.0	1,036.3
Vested Benefits* (b)	1,000.8	851.6
Vested Benefits Index (a)/(b)	111.9%	121.7%

* Vested benefits have been reduced by offset accounts in the table above

As at 1 July 2018, the net assets exceeded the Vested Benefits and so the Regional DBF was in a satisfactory financial position. The ratio of the net assets to the Vested Benefits was 121.7%. At the previous valuation, this ratio was 111.9%. The ratio has improved mainly due to the favourable financial experience over the three year valuation period, with investment returns being greater than expected and salary increases being less than expected as outlined in Section 4.

The Vested Benefit for each member is the highest amount when comparing a defined benefit amount with two accumulation benefits. As at 1 July 2018, the highest benefit applying in determining Vested Benefits was as follows:

- Defined Benefit – 16.6% of total Vested Benefits
- Accumulation based on Accumulation Comparison Rate – 32.4% of total Vested Benefits
- Minimum SG accumulation benefit – 51.0% of total Vested Benefits

Actuarial Value of Accrued Benefits

Another indication of the funding status is given by the ratio of the net assets to the Actuarial Value of Accrued Benefits (AVAB). This is called the Actuarial Value of Accrued Benefits Index (AVABI).

AVAB represents the value in today's dollars of future benefits based on membership completed to the review date, allowing for future salary increases, investment earnings and expected incidence of payment. "Accrued Benefits" has the meaning given in Regulation 9.27 of the SIS Regulations.

Different superannuation funds can be expected to have different Actuarial Value of Accrued Benefits Ratios depending on the age and membership history of the members. A fully secured position is represented by a ratio of 100.0%. At this level, with the DBF being closed to new entrants and if no further benefits were allowed to accrue to current members, assets would be sufficient to meet all future benefit payments if the actuarial assumptions are borne out in practice.

The following table shows the progression of the Actuarial Value of Accrued Benefits Index over the review period.

	Last Valuation \$M	This Valuation \$M
Net Assets (a)	1,120.0	1,036.3
Actuarial Value of Accrued Benefits* (b)	991.9	856.4
Actuarial Value of Accrued Benefits Index (a)/(b)	112.9%	121.0%

* Actuarial Value of Accrued Benefits have been reduced by offset accounts in the table above

As at 1 July 2018, the net assets exceeded the Actuarial Value of Accrued Benefits. AVABI has increased from 112.9% to 121.0% over the valuation period and this can be mainly attributed to the favourable financial experience over this period as outlined in Section 4. If calculated using the assumptions at the previous valuation, AVABI would be 121.1% at this valuation. If the Actuarial Value of Accrued Benefits was subject to a minimum of the Vested Benefit for each individual member, the AVABI would reduce from 121.0% to 120.4% at 1 July 2018.

Minimum Benefits

Under SPS 160, a fund (or section of a fund) is “solvent” if the net assets exceed the Minimum Requisite Benefits (MRB) of members, where the MRB is the portion of the benefit meeting the Superannuation Guarantee obligations as defined in the Scheme’s Benefit Certificate.

The following table shows the progression of the Minimum Benefits Index for the Regional DBF over the review period.

	Last Valuation \$M	This Valuation \$M
Net Assets (a)	1,120.0	1,036.3
Minimum Benefits (b)	951.5	836.6
Minimum Benefits Index (a)/(b)	117.7%	123.9%

As at 1 July 2018, the net assets exceeded the Minimum Benefits and so the Regional DBF was “solvent”. The Minimum Benefits Index has increased from 117.7% to 123.9% over the valuation period.

Shortfall Limit

The Trustee has set the Shortfall Limit for the Regional DBF as 98.0%. The shortfall limit is defined in paragraph 10 of SPS 160 as:

“... the extent to which an RSE licensee considers that a fund can be in an unsatisfactory financial position with the RSE licensee still being able to reasonably expect that, because of corrections to temporary negative market fluctuations in the value of fund assets, the fund can be restored to a satisfactory financial position within one year.”

Should the Vested Benefits Index breach the Shortfall Limit, additional interim Actuarial investigations will be required with rectification plans to be put in place to address the unsatisfactory financial position.

We note that the minimum SG accumulation benefit which is largely determining the Minimum Benefit shown in the table above has become an increasingly large component of the total vested benefits of the Regional DBF members at 1 July 2018.

While this is not a concern in itself given the Regional DBF’s financial position at 1 July 2018, we recommend the Shortfall Limit of Regional DBF be re-assessed during 2019 having regard to the increasing significance of the minimum SG accumulation benefit.

Benefits payable on Retrenchment

A specific retrenchment benefit is not defined in the Trust Deed for Regional DBF members. The benefit payable on retrenchment is the member's Vested Benefit. Members' Vested Benefits are 121.7% covered by net assets at the valuation date.

Benefits payable on Termination of the Scheme

The Trust Deed does not address the termination of either Regional DBF or the Scheme as a whole.

6.2 City DBF

Vested Benefits

Under SPS 160, a fund (or a section of a fund) is in a "satisfactory" financial position if the assets cover the corresponding Vested Benefit entitlements of members. The Vested Benefits represent the benefits payable on the review date if all members voluntarily resigned (if under 55) or retired (if over 55) and the value of the pension benefits (if applicable) for members who have already left service. Where the member is entitled to a defined benefit pension or a deferred benefit or to exercise an option, then the value of that benefit or option has been determined using the assumptions adopted for this valuation.

The following table shows the progression of the Vested Benefits Index for the City DBF over the review period.

	Last Valuation \$M	This Valuation \$M
Net Assets (a)	93.9	98.1
Vested Benefits DB members under age 70 (b)	76.8	73.8
Vested Benefits for crystallised DB members over age 70 (c)	0.5	0.2
Vested Benefits for Lifetime and Contingent Pensioners (d)	1.0	1.0
Vested Benefits Index (a)/ [(b)+(c)+(d)]	119.9%	130.8%

As at 1 July 2018, the net assets exceeded the Vested Benefits and so the City DBF was in a satisfactory financial position. The ratio of the net assets to the vested benefits was 130.8%. At the previous valuation, this ratio was 119.9%. The ratio has improved due mainly to the favourable financial experience over the valuation period as outlined in Section 4.

As at 1 July 2018, there are accumulation accounts amounting to \$14.2 million which receive smoothed crediting rates which are part of the Vested Benefits shown in the table above.

If the Trustee were to purchase commercial annuities to support the Lifetime and Contingent pensions, then based on some broadly indicative annuity rates we have examined, we expect the purchase price could be 10% to 15% higher than the liability of \$1.0 million currently being held in City DBF. Detailed quotations would be needed to examine this further should such a step be considered.

Actuarial Value of Accrued Benefits

Another indication of the funding status is given by the ratio of the net assets to the Actuarial Value of Accrued Benefits (AVAB). This is called the Actuarial Value of Accrued Benefits Index (AVABI).

AVAB represents the value in today's dollars of future benefits based on membership completed to the review date, allowing for future salary increases, investment earnings and expected incidence of payment. "Accrued Benefits" has the meaning given in Regulation 9.27 of the SIS Regulations.

Different superannuation funds can be expected to have different Actuarial Value of Accrued Benefits Ratios depending on the age and membership history of the members. A fully secured position is represented by a ratio of 100.0%. At this level, with the DBF being closed to new entrants and if no further benefits were allowed to accrue to current members, assets would be sufficient to meet all future benefit payments if the actuarial assumptions are borne out in practice.

The following table shows the progression of the Actuarial Value of Accrued Benefits Index over the review period.

	Last Valuation \$M	This Valuation \$M
Net Assets (a)	93.9	98.1
Actuarial Value of Accrued Benefits DB members under age 70 (b)	71.7	69.0
Actuarial Value of Accrued Benefits for crystallised DB members over age 70 (c)	0.5	0.2
Actuarial Value of Accrued Benefits for Lifetime and Contingent Pensioners (d)	1.0	1.0
Actuarial Value of Accrued Benefits Index a) / [(b)+(c)+(d)]	128.3%	139.7%

As at 1 July 2018, the net assets exceeded the Actuarial Value of Accrued Benefits. AVABI has increased from 128.3% to 139.7% over the valuation period and this can be mainly attributed to the favourable financial experience over the valuation period as outlined in Section 4. If calculated using the assumptions at the previous valuation, AVABI would be 139.4% at this valuation if the Actuarial Value of Accrued benefits was subject to a minimum of the Vested Benefit for each individual member, the AVABI would reduce from 139.7% to 130.8% at 1 July 2018.

Minimum Benefit

Under SPS 160, a fund (or section of a fund) is "solvent" if the net assets exceed the Minimum Requisite Benefits (MRB) of members, where the MRB is the portion of the benefit meeting the Superannuation Guarantee obligations as defined in the Scheme's Benefit Certificate.

The following table shows the progression of the Minimum Benefits Index for the City DBF over the review period.

	Last Valuation \$M	This Valuation \$M
Net Assets (a)	93.9	98.1
Minimum Benefits DB members under age 70 (b)	65.3	64.9
Minimum Benefits for crystallised DB members over age 70 (c)	0.5	0.2
Minimum Benefits for Lifetime and Contingent Pensioners (d)	1.0	1.0
Minimum Benefits Index (a)/ [(b)+(c)+(d)]	140.5%	148.5%

As at 1 July 2018, the net assets exceeded the Minimum Benefits and so the City DBF was “solvent”. The Minimum Benefits Index has increased from 140.5% to 148.5% over the valuation period.

Shortfall Limit

The Trustee has set the Shortfall Limit for the City DBF as 98.0%. The shortfall limit is defined in paragraph 10 of SPS 160 as:

“... the extent to which an RSE licensee considers that a fund can be in an unsatisfactory financial position with the RSE licensee still being able to reasonably expect that, because of corrections to temporary negative market fluctuations in the value of fund assets, the fund can be restored to a satisfactory financial position within one year.”

Should the Vested Benefits Index breach the Shortfall Limit, additional interim Actuarial investigations will be required with rectification plans to be put in place to address the unsatisfactory financial position.

We consider the current Shortfall Limit continues to be appropriate given the nature of the assets and liabilities of the City DBF.

Benefits payable on Retrenchment

A specific retrenchment benefit is not defined in the Trust Deed for City DBF members. The benefit payable on retrenchment is the member’s Vested Benefit. Members’ Vested Benefits are 130.8% covered by net assets at the valuation date.

Benefits payable on Termination of the Scheme

The Trust Deed does not address the termination of either City DBF or the Scheme as a whole.

Section 7: Valuation Contribution Results

It should be emphasised that the funding measures shown in Section 6 relate to the current position at the review date. A valuation which projects the benefits of each DBF is required to assess the adequacy of current contribution rates to provide defined benefits in the future. The results of the valuation are summarised in this Section.

7.1 Regional DBF

Contribution Rates for future service benefits of Regional DBF

Using the Attained Age funding method outlined in Section 4, we have calculated the present value of all expected benefits payable in respect of future membership after the valuation date ("future service benefits"). After allowing for the value of future member contributions, we then calculate the balancing employer contribution rate expected to be required (inclusive of contributions tax) to meet these future service benefits, as shown in the table below:

	\$000
Future Service Benefit Liabilities	105,999
<i>Less</i> Value of future member contributions	40,277
<hr/>	
Benefit Liability to be funded from future employer contributions	65,722
Present Value of future salaries	671,960
<hr/>	
Future employer contribution rate calculated (before tax)	9.8%
<i>Plus</i> Allowance for 15% contributions tax	1.7%
<hr/>	
Total Employer Contribution Rate calculated	11.5% of salary

Adjustment for financial position at 1 July 2018

As the net assets of the Regional DBF exceed the value of past service benefits shown in Section 5, there is potential to reduce the employer contribution rate shown above.

The financial position of the Regional DBF has strengthened over the valuation period with the coverage of vested benefits increasing from 111.9% at the last valuation to 121.7% at this valuation.

The relatively strong investment returns over the valuation period has also resulted in accumulation benefits rising relative to the defined benefits they are compared against when determining vested benefits. This relationship can change depending on the prevailing investment returns and the investment strategy adopted.

While there is scope to increase the employer contribution rate to the Regional DBF if a period of low investment returns were to occur in future, this has not occurred to date, with the financial position during those periods being managed by the Trustee through the setting of the Accumulation Comparison Rate applied to some accumulation accounts.

Based on the financial position at 1 July 2018, we suggest that the Trustee review the operation of the Accumulation Comparison Rate (including the smoothing policy, the past history of how returns have been released and how this should operate in future).

While these matters are considered, we recommend maintaining the current employer contribution rates to Regional DBF.

Recommended Contribution Rates – Regional DBF

We recommend that the current employer contribution rates to Regional DBF be maintained as follows:

- 12.0% of salaries for members contributing at 6% of salary.
- 11.0% of salaries for members contributing at 5% of salary.
- Additional contributions to the ABF for Regional DBF members of 9.5% of the excess of Ordinary Time Earnings over the Regional DBF salary.

Projection of vested benefits coverage for Regional DBF

We have tested the impact of adopting the recommended employer contribution rates above, by projecting the cash flows and the build-up of the assets over the next three years, and comparing the assets to the projected levels of the Vested Benefits within the Regional DBF.

Projection Date	DBF Assets \$million	Vested Benefits \$million	VBI %
1 July 2018	1,036.3	851.6	121.7%
1 July 2019	956.5	759.5	125.9%
1 July 2020	909.8	697.4	130.4%
1 July 2021	863.8	636.1	135.8%

The projection shows a further increase in the Vested Benefits Index to 135.8% at 1 July 2021 if future experience of Regional DBF is in line with our assumptions.

If the recommended employer contribution rates shown in this Section are paid, then I expect the Vested Benefits Index (VBI) to increase and to also remain above 100% over the 3 years to 1 July 2021, assuming the valuation assumptions are borne out in practice.

The financial experience over the next 3 years may differ from the valuation assumptions we have adopted and we have considered the sensitivity of these projections further in Section 8 following.

The projection above may also change following any decisions made by the Trustee in regard to either the Regional DBF investment strategy or how the Accumulation Comparison Rate will operate in future. Further projections of vested benefits coverage should be conducted as part of considering any such changes.

7.2 City DBF

Contribution Rates for future service benefits of City DBF

Using the Attained Age funding method outlined in Section 4, we have calculated the present value of all expected benefits payable in respect of future membership after the valuation date (“future service benefits”). After allowing for the value of future member contributions, we then calculate the balancing employer contribution rate expected to be required (inclusive of contributions tax and insurance costs) to meet these future service benefits, as shown in the table below:

	\$000
Future Service Benefit Liabilities (including 3% Occupational Account contribution)	12,188
<i>Less</i> Value of future member contributions	3,419
Benefit Liability to be funded from future employer contributions	8,769
Present Value of future salaries	68,384
Future employer contribution rate required	12.8%
<i>Plus</i> Allowance for 15% contributions tax	2.3%
<i>Plus</i> Allowance for insurance costs	1.3%
Total Employer Contribution Rate required	16.4% of salary

Adjustment for financial position at 1 July 2018

The financial position of the City DBF has strengthened over the valuation period with the coverage of vested benefits increasing from 119.3% at the last valuation to 130.8% at this valuation. In periods of low investment returns in the past, the employer has made additional contributions to support the financial position of the City DBF. The strong financial position at 1 July 2018 means it is possible for a contribution holiday to apply.

As the net assets of the City DBF of \$98.1 million exceed the actuarial value of past service benefits of \$70.2 million by \$27.9 million at 1 July 2018, this past service surplus is more than sufficient to meet the future contributions expected to be required as shown in the table above. There is therefore scope to apply a contribution holiday on this basis, subject to any industrial agreements being met.

We have recommended this contribution holiday commence for an initial 3 year period commencing from 1 January 2019 but it is likely to be extended for a longer period if future financial experience is as expected.

Projection of vested benefits coverage for City DBF

We have tested the impact of maintaining the current employer contribution rates, by projecting the cash flows and the build-up of the assets over the next three years, and comparing the assets to the projected levels of the Vested Benefits within the City DBF.

Maintaining current contributions

Projection Date	DBF Assets \$millions	Vested Benefits \$millions	VBI %
1 July 2018	98.1	75.0	130.8%
1 July 2019	93.4	68.3	136.7%
1 July 2020	91.4	64.6	141.5%
1 July 2021	89.9	61.3	146.6%

The projection shows a gradual increase in the Vested Benefits Index to 146.6% at 1 July 2021. In the projection below, we have also tested the impact of implementing a contribution holiday in respect of employer contributions (including Occupational Account contributions from 1 January 2019 to 1 July 2021).

If a holiday on employer contributions applies from 1 January 2019

Projection Date	DBF Assets \$millions	Vested Benefits \$millions	VBI %
1 July 2018	98.1	75.0	130.8%
1 July 2019	92.7	68.3	135.8%
1 July 2020	89.8	64.6	139.0%
1 July 2021	87.3	61.3	142.4%

The projection shows an increase in the Vested Benefits Index to 142.4% at 1 July 2021.

Recommended Contribution Rates for City DBF

In the absence of any special circumstances and subject to satisfying any industrial agreements, we recommend that each City DBF employer contributes at the following rates for the three year period commencing 1 July 2018:

- 14.0% of salaries (including the Occupational Account contribution) from 1 July 2018 to 31 December 2018
- 0.0% of salaries (including the Occupational Account contribution) from 1 January 2019 to 31 December 2021
- 14.0% of salaries (including the Occupational Account contribution) from 1 January 2022 onwards

The contribution holiday for 3 years outlined above may be able to be extended, subject to the financial experience of City DBF over the next 3 years. Similarly if the financial experience of City DBF deteriorated significantly over this period, then it may be necessary for contributions to resume earlier than 1 January 2022.

If the contribution holiday is retained for the next three years, then I expect the Vested Benefits Index (VBI) to increase and to also remain above 100% over the 3 years to 1 July 2021, assuming the valuation assumptions are borne out in practice.

The financial experience over the next 3 years may differ from the valuation assumptions we have adopted and we have considered the sensitivity of these projections further in Section 8 following.

The projection above may also change following any decisions made by the Trustee in regard to either the City DBF investment strategy or how the smoothing policy used to determine the crediting rates applied to some additional accumulation benefits held within City DBF will operate in future. Further projections of vested benefits coverage should be conducted as part of considering any such changes.

7.3 Recommended Future Review of Financial Status

The financial status of each DBF is sensitive to actual financial experience (principally, investment returns and salary increases) and membership movements. We therefore recommend that a check is placed on the Vested Benefits Index at least at each annual review date, and more frequently if required, in order to monitor the ongoing coverage of vested benefits.

The next actuarial valuation is due at 1 July 2021.

Section 8: Sensitivity Analysis and Material Risks

Sensitivity Analysis – Regional DBF

The “gap” adopted in this valuation between the investment return (net of administration and investment fees and investment tax) and salary inflation assumptions is 1.8% p.a. Other assumptions could be used and the table below shows the impact of varying the “gap” between these assumptions on the Regional DBF’s financial position and the contribution rate calculated to provide future service benefits under the Attained Age funding method. No changes have been made to the demographic assumptions adopted for this valuation in the scenarios below.

	This Valuation Basis	Scenario 1	Scenario 2
The “gap” between net investment return and salary inflation assumptions*	1.8% p.a.	(1.8 + 1)% p.a.	(1.8 – 1)% p.a.
Actuarial Value of Accrued Benefits Index	121.0%	121.6%	120.2%
Attained Age Employer Contribution Rate to provide future service benefits	11.5%	11.4%	11.8%

* The results shown above vary the discount rate by 1% p.a.

Sensitivity Analysis – City DBF

The “gap” adopted in this valuation between the investment return (net of administration and investment fees and investment tax) and salary inflation assumptions is 1.8% p.a. Other assumptions could be used and the table below shows the impact of varying the “gap” between these assumptions on the City DBF’s financial position and the contribution rate calculated to provide future service benefits under the Attained Age funding method. No changes have been made to the demographic assumptions adopted for this valuation in the scenarios below.

	This Valuation Basis	Scenario 1	Scenario 2
The “gap” between net investment return and salary inflation assumptions*	1.8% p.a.	(1.8 + 1)% p.a.	(1.8 – 1)% p.a.
Actuarial Value of Accrued Benefits Index	139.7%	145.6%	133.6%
Attained Age Employer Contribution Rate to provide future service benefits	16.4%	15.5%	17.3%

* The results shown above vary the discount rate by 1% p.a.

It should be noted that the variations selected in the sensitivity analysis above do not indicate upper or lower bounds of all possible outcomes. Further analysis can be carried out if required.

Material Risks – Regional DBF

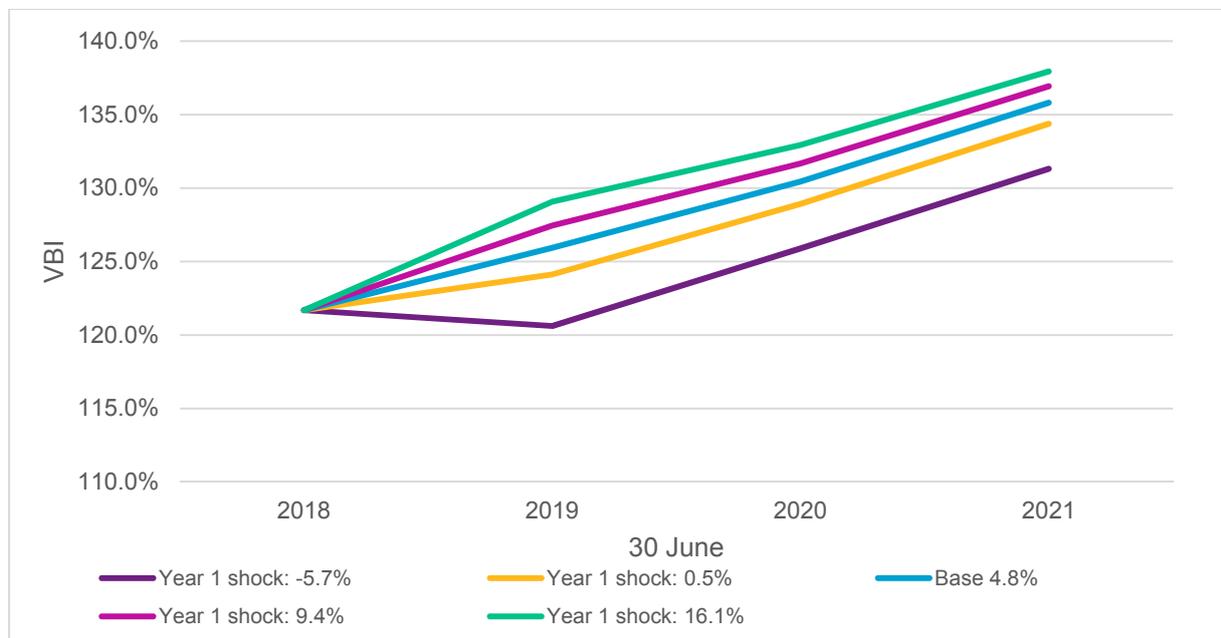
Salary Inflation

For this valuation we have adopted a salary inflation assumption of 3.0% p.a. However if actual salary increases are greater than this, with all other actuarial assumptions borne out, then the funding position (Vested Benefits Index) will reduce which may then affect future funding requirements. Given the extent to which the various accumulation underpin benefits are applying at the valuation date, the Regional DBF funding position is currently not overly sensitive to salary inflation experience. Further analysis can be carried out if required.

Investment Returns

For this valuation we have adopted an investment return assumption (net of tax and investment management expenses) of 4.8% p.a. However if actual investment returns are less than this, with all other actuarial assumptions borne out, then the funding position (Vested Benefits Index) will reduce which may then affect future funding requirements.

For example, the following graph highlights the sensitivity of the Regional DBF funding position (Vested Benefits Index) to an investment return different to that expected in the year to 30 June 2019 (year one of the projection). The investment return used for the year to 30 June 2020 (year two of the projection) and onwards is assumed to be the long term expected return of 4.8% p.a.



Change to investment strategy

Any change to the investment strategy that impacts future expected return on assets supporting the defined benefit liabilities will potentially have a material impact on the financial position of the Regional DBF.

Material Risks – City DBF

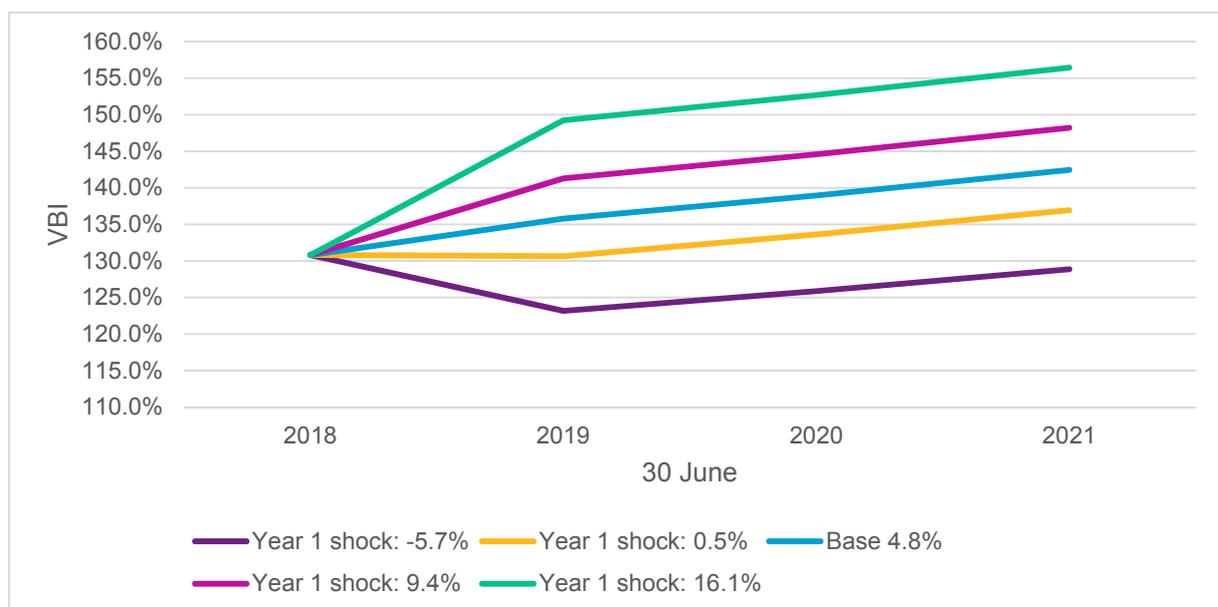
Salary Inflation

For this valuation we have adopted a salary inflation assumption of 3.0% p.a. However if actual salary increases are greater than this, with all other actuarial assumptions borne out, then the funding position (Vested Benefits Index) will reduce which may then affect future funding requirements. Further analysis can be carried out if required.

Investment Returns

For this valuation we have adopted an investment return assumption (net of tax and investment management expenses) of 4.8% p.a. However if actual investment returns are less than this, with all other actuarial assumptions borne out, then the funding position (Vested Benefits Index) will reduce which may then affect future funding requirements.

For example, the following graph highlights the sensitivity of the City DBF funding position (Vested Benefits Index) to an investment return different to that expected in the year to 30 June 2019 (year one of the projection). The investment return used for the year to 30 June 2020 (year two of the projection) and onwards is assumed to be the long term expected return of 4.8% p.a. This chart assumes the recommended contribution holiday is implemented from 1 January 2019 to 31 December 2021.



Change to investment strategy

Any change to the investment strategy that impacts future expected return on assets supporting the defined benefit liabilities will potentially have a material impact on the financial position of the City DBF.

Appendix A: Summary of Benefits

A.1 Regional DBF – Summary of benefits as at 1 July 2018

Membership

Queensland local government employees other than Brisbane City Council, Queensland Urban Utilities and associated employers. The Regional DBF is closed to new members.

Member Contributions

6% of salary after-tax, or 7.06% by salary sacrifice if the employer agrees.

A small number of members contribute 5% of salary, or 5.88% by salary sacrifice if the employer agrees. These members receive lower benefits (see Accrued Benefit Multiple below).

Final Average Salary (FAS)

FAS is generally the average of the member's superannuation salary over the final 12 months of employment.

Unless otherwise determined by the Trustee, FAS cannot be greater than 120% of the member's superannuation salary 3 years prior, unless the member's average salary over the last 3 years of employment is greater than 120% of their superannuation salary 3 years ago. In this situation, the 3 year average salary applies.

Accrued Benefit Multiple

The Accrued Benefit Multiple is equal to:

- 18% x Years of Scheme Membership after 1 January 1986; plus
- 13.5% x Years of Scheme Membership before 1 January 1986.

Where members contribute 5% of salary rather than 6% of salary, the 18% defined benefit scale is reduced to 15.75%.

Normal Retirement Benefit

Normal retirement is at any time from age 55 until attaining age 70.

The benefit payable is a lump sum equal to the greater of:

- FAS x Accrued Benefit Multiple; and
- The member's minimum retirement benefit, which is defined as the sum of:
 - the greater of FAS x Accrued Benefit Multiple from 1 January 1986 and the accumulation of member contributions plus 11% employer contributions (less deductions for fees and taxes) at the "accumulation comparison rate", and
 - the greater of FAS x Accrued Benefit Multiple to 1 January 1986 and the prior scheme accumulation together with the "accumulation comparison rate".

Resignation Benefit

A lump sum equal to the greater of:

- FAS x Accrued Benefit Multiple from 1 July 1992 x Discount Factor; and
- The accumulation of member contributions plus employer contributions at the Superannuation Guarantee rate from 1 July 1992 with interest at the "accumulation comparison rate" and deductions for taxes, fees and premiums.

The Discount Factor is equal to 100% less 2% for each year prior to age 55, subject to a minimum of 60%. For members prior to 30 June 1992 an additional benefit is provided based on a similar calculation.

Late Retirement Benefit

The retirement benefit is crystallised at age 70 and transferred to an accumulation account. All subsequent contributions go to this accumulation account.

Death and Total and Permanent Disablement (TPD) Benefit

A lump sum benefit applies to age 60 which in most cases is equal to the sum of:

- The portion of the Normal Retirement Benefit accrued to the date of death or TPD, but calculated using projected FAS (as defined in the Deed); and
- Projected FAS x 18% x Future years to age 60.

For some members, the age for projections is age 55 instead of age 60 above.

Total and Temporary Disablement (TTD) Benefit

Members under age 60 (or for some members age 55) who are working 14.5 or more hours per week on a permanent basis are eligible for a total and temporary disablement benefit based on 12.5% p.a. of the member's TPD benefit. This is paid as a monthly sum for up to 2 years after a 90 day waiting period. TTD benefits do not reduce the member's resignation or retirement benefits.

Failure of Health Benefit

Failure of health is defined as an injury or illness which, in the opinion of the Trustee, permanently incapacitates the member from carrying out his/her ordinary work with the employer, and any reasonably available and suitable alternative work with the employer, but does not constitute TPD.

The Failure of Health benefit is equal to the retirement benefit calculated at the date of retirement due to failure of health, inclusive of the Age Discount Factor.

Superannuation Guarantee Minimum Benefit

On all forms of exit, the benefit paid is subject to the Minimum Requisite Benefit which is an accumulation benefit as outlined in the Trust Deed.

Additional Accounts

Additional voluntary, rollover and surcharge offset accounts are paid in addition to all of the above benefits.

A.2 City DBF – Summary of benefits as at 1 July 2018

Membership

Former defined benefits members of City Super. The City DBF is closed to new members.

Member Contributions

5% of salary or 5.88% if the member chooses to salary sacrifice.

Normal Retirement Date

Normal retirement is at any time from age 55 to reaching age 70.

Final Average Salary

The average of the member's annual salary at each salary review date (1 April and 1 October) in the last three years.

Retirement Multiple

The Retirement Multiple is equal to 17.5% per year of membership.

Normal Retirement Benefit

A lump sum benefit equal to Final Average Salary x Retirement Benefit Multiple.

Late Retirement Benefit

The retirement benefit is crystallised at age 70 and transferred to an accumulation-style account.

Resignation Benefit

A lump sum benefit equal to Final Average Salary x Accrued Retirement Multiple x Discount Factor, where the Discount Factor is equal to 100% less 1% for each year prior to age 55.

Death and Terminal Illness Benefit

A lump sum equal to Salary at date of exit x Retirement Multiple projected to age 65.

Total and Permanent Disablement

A lump sum equal to Final Average Salary at date of exit x Retirement Multiple projected to age 65.

Superannuation Guarantee Minimum Benefit

On all forms of exit, the benefit paid is subject to the Minimum Requisite Benefit as set out in the Scheme's Benefit Certificate.

Accumulation Accounts

The employer pays an additional 3% of salary into an Occupational plan account. The Occupational plan account and any additional voluntary, rollover and surcharge offset accounts are paid in addition to all of the above benefits.

A.3 Lifetime and Contingent Pensions in City DBF

Lifetime Pensioners are certain former Brisbane City Councillors and their spouses that are currently in receipt of a lifetime pension payable from the Scheme. Contingent Pensioners are spouses of former Councillors whom previously elected to commute their lifetime pension to a lump sum. Contingent Pensioners are entitled to a pension on the death of the former Councillor.

Pensions are payable fortnightly and are indexed as follows:

- No indexation applies if the pension payable to the former Councillor first commenced prior to 27 March 1975;
- 3% per annum indexation applies if the pension payable to the former Councillor first commenced on or after 27 March 1975 up to 30 June 1976;
- Indexation in line with the Consumer Price Index (CPI) applies if the pension payable to the former Councillor first commenced on or after 1 July 1976.

A Contingent Pension becomes payable to the Eligible Spouse (as defined in the Trust Deed) of a former Councillor upon the former councillor's death, regardless of whether they were in receipt of a Lifetime Pension. The amount of the pension payable is equal to 5/8th's of the Lifetime Pension that would have been payable.

Once in payment, pensions are payable fortnightly and are indexed on the basis outlined above.

Appendix B: Details of Membership

Membership at valuation dates – Regional DBF

Membership as at:	Number of Members	Total Salaries	Average Salary	Average Age	Average Completed M'ship	Average Entry Age
1 July 2018	1,972	\$142.2m	\$72,129	57.6	28.0	29.6
1 July 2015	2,837	\$203.6m	\$71,767	56.4	26.3	30.1

There were 11 members making lower member contributions of 5% of salary at 1 July 2018. Other members contribute at 6% of salary as outlined in Appendix A.

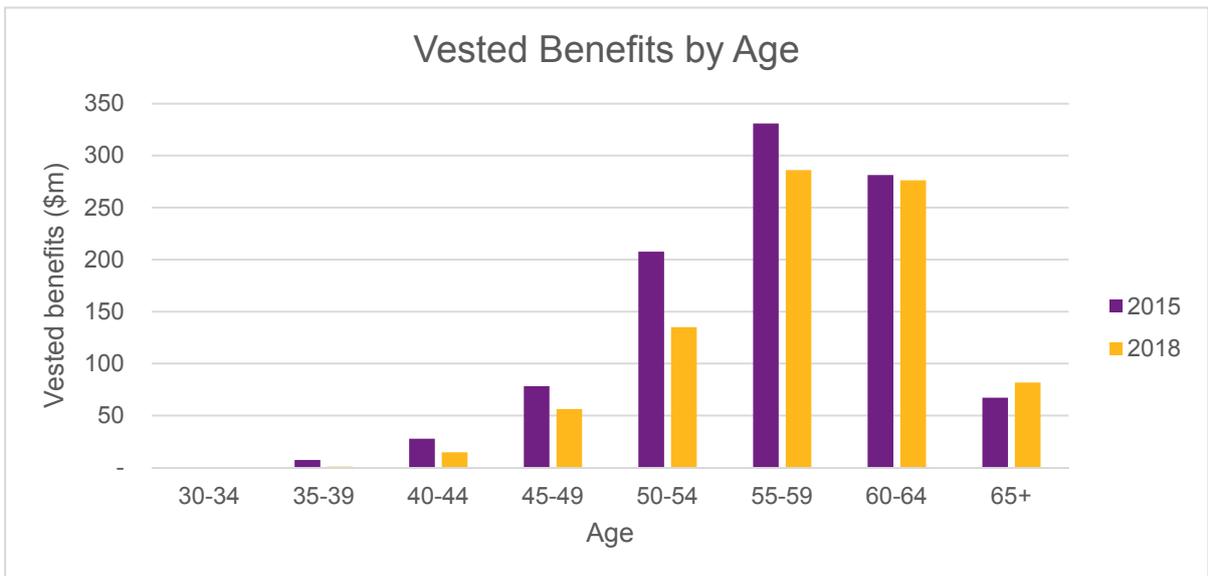
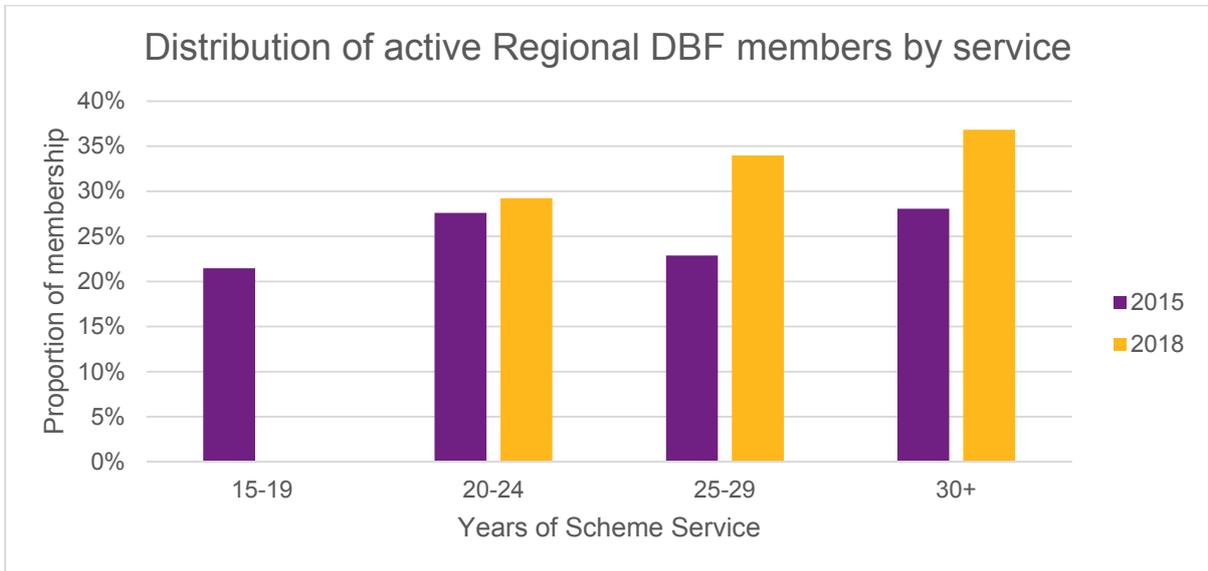
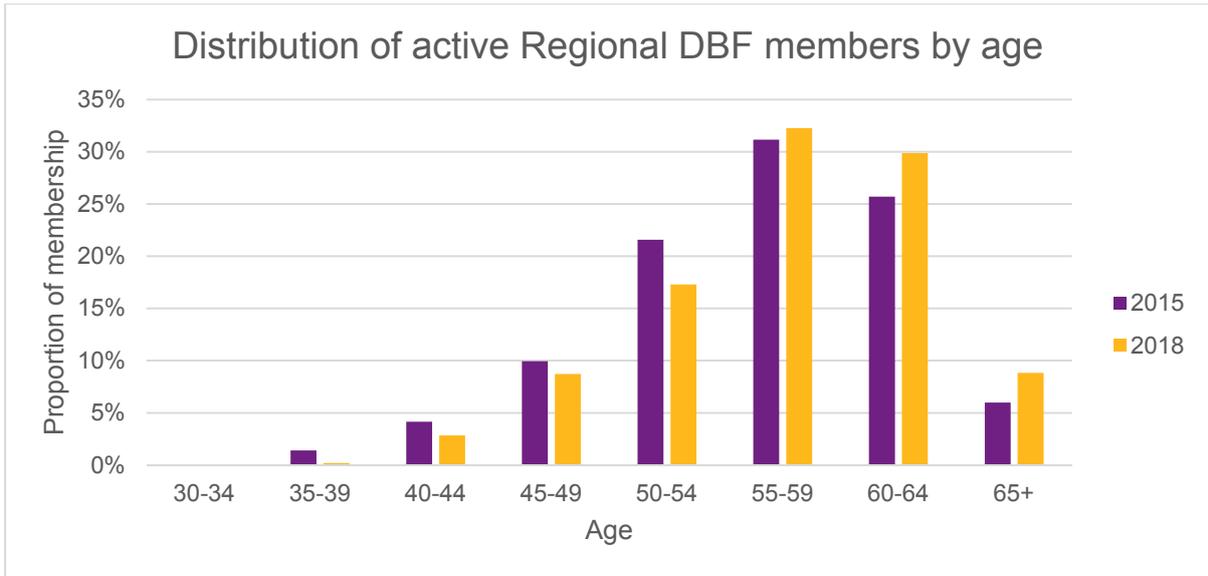
Approaching Retirements – Regional DBF

In the next three years, 305 members of Regional DBF are expected to reach their Normal Retirement Date. The total of their vested benefit at 1 July 2018 is \$146.4m.

As at 1 July 2018, there are 174 members of Regional DBF who have passed their Normal Retirement Date. The total of their vested benefits as at 1 July 2018 is \$83.2 m.

Distribution of Active Defined Benefit Membership – Regional DBF

Age Band	Number of Members at 1 July 2015	Number of Members at 1 July 2018
30-34	2	0
35-39	40	4
40-44	118	56
45-49	282	172
50-54	612	341
55-59	884	636
60-64	729	589
65+	170	174
Total	2,837	1,972



Membership at valuation dates – City DBF

Membership as at:	Number of Members	Total Salaries	Average Salary	Average Age	Average Completed M'ship	Average Entry Age
1 July 2018	160	\$12.0m	\$74,847	56.1	30.2	25.8
1 July 2015	199	\$13.8m	\$69,185	54.4	27.8	26.7

In addition to the Defined Benefit members shown above, there are 2 crystallised DB members over age 70, 2 current pensioners and 7 contingent pensioners within the City DBF.

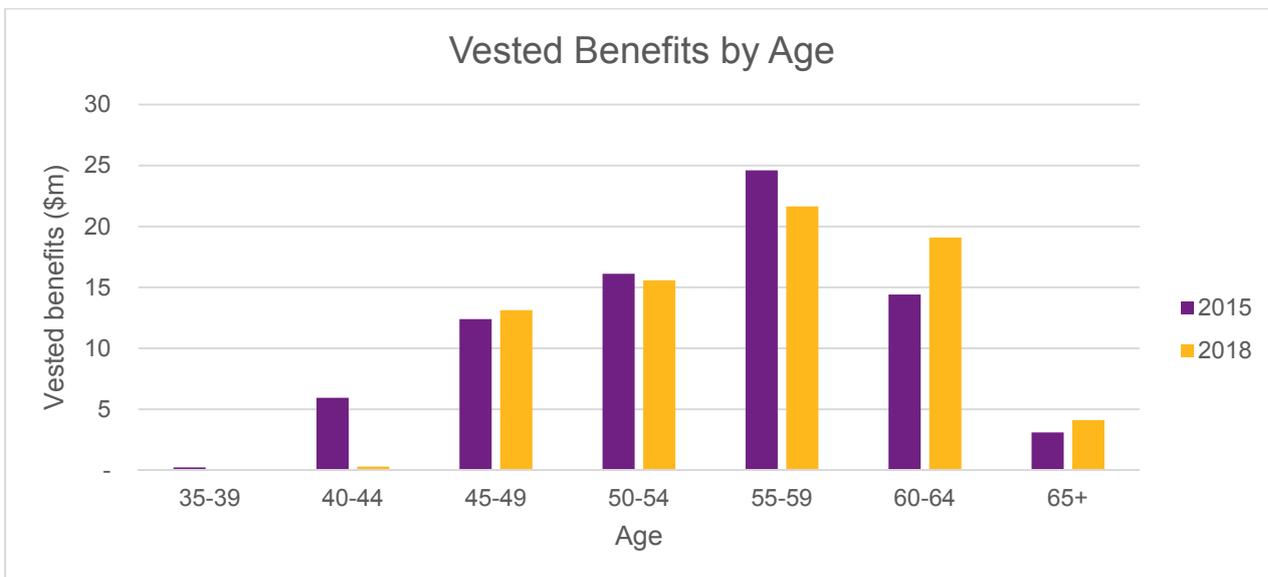
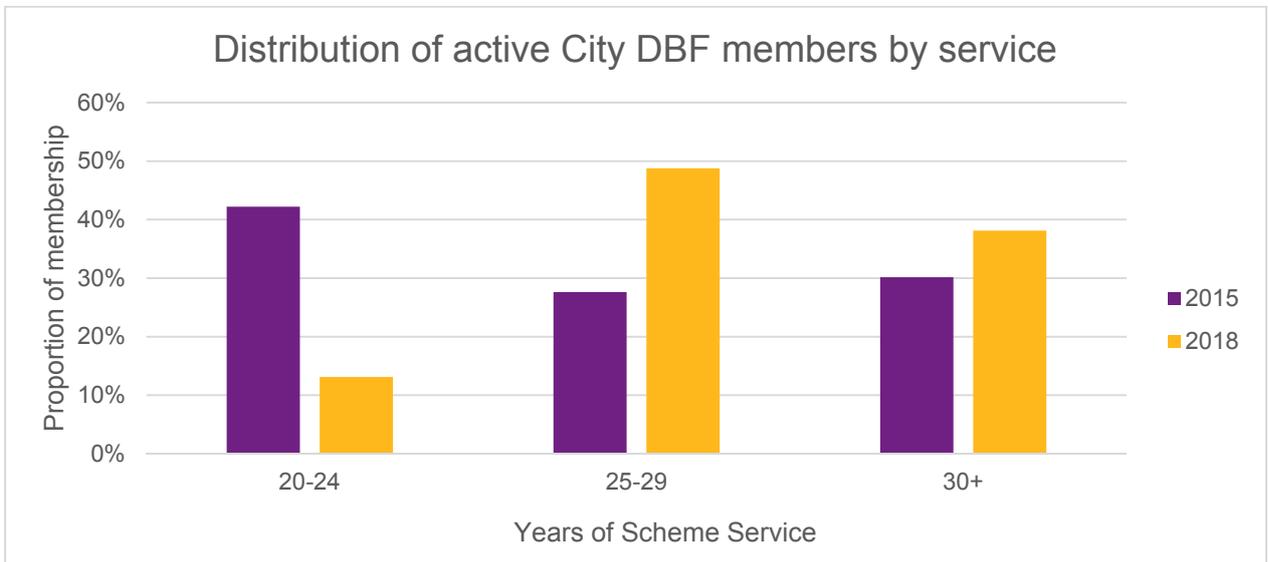
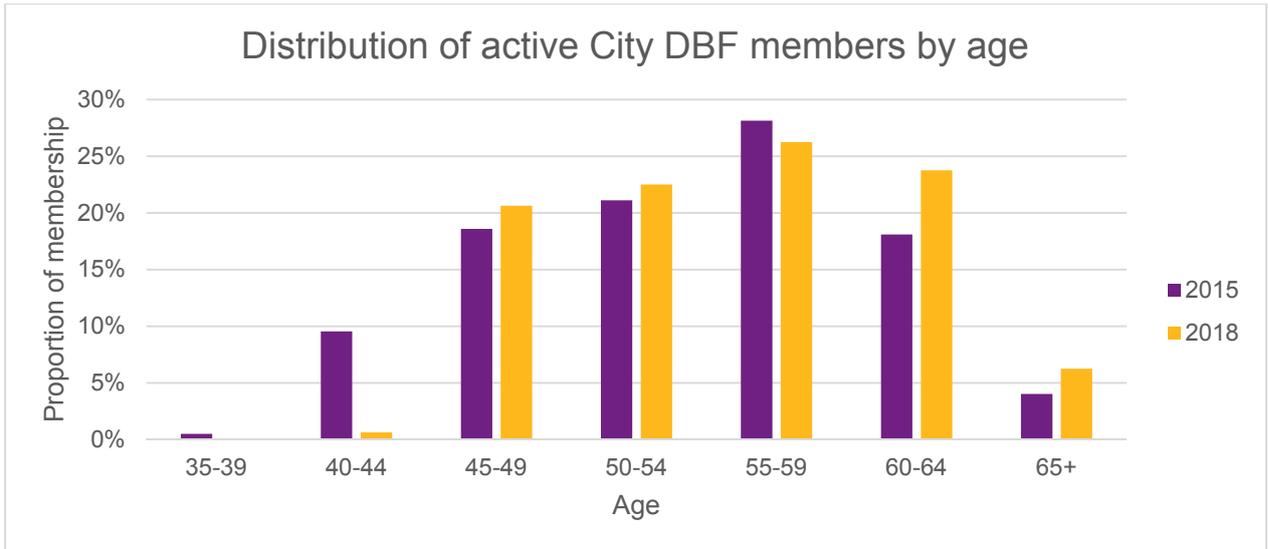
Approaching Retirements – City DBF

In the next three years, 15 members of City DBF are expected to reach their Normal Retirement Date. The total of their vested benefit at 1 July 2018 is \$4.9m.

As at 1 July 2018, there are 10 Defined Benefit members of City DBF who have passed their Normal Retirement Date. The total of their vested benefit at 1 July 2018 is \$3.4m.

Distribution of Active Defined Benefit Membership – City DBF

Age Band	Number of Members at 1 July 2015	Number of Members at 1 July 2018
35-39	1	0
40-44	19	1
45-49	37	33
50-54	42	36
55-59	56	42
60-64	36	38
65+	8	10
Total	199	160



Appendix C: Consolidated Revenue Accounts

Consolidated Revenue Accounts for the period from 1 July 2015 to 1 July 2018 for Regional DBF and City DBF

	Regional DBF \$000	City DBF \$000
Net Assets available to meet liabilities as at 1 July 2015	1,119,951	93,952
Transfer (to)/from reserves	-	-
Inter fund transfers	93	(3,034)
Plus:		
Employer Contribution revenue	81,880	7,287
Member Contribution revenue	14,510	1,036
Benefits retained	-	-
Transfers from other funds	-	-
Insurance claim proceeds	1,439	470
Net investment revenue	206,586	17,807
Less:		
Benefit payments	(363,863)	(16,928)
Surcharge Tax	-	-
Expenses	(7,662)	(660)
Insurance costs	(4,328)	(740)
Income tax expense	(12,282)	(1,049)
Net Assets available to meet liabilities as at 1 July 2018	1,036,324	98,141

Note that the reconciliations shown above exclude amounts held in respect of the Operational Risk Reserves for each of the DBF's.

Appendix D: Valuation Method and Assumptions

Valuation Method

The Attained Age Funding Method has been adopted, having regard also to the projected coverage of vested benefits. Further details are set out in Section 4 of this report.

Asset Value

Market value taken from the audited financial statements of the Scheme at the valuation date.

Investment Returns

4.8% p.a. compound (net of investment and administration expenses and taxes)

Inflationary Salary Increases

3% p.a. compound

Promotional Salary Increases

Nil

Rates of Mortality and Total and Permanent Disability (TPD)

Examples of rates at which members leave the Scheme per year per 10,000 members:

Age Next Birthday	Death	Regional DBF - TPD		City DBF - TPD	
		Male	Female	Male	Female
25	6.7	2.2	2.1	2.0	2.1
30	8.3	2.9	1.4	2.5	1.4
35	10.3	4.5	2.9	3.9	2.9
40	13.4	8.2	6.2	6.2	6.2
45	19.0	16.4	12.0	12.6	12.0
50	28.7	31.2	22.1	24.2	22.1
55	43.8	54.0	39.7	44.3	39.7
60	66.0	93.8	58.6	75.2	58.6

Rates of Early Retirement

The number of members reaching a given age who are expected to retire are as follows:

Age Next Birthday	Regional DBF Number per year per 10,000 members	City DBF Number per year per 10,000 members
55	1,000	1,000
56	700	500
57	700	500
58	700	500
59	800	500
60	1,000	1,500
61	1,200	1,500
62	1,300	1,500
63	1,500	1,500
64	1,500	3,000
65	4,000	10,000
66	4,000	
67	3,000	
68	2,500	
69	4,000	
70	10,000	

Rates of Leaving Service

Age Next Birthday	Regional DBF Number per year per 10,000 members	City DBF Number per year per 10,000 members
25	750	310
30	750	310
35	750	310
40	750	220
45	525	160
50	450	140
55	0	0

Rates of Retrenchment

A retrenchment rate of nil per 10,000 members has been assumed.

Future Expense Allowance

Investment expenses and administration expenses are allowed for in the investment returns shown above which are assumed to be net of investment and administration expenses.

Premium rates

Premium rates for both DBF's are assumed to be paid in line with the premium rates outlined in the most recent policy schedule dated 5 March 2018. A sample of the premium rates for Death and Total and Permanent Disablement cover are shown in the table below.

Age	Regional DBF	Regional DBF	City DBF
	Premium rate per \$1,000 Male \$	Premium rate per \$1,000 Female \$	Premium rate per \$1,000 Male and Female \$
25	1.71	1.19	1.15
30	1.68	1.42	1.15
35	1.77	1.81	1.15
40	2.70	3.05	1.86
45	4.43	4.65	3.02
50	7.26	7.36	4.80
55	13.98	13.00	9.61
60	24.42	19.63	16.66

New Entrants

No allowance for new entrants.

Taxes

Tax on investment income is allowed for in the Investment Returns shown above.

Tax on contributions has been allowed for as 15% of Company contributions reduced by allowable deductions (administration and insurance costs). No allowance has been made for GST or Reduced Input Tax Credits.

Surcharge Tax and Excess Contributions Tax

No allowance has been made for the Surcharge Tax and Excess Contributions Tax as it is assumed the Trustee will offset any tax payable against the benefits of the relevant member, if the member does not reimburse the Scheme for the tax payable.

Investment returns on pension assets in City DBF

5.4% p.a. compound (net of investment and administration expenses).

Pension indexation

2.5% p.a. compound on CPI-indexed pensions in City DBF.

Pensioner mortality

Examples of pensioner mortality rates per year per 10,000 members:

Age Next Birthday	Female	Male
65	62	105
70	103	167
75	181	289
80	332	519
85	664	934
90	1,281	1,612
95	2,188	2,478
100	3,033	3,125

These rates reflect the mortality rates published in the ALT 2010-2012. The rates are then assumed to reduce each year beyond 2011 in line with the published 25 year improvement factors in the ALT 2010-2012, a sample of which are shown below.

Age Next Birthday	Female % improvement pa	Male % improvement pa
65	2.56%	3.19%
70	2.55%	3.14%
75	2.38%	2.86%
80	2.06%	2.29%
85	1.52%	1.66%
90	0.83%	0.89%
95	0.20%	0.00%
100	0.00%	0.00%

Appendix E: Actuarial Statements required under Regulation 23 of SPS 160 for Regional DBF

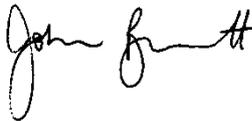
The following statements are made for the Regional Defined Benefit Fund (DBF) which is part of LGIAsuper in response to Prudential Standard SPS 160:

1. These statements relate to the Regional DBF as at 1 July 2018.
2. The value of the assets at 1 July 2018 used to assess the long term employer contribution rates to the Regional DBF was \$1,036.3 million based on audited financial statements. This asset value excludes any amount held to meet the Operational Risk Financial Requirement.
3. It is my opinion that the value of the Regional DBF's assets in point 2 are sufficient to meet the value of the Regional DBF's liabilities in respect of Accrued Benefits at the review date. These liabilities are 121.0% covered while vested benefits are 121.7% covered.
4. The assumptions and valuation methods used to determine the Accrued Benefit liabilities shown in point 3 are considered appropriate for this purpose.
5. The recommended employer contribution rates payable as a result of this valuation are:
 - 12.0% of salaries for members contributing at 6% of salary.
 - 11.0% of salaries for members contributing at 5% of salary.
 - Additional contributions to the ABF for Regional DBF members of 9.5% of the excess of Ordinary Time Earnings over the Regional DBF salary.
6. Within the meaning of SIS Regulation 9.03, I consider that the financial position of the Regional DBF is satisfactory at 1 July 2018 and, provided employer contributions are made at the recommended rates above and the valuation assumptions adopted are borne out in practice, the Regional DBF is likely to remain in a satisfactory financial position over the three years following 1 July 2018.
7. We recommend the current Shortfall Limit of 98% for the Regional DBF be re-assessed during 2019 having regard to the increasing significance of the minimum SG accumulation benefit when determining total vested benefits.
8. As at 1 July 2018, the Regional DBF's assets were sufficient to cover the corresponding Minimum Benefits of \$836.6 million by 123.9%.
9. All Funding and Solvency Certificates that were required or were material during the period of the investigation have been obtained.

10. The projected likely future financial position of the Regional DBF during the three years following the valuation date and based on my best estimate assumptions and recommended contribution rates is as follows:

Projection Date	DBF Assets \$millions	Vested Benefits \$millions	VBI %
1 July 2018	1,036.3	851.6	121.7%
1 July 2019	956.5	759.5	125.9%
1 July 2020	909.8	697.4	130.4%
1 July 2021	863.8	636.1	135.8%

11. I consider that an Actuary is likely to be able to certify the solvency position of the Regional DBF in any Funding and Solvency Certificate that may be required under the Superannuation Industry (Supervision) Regulations during the three year period commencing from 1 July 2018 based on the current level of Superannuation Guarantee.



John Burnett
Fellow of the Institute of Actuaries of Australia

Review: NW/JD

29 November 2018

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Appendix F: Actuarial Statements required under Regulation 23 of SPS 160 for City DBF

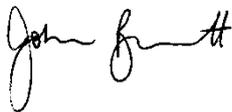
The following statements are made for the City Defined Benefit Fund (DBF) which is part of LGIAsuper in response to Prudential Standard SPS 160:

1. These statements relate to the City DBF as at 1 July 2018.
2. The value of the assets at 1 July 2018 used to assess the long term Company contribution rates to the City DBF was \$98.1 million based on audited financial statements. This asset value excludes any amount held to meet the Operational Risk Financial Requirement.
3. It is my opinion that the value of the City DBF's assets in point 2 are sufficient to meet the value of the City DBF's liabilities in respect of Accrued Benefits at the review date. These liabilities are 139.7% covered while vested benefits are 130.8% covered.
4. The assumptions and valuation methods used to determine the Accrued Benefit liabilities shown in point 3 are considered appropriate for this purpose.
5. The recommended employer contribution rates payable as a result of this valuation are 14.0% of salaries (including 3.0% Occupational Account contributions) until 31 December 2018, following which a contribution holiday is recommended from 1 January 2019 until 31 December 2021.
6. Within the meaning of SIS Regulation 9.03, I consider that the financial position of the City DBF is satisfactory at 1 July 2018 and, provided the valuation assumptions adopted are borne out in practice, the City DBF is likely to remain in a satisfactory financial position over the three years following 1 July 2018.
7. In my opinion there is a high degree of probability that the City DBF will be able to pay the lifetime pension liabilities of the City DBF as required under the governing rules.
8. The current Shortfall Limit of 98% for the City DBF is considered to still be suitable.
9. As at 1 July 2018, the City DBF's assets were sufficient to cover the corresponding Minimum Benefits of \$66.1 million by 148.5%.
10. All Funding and Solvency Certificates that were required or were material during the period of the investigation have been obtained.

11. The projected likely future financial position of the City DBF during the three years following the valuation date and based on my best estimate assumptions and recommended contribution rates is as follows:

Projection Date	DBF Assets \$millions	Vested Benefits \$millions	VBI %
1 July 2018	98.1	75.0	130.8%
1 July 2019	92.7	68.3	135.8%
1 July 2020	89.8	64.6	139.0%
1 July 2021	87.3	61.3	142.4%

12. I consider that an Actuary is likely to be able to certify the solvency position of the City DBF in any Funding and Solvency Certificate that may be required under the Superannuation Industry (Supervision) Regulations during the three year period commencing from 1 July 2018 based on the current level of Superannuation Guarantee



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