



Government Employees Pension Fund

## Statutory Actuarial Valuation

31 March 2014

# Table of Contents

<b>Executive Summary</b> .....	<b>1</b>
<i>Past Service: Financial Status</i> .....	1
<i>Future Service: Required Contribution Rate</i> .....	2
<i>Membership</i> .....	5
<i>Certifications</i> .....	6
<b>Section 1 : Introduction</b> .....	<b>8</b>
1.1 <i>Background</i> .....	8
1.2 <i>Registration and operation</i> .....	8
1.3 <i>Objectives of the valuation</i> .....	8
1.4 <i>Previous valuation</i> .....	9
1.5 <i>Current valuation</i> .....	9
1.6 <i>Capacity, brief and professional guidance</i> .....	9
<b>Section 2 : Developments since the previous valuation</b> .....	<b>11</b>
2.1 <i>Changes in benefits</i> .....	11
2.2 <i>Pension increases</i> .....	12
2.3 <i>Investment Return on the Fund's assets</i> .....	12
2.4 <i>Salary increases</i> .....	12
2.5 <i>Contribution rates paid</i> .....	13
2.6 <i>Self-insurance of death and disability benefits</i> .....	13
2.7 <i>Extraordinary changes in membership</i> .....	13
2.8 <i>Changes in investment profile</i> .....	14
2.9 <i>Any other change deemed relevant by the actuary</i> .....	14
<b>Section 3 : Assets of the Fund</b> .....	<b>15</b>
3.1 <i>Assets of the Fund</i> .....	15
3.2 <i>Net Asset Attribution</i> .....	16
3.3 <i>Investment Returns earned over the period</i> .....	16
3.4 <i>Investment Strategy of the Fund</i> .....	16

**Section 4 : Valuation Basis and Methodology.....18**

    4.1 Valuation methodology ..... 18

    4.2 Summary of the valuation basis..... 19

**Section 5 : Funding Policy and Objectives .....21**

**Section 6 : Contingency Reserve Accounts .....22**

**Section 7 : Valuation Results.....23**

    7.1 Past Service: Financial Status .....23

    7.2 Future Service: Required Contribution Rate .....24

**Section 8 : Inter-valuation Experience .....28**

**Section 9 : Certification and signature.....32**

**Appendix A : Summary of the Fund .....35**

**Appendix B : Summary of Membership and Data .....39**

**Appendix C : Consolidated Revenue Account .....51**

**Appendix D : Valuation Basis and Method Adopted .....52**

**Appendix E : Sensitivity Analysis .....59**

**Appendix F : Contingency Reserves.....60**

**Appendix G : Summary of Liabilities and Required Contribution Rates .....65**

**Appendix H : Solvency Reserve Details.....68**

**Appendix I : Notional Pensioner Accumulation Amount .....69**

**Appendix J : Actuarial Interest Factors .....71**

# Executive Summary

The Government Employees Pension Fund (the "Fund") was established in 1973. It is a defined benefit pension fund, with the objective of providing pensions and other benefits for members and their dependants. This is the eleventh statutory valuation of the Fund and the second valuation to be performed by Towers Watson. Comparative results for the 31 March 2012 valuation are also reflected, where appropriate.

This report has been prepared in accordance with the Government Employees Pension Law, 1996 as amended (*"the GEP Law"*), which requires that the Fund shall have its financial condition investigated and reported upon by a valuator at least once in every three years. However, due to the significant changes in liability and asset values seen over the past few years, it is the practice of the Fund to perform bi-annual actuarial valuations to determine the value of the Fund's liabilities and the required contribution rate by the Employer.

The report takes into account the requirements set out in professional guidelines for actuarial reports (Standard of Actuarial Practice 201) issued by the Actuarial Society of South Africa, current as at the date of signature of the report. Consideration has also been given to the requirements of Board Notice 149 of 2010 issued by the Registrar of Pension Funds in respect of occupational funds on the basis that the information in this Notice would be good practice for the Fund although not a compliance requirement.

## Past Service: Financial Status

The fair value of the accumulated assets of the Fund as at 31 March 2014 is compared to the best-estimate accrued actuarial liability, in respect of benefits earned for service rendered to that date, according to the Funding Level Policy of the Fund, current as at the date of the valuation. Figures from the previous statutory valuation of the Fund (31 March 2012) have been included for comparative purposes.

Financial position as at	31 March 2014 R'm	31 March 2012 R'm
Fair value of assets	1 425 719	1 038 946
Less In-service member liability	(878 721)	(773 805)
S-case and exits in progress liability	(18 155)	-
Pensioner liability	(263 552)	(223 049)
Deferred pensioner liability	(6)	(1)
Data reserve	(6 590)	(10 050)
Past discriminatory practice reserve	(6 492)	(4 711)
<b>Past service surplus before reserves</b>	<b>252 203</b>	<b>27 330</b>
<b>Minimum funding level <sup>(1)</sup></b>	<b>121.5%</b>	<b>102.7%</b>
Less Mortality improvement reserve	(33 918)	(26 628)
Pension increase reserve (past service)	(119 539)	(105 614)
Pension increase reserve (future service)	(84 918)	(77 939)
Solvency reserve	(303 000)	(254 000)
<b>Past service surplus after reserves</b>	<b>(289 172)</b>	<b>(436 851)</b>
<b>Long term funding level <sup>(2)</sup></b>	<b>83.1%</b>	<b>70.4%</b>

## 1. Minimum Funding Level

The minimum funding level at the valuation date, which is determined as the fair value of the assets divided by the liabilities (excluding solvency reserves and contingency reserves) is 121.5% and therefore exceeds the Trustees targeted minimum funding level of 90%. At the previous valuation date, the minimum funding level was 102.7%.

## 2. Long-term Funding Level

The long-term funding level, which is determined as the fair value of the assets divided by the liabilities and the recommended solvency reserves and contingency reserves (including the future service element of the pension increase reserve) is 83.1% at the current valuation date, and is below the Trustees targeted long-term funding level of 100%. The Trustees are therefore only able to establish the solvency reserves and contingency reserves to the extent of R252 203 million, some 46.6% of the recommended solvency reserves and contingency reserves of R541 375 million.

The corresponding long-term funding level at the previous valuation date was 70.4%. Thus the Trustees were only able to establish the solvency reserves and contingency reserves to the extent of R27 330 million, some 5.9% of the recommended solvency and contingency reserves.

## Future Service: Required Contribution Rate

The required contribution rate by the employers, expressed as a percentage of pensionable salaries, at the current and previous valuation dates, without having regard to the funding level of the Fund, is reflected in the table below:

Required Contribution Rate	31 March 2014	31 March 2012	31 March 2010
Total required contribution rate	22.3%	22.9%	21.4%
Less: Contributions by members	(7.5%)	(7.5%)	(7.5%)
<b>Required employer contribution rate</b>	<b>14.8%</b>	<b>15.4%</b>	<b>13.9%</b>
Current average employer contribution rate	13.5%	13.5%	13.5%
<b>Excess / (shortfall) between actual and required contribution rate</b>	<b>(1.3%)</b>	<b>(1.9%)</b>	<b>(0.4%)</b>

The total required contribution rate includes the contributions in respect of the funded benefits and an allowance for annual Fund expenses and reflects the average required contribution rate in respect of both "Services" and "Other" Members. The current employer contribution rate represents the average of the 16% contribution rate in respect of *Services* members and the 13% contribution rate in respect of *Other* members.

### Breakdown of required contribution rate by employer type

The underlying required contribution rates for the categories *Services* and *Other* as at 31 March 2014, reflected at the current and previous valuation dates, are shown below:

Required Contribution Rate split by employer	31 March 2014		31 March 2012	
	Services	Other	Services	Other
Funded benefits	25.6%	21.2%	26.5%	21.9%
Allowance for Fund expenses	0.3%	0.3%	0.3%	0.3%
<b>Total required contribution rate</b>	<b>25.9%</b>	<b>21.5%</b>	<b>26.8%</b>	<b>22.2%</b>
Less: Contributions by members	(7.5%)	(7.5%)	(7.5%)	(7.5%)
<b>Required employer contribution rate</b>	<b>18.4%</b>	<b>14.0%</b>	<b>19.3%</b>	<b>14.7%</b>
Actual employer contribution rate	16.0%	13.0%	16.0%	13.0%
<b>Excess / (shortfall) between actual and required contribution rate</b>	<b>(2.4%)</b>	<b>(1.0%)</b>	<b>(3.3%)</b>	<b>(1.7%)</b>

### Cost of additional pensionable service for Services members

The following table provides an indication of the effect on the contribution rate in respect of members of the *Services* category, who qualify for an additional 25% enhancement to their years of pensionable service greater than 10 years. The results are shown including and excluding the additional 25% enhancement:

Additional cost for Services Members	31 March 2014		31 March 2012	
	Including 25%	Excluding 25%	Including 25%	Excluding 25%
Funded benefits	25.6%	21.8%	26.5%	22.7%
Allowance for Fund expenses	0.3%	0.3%	0.3%	0.3%
<b>Total required contribution rate</b>	<b>25.9%</b>	<b>22.1%</b>	<b>26.8%</b>	<b>23.0%</b>
Less: Contributions by members	(7.5%)	(7.5%)	(7.5%)	(7.5%)
<b>Required employer contribution rate</b>	<b>18.4%</b>	<b>14.6%</b>	<b>19.3%</b>	<b>15.5%</b>
Actual employer contribution rate	16.0%	16.0%	16.0%	16.0%
<b>Excess / (shortfall) between actual and required contribution rate</b>	<b>(2.4%)</b>	<b>1.4%</b>	<b>(3.3%)</b>	<b>0.5%</b>

As indicated in the results above, the effect of the service enhancement in respect of *Services* members amounts to approximately 3.8% of pensionable salaries on the "best estimate" valuation basis. This is higher than the difference in contributions payable by the *Services* employers (16%) and *Other* employers (13%) but highlights the appropriateness of the difference in contribution rates. The residual difference can be explained by the differing decrement assumptions between the two categories of members.

### Shortfall in the required employer contribution rate

For a fund governed in terms of the Pension Funds Act, the employer is required to contribute at the required rate determined by the valuator of the fund, or for any contribution shortfall to be funded from an employer surplus account in the fund.

The nature of the Government Employees Pension Fund is somewhat different in that it is governed in terms of the GEP Law and the covenant of the employer is much stronger in terms of being able to meet any funding shortfall in the future.

The Trustees and the employer need to jointly determine the pace of funding, i.e. the employer contribution rate, and an acceptable level of funding, both in the short term and the long term for the Fund.

It should be noted that the shortfall between the required employer contribution rate (14.8% of pensionable salaries) and the current actual employer contribution rate (an average of 13.5% of pensionable salaries) amounts to some R3.2 billion per annum or some 0.27% of the Fund's liabilities.

If the employer continues to contribute at the current rate, the shortfall is therefore expected to reduce the funding level by 0.27% per annum.

### 5% equity risk premium allowance

The valuation basis assumes an "equity risk premium" of 3% per annum, i.e. that portion of the Fund's assets invested in equities will earn a return that is 3% higher than the long-term bond yield assumption. The Trustees have invested a material portion of the Fund's assets in local and foreign equities and property, namely 64.1% as at the valuation date (58.6% at the previous valuation). For valuation purposes, we have assumed that on average 60% of the assets are invested on this basis in the future.

For illustrative purposes, previous valuation reports have also set out the required level of employer contributions if a 5% equity risk premium is assumed. The use of this assumption for determining the future funding requirements must be seen as a risk budgeting exercise for the employers. To the extent that equities over the long term earn a risk premium of 5% over bonds (and other experience is as assumed), the required level of contributions at the rates below would then be adequate. It should, however, be appreciated that the higher the assumed equity risk premium, the lower will be the required contribution rates, but that this also carries a greater risk of requiring additional contributions into the future should experience not be in line with that assumed:

Required Contribution Rate on 5% and 3% Equity Risk Premium	5% Equity Risk Premium		3% Equity Risk Premium (Valuation basis)	
	Services	Other	Services	Other
Funded benefits	20.3%	16.9%	25.6%	21.2%
Allowance for Fund expenses	0.3%	0.3%	0.3%	0.3%
<b>Total contribution rate required</b>	<b>20.6%</b>	<b>17.2%</b>	<b>25.9%</b>	<b>21.5%</b>
Less: Contributions by members	(7.5%)	(7.5%)	(7.5%)	(7.5%)
<b>Required employer contribution rate</b>	<b>13.1%</b>	<b>9.7%</b>	<b>18.4%</b>	<b>14.0%</b>
Actual employer contribution rate	16.0%	13.0%	16.0%	13.0%
<b>Excess / (shortfall) between actual and required contribution rate</b>	<b>2.9%</b>	<b>3.3%</b>	<b>(2.4%)</b>	<b>(1.0%)</b>

Based on a 5% equity risk premium assumption the required employer contribution rate is 13.1% for *Services* employers and 9.7 % for “Other” employers. On this basis, there is an excess contribution of 2.9% for *Services* employers and an excess contribution of 3.3% for *Other* employers.

We would suggest that the Trustees and the employer should not rely on the Fund’s assets earning this higher equity risk premium over the long-term and that the required employer contribution rate should be considered in terms of the valuation basis, i.e. using a 3% equity risk premium.

## Membership

A summary of the membership at the current and previous valuation dates is shown in the tables below.

	31 March 2014		31 March 2012	
	Number of members	Annual emoluments / pension R'000	Number of members	Annual emoluments / pension R'000
<b>In-service Members</b>				
Services	226 528	42 686 793	202 682	34 339 895
Other	1 060 832	204 197 318	1 095 712	181 546 285
<b>Total</b>	<b>1 287 360</b>	<b>246 884 111</b>	<b>1 298 394</b>	<b>215 886 180</b>

	31 March 2014		31 March 2012	
	Number of members	Annual emoluments / pension R'000	Number of members	Annual emoluments / pension R'000
<b>In-service Members</b>				
Males	549 249	107 647 792	565 358	96 308 168
Females	738 111	139 236 319	733 036	119 578 012
<b>Total</b>	<b>1 287 360</b>	<b>246 884 111</b>	<b>1 298 394</b>	<b>215 886 180</b>
<b>Pensioners / Widow(er)s</b>				
Males	116 034	10 818 371	112 936	9 202 533
Females	251 315	13 893 645	238 461	11 172 522
<b>Total</b>	<b>367 349</b>	<b>24 712 016</b>	<b>351 397</b>	<b>20 375 055</b>
<b>Suspended Pensioners</b>				
Males	329	12 040	1 783	44 116
Females	691	16 598	3 358	63 562
<b>Total</b>	<b>1 020</b>	<b>28 638</b>	<b>5 141</b>	<b>107 678</b>
<b>Deferred Pensioners</b>				
Males	11	223	11	204
Females	-	-	-	-
<b>Total</b>	<b>11</b>	<b>223</b>	<b>11</b>	<b>204</b>

## Certifications

I certify that:

- The value of the assets of the Fund is sufficient to cover the best estimate accrued actuarial liabilities at the valuation date and therefore the Fund is financially sound on the minimum funding basis;
- The financial condition of the Fund has been assessed by considering the assets of the Fund in relation to its liabilities based on best estimate assumptions;
- In addition, the amount of solvency reserves and contingency reserves to allow for some fluctuations in asset values, improvements in longevity and pension increases equal to inflation have been determined. The Fund does not have sufficient assets to cover the recommended solvency reserves and contingency reserves in full. Allowing for the solvency reserves and contingency reserves in full will reflect a long-term funding level of 83.1%.
- Given that the valuation is of necessity based on assumptions regarding the future, the assessed value of the liabilities, solvency reserves and contingency reserves may prove to be more or less than is required in practice.
- If the liabilities and the amount of the solvency reserves and contingency reserves set up prove to be inadequate in future, Trustee action will be required to rectify the position. This may involve, *inter alia*, the reduction of future benefit accruals or an increase in the required contribution rate, subject to the required consultations in terms of the GEP Law.
- Subject to the above and provided that the employer contributes at a rate of 18.4% of total pensionable salaries in respect of *Services* members and 14.0% in respect of *Other* members, the financial soundness of the Fund on the minimum funding basis should be maintained until at least the next actuarial valuation of the Fund.
- The employer contributed at a rate of 16.0% of total pensionable salaries in respect of *Services* members and 13.0% in respect of *Other* members as at the valuation date. If the employers continue to contribute at these rates, the contribution shortfall is expected to be some R3.2 billion per annum or some 0.27% of the Fund's total liabilities. The minimum funding level would therefore be expected to reduce by some 0.27% per annum.
- The valuation basis assumes a 3% equity risk premium over the long-term bond yield assumption. For illustrative purposes in testing the appropriateness of the current level of contributions, a 5% equity risk premium over the long-term bond yield assumption was also considered. This is a less conservative assumption than that used for valuing the past service financial position of the Fund. The use of this assumption for determining the future funding requirements must be seen as a risk budgeting exercise for the employers. To the extent that equities over the long term earn a risk premium of 5% over bonds (and other experience is as assumed), a lower level of contributions would be adequate. It should, however, be appreciated that the higher the assumed equity premium the lower will be the required contribution rates but that this also carries a greater risk of requiring additional contributions into the future should experience not be in line with that assumed.

Based on a 5% equity risk premium assumption, the required employer contribution rate is 13.1% for *Services* members and 9.7% for *Other* members. On this basis there is an excess contribution of 2.9% for *Services* members and an excess contribution of 3.3% for *Other* members.

For the current 16% contribution rate in respect of *Services* members to prove adequate (and other experience is as assumed), an equity risk premium of 3.9% over the long-term bond yield assumption would need to be achieved. Similarly, for the current 13% contribution rate in respect of *Other* members to prove adequate (and other experience is as assumed), an equity risk premium of 3.5% over the long-term bond yield assumption would need to be achieved.

- The cost of the service enhancement in respect of *Services* members amounts to approximately 3.8% of pensionable salaries, which is higher than the current difference in contributions paid by and in respect of *Services* and *Other* members, but reflects the reasonable difference in contributions.
- The Trustees and the employer need to jointly determine the pace of funding, i.e. the employer contribution rate, and an acceptable level of funding, both in the short term and the long term for the Fund. In this regard, we would note that:
  - The level of contributions should be monitored as part of each actuarial valuation of the Fund.
  - Rule 7.2 of the Fund's rules states that the employer contributions should be sufficient to ensure that the Fund is able "to meet its obligations at all times, subject to a minimum funding level of 90%". This can therefore be viewed as the primary funding objective of the Fund. The funding level of the Fund of 121.5% as at the valuation date was in excess of the minimum funding level.
  - The Funding Policy of the Fund also stipulates that the Board of Trustees should strive to maintain the long-term funding level at or above 100%. The long term funding level of the Fund at the valuation date equalled 83.1%. The Fund at the valuation date therefore meets its minimum funding level, but as the solvency reserves and contingency reserves are not fully funded, does not meet its long-term funding objective.
- We recommend that the key demographic assumptions used for the Fund be monitored through an experience analysis exercise every three to five years. The previous analysis was carried out as at 31 March 2012. The next analysis should be completed following the next valuation of the Fund, and should include an investigation into any expected future mortality improvements for both in-service members and pensioners.
- The appropriate method of valuing assets, in conjunction with the appropriate level of solvency reserve will continue to be investigated for future valuations.
- I am satisfied with the suitability of the Fund's investment strategy, the nature of the assets of the Fund and that the matching of the assets with the liabilities is, in my opinion, adequate.
- Given the current financial condition and size of the Fund, the self-insurance of death and ill-health retirement risks remains appropriate.
- On the basis that the Fund was 121.5% funded on a best estimate basis as at the valuation date (and has therefore met its minimum funding objectives) and that the employer contribution shortfall of some 1.3% of salaries is expected to reduce the minimum funding level by some 0.27% per annum, the Fund was in a sound financial position as at the valuation date and should remain in a sound financial position until the next actuarial valuation of the Fund expected to take place effective 31 March 2016. The Fund's assets as at the valuation date were, however, only some 83.1% of the total of the Fund's liabilities and recommended solvency reserves and contingency reserves,

# Section 1: Introduction

## 1.1 Background

This report on the statutory actuarial valuation of the Government Employees Pension Fund (“*GEPF*” or “*the Fund*”) as at 31 March 2014 (“*the current valuation date*”) has been prepared for the Trustees of the Fund in my capacity as the appointed valuator of the Fund and as an associate of Towers Watson (Pty) Ltd (“*Towers Watson*”).

The previous statutory valuation (“*the previous valuation date*”) was carried out by Towers Watson as at 31 March 2012. The period between the previous valuation date and the current valuation date is referred to hereinafter as the “*inter-valuation period*”.

## 1.2 Registration and operation

The Fund is a defined benefit pension fund that commenced in 1973, changing its name to the Government Employees Pension Fund in 1996. This is the eleventh valuation of the Fund and the second valuation to be performed by Towers Watson. Where appropriate, comparative results for the 31 March 2012 valuation have been reflected in the report.

For the purposes of the valuation, in-service members are categorised as follows in the rules of the Fund:

- “*Services*”, which relates to members of the South African National Defence Force (SANDF), South African Police Service (SAPS), Correctional Services (CS), National Intelligence Agency (NIA) and South African Secret Service (SASS).
- “*Other*”, which relates to members not employed by the above employers.

Members contribute at the rate of 7.5% of pensionable salaries and the participating employers are required to meet the balance of the cost of providing benefits. The employer contributed at a rate of 16% of pensionable salaries in respect of *Services* members and 13% in respect of *Other* members over the inter-valuation period.

## 1.3 Objectives of the valuation

The objectives of the statutory valuation of the Fund are:

- to investigate and report on the financial position of the Fund on an ongoing basis by assessing whether the funding level meets the minimum funding requirement as outlined in rule 7.2 and the requirements of the Fund’s Funding Policy;
- to analyse the financial progress of the Fund since the previous statutory valuation;
- to analyse the sources of any surpluses or strains that have arisen in the inter-valuation period;
- to determine the assumptions to be used in the current valuation as a result of that experience;
- to review the allocations to and the build-up of, any contingency reserve accounts;

- to determine the required employer contribution rate for the period to the next valuation in respect of future service accrual and the expected strain or release to the Fund if the employers contribute at a different rate;
- to comment on the appropriateness of the investment strategy in place at the current valuation date; and
- to form the basis for consideration by the Trustees of the pension increases to be granted to pensions in payment over the period to the next valuation.

## 1.4 Previous valuation

The previous statutory valuation of the Fund was carried out as at 31 March 2012. That valuation disclosed that the Fund was 102.7% funded on a best estimate basis and therefore met the minimum funding level at that date. The assets were some 70.4% of the liabilities and the recommended solvency reserves and contingency reserves, which was less than the target long-term funding level of 100%.

The required employer contribution rate was 19.3% of pensionable salaries in respect of *Services* members and 14.7% in respect of *Other* members for the two year period following the previous valuation date. The employer contributed at the rate of 16% and 13% over the two year period.

## 1.5 Current valuation

This report sets out the results of the actuarial valuation of the Fund as at 31 March 2014, on the basis of the Rules of the Fund. A summary of the benefits is set out in Appendix A. The membership data used in the valuation, including all the adjustments required, is summarised in Appendix B.

Except where expressly stated in the report, we have relied upon the accuracy and completeness of information made available to us.

The administrators of the Fund, the Government Pensions Administration Agency (*“the Administrator”* or *“GPAA”*), supplied us with the membership and financial information necessary to perform this actuarial valuation. The results of the actuarial valuation depend upon the accuracy and completeness of this data. We have checked this data for consistency with the Fund’s audited financial statements and with the data supplied at the previous valuation date.

The Administrator has also confirmed that the data supplied for the purposes of the valuation is complete and correct.

We confirm that we are satisfied that the information provided, following the various adjustments detailed in Appendix B, is materially complete and sufficient for the purposes of this valuation.

## 1.6 Capacity, brief and professional guidance

This report has been prepared in accordance with the GEP Law, which requires that the Fund shall have its financial condition investigated and reported upon by a valuator at least once in every three years. However, due to the significant changes in liability and asset values seen over the past few years, it is recommended that the Fund continue the practice of performing biennial actuarial valuations. More frequent actuarial valuations provide the Trustees, the employers and GEPF management with more regular, up-to-date financial management information.

The report takes into account the requirements set out in professional guidelines for actuarial reports (Standard of Actuarial Practice 201) issued by the Actuarial Society of South Africa, current as at the date of signature of the report. In addition, and although the Fund is not subject to the Pension Funds Act, the report takes into account the requirements of Board Notice 149 of 2010 issued by the Registrar of Pension Funds.

This report has been peer reviewed in terms of Towers Watson's standard internal peer review process. This internal peer review does not constitute a Formal Review as defined in the Explanatory Note on Peer Review issued by the Actuarial Society of South Africa.

The information contained in this report and in all documents referred to in this report is confidential. This report is addressed to the Trustees of the Fund and has been prepared for use by the Trustees and should not be used by any other party, or for purposes not specifically catered for herein. It may be submitted to the relevant stakeholders of the Fund with the approval of the Trustees.

Towers Watson does not accept any liability to any person other than the Trustees, in connection with this report or its related enquiries. We accept no liability in respect of any matter outside the scope and limitation of this report and purpose for which it is prepared.

## Section 2: Developments since the previous valuation

### 2.1 Changes in benefits

Since the previous valuation date, there were various changes in benefits that are discussed in detail as follows (some of these changes fall outside the valuation period, but have been reflected below for completeness):

#### 2.1.1 “Clean break” principle on divorce benefits

Previously, the Rules of the Fund did not allow the former spouse of a member to claim a portion of the member’s pension interest, in terms of a divorce order or an order for the dissolution of a customary marriage, until the date of exit of the member from the Fund. The rules were amended with effect from 1 April 2012 to provide for the ‘clean-break’ principle, which allows the former spouse to claim a portion of the member’s pension interest at the date of divorce, i.e. *before* the member exits the Fund. This change aligned the Rules with the provisions of the GEP Law and the Pension Funds Act.

The amount paid to the former spouse is recorded as a “divorce debt” against the member’s Fund benefit at the date of payment of the divorce benefit to the former spouse. The divorce debt is settled on the date on which a benefit is subsequently paid to the member. The debt accrues interest between the above-mentioned dates as determined from time to time by the Trustees at the rate or rates of interest payable in respect of monies owed to the Fund.

#### 2.1.2 Benefits on Resignation or Discharge

With effect from 1 April 2012, the Rules of the Fund were amended to provide for a minimum benefit to be paid on resignation or discharge equal to the member’s “Actuarial Interest” in the Fund at the date of resignation or discharge, as appropriate.

#### 2.1.3 Spouses reversion option for pensioners

With effect from 1 April 2012, each pensioner of the Fund on that date was given the option to sacrifice a portion of the monthly pension to instead increase their contingent spouses’ pension from 50% to 75% of the pension which the pensioner receives on the date of his or her death. The option was initially open for a window period starting on 1 April 2012 and ending on 1 September 2012 but the option period was subsequently extended to 31 December 2012.

#### 2.1.4 Funeral benefits and Orphans pension

The Rules of the Fund were amended with effect from 1 April 2012, to change the eligibility criteria for orphans pensions and funeral benefits. Orphans of pensioners, whose pension commenced prior to 1 December 2002 and who were still alive as at 1 April 2012, now become eligible for the orphans pension and funeral benefit in terms of the Rules of the Fund.

## 2.2 Pension increases

Pension increases were granted as at 1 April 2012, 1 April 2013 and 1 April 2014 to pensions in course of payment. These increases have been taken into account for valuation purposes. A special catch-up pension increase (the “catch-up”) to 100% of the change in the consumer price index (“CPI”) since the date of retirement was granted for each pensioner if required as at 1 April 2012, 1 April 2013 and 1 April 2014. The following table summarises the pension increases (excluding any catch-ups) granted over the past three years:

Date of increase	Increase percentage	Headline inflation to preceding 30 November
01 April 2012	4.8%	6.2%
01 April 2013	6.0%	5.6%
01 April 2014	5.3%	5.3%

The Board of Trustees have adopted a formal pension increase policy in order to give effect to section 25 of the GEP Law and GEPF Rule 23, to establish the pension increase that is affordable and to guide the Trustees in their determination of the annual pension increase. According to Rule 23, the Fund aims to grant minimum pension increases, if affordable, of 75% of inflation (basic increase) subject to a minimum pension equal to 75% of the original pension increased with full inflation.

Further details of the pension increase policy are set out in Appendix A.

## 2.3 Investment Return on the Fund’s assets

The investment return on the Fund’s assets is approximated by the change in the Notional Portfolio Index (“NPI”). The NPI is calculated each month and is based on the estimated returns earned by the Fund, as provided by the Fund’s asset consultants. Furthermore the return in each financial year is rebased to the returns approximated by the market values and cash flows reflected in the annual financial statements.

The annualised returns, available as at date of signature of this report and as derived from the annual financial statements, for the period 1 April 2012 to 31 March 2014 are tabled below:

Financial Year	Annualised Net Fund Return
1 April 2012 to 31 March 2013	18.97%
1 April 2013 to 31 March 2014	15.42%
<b>Annualised return over period</b>	<b>17.18%</b>

## 2.4 Salary increases

The Public Service Co-ordinating Bargaining Council (“the PSCBC”) released the salary adjustments for the periods 2012/2013 and 2013/2014 according to the multi-term agreements on 31 July 2012.

The salary adjustment for public servants for the periods commencing 1 April 2012, 1 April 2013 and 1 April 2014 were the average projected CPI as per National Treasury plus 1%. These increases are in line with the long-term valuation assumption in respect of salary increases.

During the inter-valuation period, salary increases were actually granted to in-service members as at 1 May 2012, 1 April 2013 and 1 April 2014. These increases have been taken into account for valuation purposes. The following table summarises the average salary increases granted over the three years:

Date of increase	Increase (%)
1 May 2012	7.0%
1 April 2013	6.6%
1 April 2014	7.4%

## 2.5 Contribution rates paid

The participating employers undertake to meet the balance of the cost of providing benefits. The employers contributed at a rate of 16% of pensionable salaries in respect of *Services* members and 13% in respect of *Other* members over the valuation period.

The required employer contribution rate as at the previous valuation date, based on the valuation basis, was 19.3% in respect of *Services* members and 14.7% in respect of *Other* members. On this basis, there was a shortfall of 3.3% in respect of “*Services*” members and 1.7% in respect of *Other* members.

## 2.6 Self-insurance of death and disability benefits

The benefits payable on the death or ill-health retirement of a member are not covered by any policies of insurance, but are rather “self-insured” by the Fund. These benefits are allowed for in the calculation of members’ actuarial reserve values, i.e. they are funded for in the past service liability, and are provided for in the future service contribution rate.

Given the size and current financial condition of the Fund, I consider that the self-insurance of death and ill-health retirement benefits remains appropriate.

## 2.7 Extraordinary changes in membership

There have been no extraordinary changes in the membership of the Fund over the inter-valuation period.

## 2.8 Changes in investment profile

The profile of the assets held by the Fund has changed over the inter-valuation period, as reflected by the assets in each asset class at the current and previous valuation dates:

Asset class allocation	31 March 2014	31 March 2012
Cash	3.6%	3.9%
Domestic Bonds	30.4%	35.0%
Domestic Property	0.7%	3.1%
Domestic Equity	59.1%	52.3%
Foreign Bonds	1.9%	2.5%
Foreign Equity	4.3%	3.2%
	<b>100.0%</b>	<b>100.0%</b>

Overall, the Fund's holdings in cash and bonds has decreased by 5.5% with a corresponding increase in the equities held by the Fund. I consider the profile of the assets still to be suitable for the Fund.

## 2.9 Any other change deemed relevant by the actuary

There are no further material items to report over the inter-valuation period.

## Section 3: Assets of the Fund

### 3.1 Assets of the Fund

The fair value of the Fund's assets as at 31 March 2014, taken from the audited financial statements, is broken down as follows:

	R'000	R'000	Percentage of the Fund
<b>Local investments</b>		<b>1 333 894 626</b>	<b>93.6%</b>
Shares in companies	840 822 194		59.0%
Bills, Bonds and Securities	432 083 462		30.3%
Property	9 594 759		0.7%
Money Market	43 858 316		3.1%
Loans	7 407 070		0.5%
Equipment	6 172		0.0%
Collective Investment Schemes	122 653		0.0%
<b>International investments</b>		<b>89 016 056</b>	<b>6.2%</b>
Shares in companies	1 931 635		0.1%
Bills, Bonds and Securities	27 344 255		1.9%
Collective Investment Schemes	59 740 166		4.2%
<b>Current Assets</b>		<b>27 040 586</b>	<b>1.9%</b>
Cash on hand	15 207 523		1.1%
Arrear contributions	5 456 338		0.4%
Funding loan	6 716		0.0%
Transfer receivable	4 261		0.0%
Accounts receivable	6 365 748		0.4%
<b>Current Liabilities</b>		<b>(23 658 312)</b>	<b>-1.7%</b>
Accounts payable	(1 384 030)		-0.1%
Benefits due	(22 270 952)		-1.6%
Transfers payable	(848)		0.0%
Provisions	(2 482)		0.0%
<b>Non-current Liabilities</b>		<b>(574 270)</b>	<b>0.0%</b>
Unclaimed benefits	(574 270)		0.0%
<b>Total</b>		<b>1 425 718 686</b>	<b>100.0%</b>

The assets have been valued at fair value, as disclosed in the financial statements of the Fund, since this is considered to be consistent with the best estimate valuation basis adopted for the valuation of the actuarial liabilities.

### 3.2 Net Asset Attribution

The assets of the Fund have been allocated to the Fund accounts as shown in the table below:

Account	31 March 2014 R'000
Accumulated Funds	1 419 075 891
Contingency reserves	6 642 795
<b>Total net assets</b>	<b>1 425 718 686</b>

The table represents the split of the assets as reflected in the audited financial statements. For the purposes of the valuation, we have not retained all of these reserves and have also retained some other contingency reserves – these are not reflected in the balance above.

### 3.3 Investment Returns earned over the period

The assets of the Fund have not been separately assigned to any particular categories of membership or reserve accounts. As such, the overall Fund returns as approximated by the change in NPI, rebased to the financial statements, for the period 1 April 2012 to 31 March 2014 is tabled below:

Financial Year	Annualised Net Fund Return
1 April 2012 to 31 March 2013	18.97%
1 April 2013 to 31 March 2014	15.42%
<b>Annualised return over period</b>	<b>17.18%</b>

### 3.4 Investment Strategy of the Fund

The Trustees of the Fund in consultation with the employers are responsible for the investment of the Fund's assets, and need to ensure that the investment strategy of the Fund remains appropriate given the nature of the Fund's liabilities. In respect of occupational funds, Board Notice 149 of 2010 issued by the Registrar of Pension Funds requires the actuary to the Fund to comment on the appropriateness of the Fund's asset strategy relative to its liabilities as part of the valuation report.

In this regard it should be noted that the Fund's entire investment portfolio is managed on a market-linked basis, which means that the returns are expected to be volatile and, in particular, there may be negative returns for some periods. The Fund's assets are invested in a mixture of asset classes, including South African equities, bonds, property and cash and international assets.

A relatively high proportion of these assets is invested in equities and property. These are 'real' assets in the sense that over the long term they are expected to deliver an investment return above (and linked to) the rate of price inflation. This asset class provides a reasonable match to the Fund's liabilities which are closely linked to future salary and pension inflation (which in turn are linked to price inflation).

Other factors that the Trustees and the employers should consider include:

- The employer 'underwrites' the Fund in the sense that the employer would be obliged to pay a higher rate of contributions or lump sum amounts to the Fund in the event that it was under funded, to the extent that it is unable to meet its ongoing benefit obligations.
- As long as the Fund continues in its current form, its liabilities are long term, in that benefits are not paid out to members until the point at which they retire, die or leave. It is therefore appropriate also to adopt a long-term view with regard to the Fund's investment strategy. On this basis it is reasonable to invest a significant proportion of the Fund's assets in equities, which are generally expected to deliver a higher long-term investment return than the other asset classes in which the Fund invests.
- Following from the above point, and whilst the funding level is currently above the Minimum Funding Level, the Fund is not able to set aside the recommended solvency reserves and contingency reserves to protect the Fund in the case of adverse investment performance, improvements in pensioner mortality and other contingencies.
- A disadvantage of equity investment is that the capital value of the investments can be volatile in the short term. A consequence of the Fund's investment strategy is that there may be times when there are significant falls in the Fund's value of assets. The amount allocated to the Solvency Reserve (had it been fully funded) would provide a margin to protect the Fund against such volatility, but given the level of funding of that reserve, may not be sufficient.
- The Fund does not have a specific asset strategy in place for the assets backing pensioner liabilities. Typically, such a strategy would involve a higher exposure to South African bonds (including inflation-linked bonds), and a reduction in equity exposure, compared to the current strategy. It is our understanding that the investment strategy adopted for the overall Fund assets has been based on a weighted average of the investment strategy applicable to in-service members and to pensioners.
- The Fund holds a lower percentage of foreign assets than might otherwise be suggested purely in terms of the risk diversification of assets.
- The Trustees and the employers should continue to consider the appropriateness of the assets in the light of the nature of the Fund, the employer covenant, the current funding level, the desired level of future pension increases and the required and affordable contribution rates by the employers.

Taking the above factors into account, the current asset strategy of the Fund remains reasonable as at the valuation date in relation to the liability profile of the Fund. The strategy, however, does imply that the Fund ideally needs to hold reasonable investment risk contingency reserves (solvency reserves) in order to have an acceptable probability of being able to meet the reasonable benefit expectations of in-service members and pensioners without calling on the employers to fund the effect of any volatility in the level of the assets.

The position should be kept under review, and assessed again no later than the effective date of the next statutory valuation, expected to be as at 31 March 2016.

As such we are satisfied with the structure of the assets backing these liabilities and that the matching of the assets with these liabilities is, in our opinion, adequate. We point out that the mismatch may result in a surplus or deficit arising in future which would not otherwise have been the case.

# Section 4: Valuation Basis and Methodology

## 4.1 Valuation methodology

### 4.1.1 Assets

For the purposes of this valuation, the actuarial value of assets has been taken into account at a level **equal to** the market (or fair) value of the assets. The market value of the Fund's assets as at the valuation date has been derived from the audited annual financial statements. A comparison between the value of assets and liabilities of the Fund is only meaningful if the respective values are determined on a consistent basis. We note that the liabilities have been calculated using market-related assumptions at the valuation date and thus we consider it appropriate to take into account the full market value of the Fund's assets.

### 4.1.2 Funded benefits

The actuarial valuation in respect of in-service defined benefit members and Fund pensioners was considered in two parts:

- Pensionable service and accrued benefits up to the valuation date. The accrued liabilities associated with these are compared to the Fund's assets to determine the funding level in respect of past service; and
- Pensionable service after the valuation date (in-service members only). The required employer contribution rate in respect of future service benefits is considered in section 7.2 and again in greater detail in Appendix G of this report.

The accrued liabilities have been calculated as the present value of the benefits that have accrued to defined benefit members in respect of service to the valuation date, allowing for future salary increases, expected benefit payments prior to retirement, and for pensions, including annual pension increases, payable after retirement on a basis consistent with past practice and with communication to members and pensioners.

The required contribution rate for future service pension benefits (including withdrawal, death-in-service and normal/early/ill-health retirement pensions) for the in-service members has been established by calculating the contribution rate that is required in respect of benefits accruing over the two years following the valuation date with salaries projected to retirement date for pension benefits. This method, known as the Projected Unit Method, produces an accurate estimate of future service costs provided new entrants enter and exits leave the Fund at such a rate that its composition by age, salary and gender remains stable and provided the actual experience does not differ markedly from the assumptions made.

Over the inter-valuation period from 31 March 2012 to 31 March 2014, the average age of the in-service members of the Fund increased slightly from 44.1 years to 44.5 years, resulting in a small increase in the liabilities and the future service contribution rate, all else being equal. In practice though, the impact of this is negligible and it is the change in the valuation basis and methodology that has led to a material decrease in the required contribution rate.

In the future, this required contribution rate may change if:

- there is any change in the Fund's benefit structure;
- the membership profile of the Fund changes materially; or
- the assumptions and method used at future valuations are different from those used for the current valuation.

#### 4.1.3 Expenses

The future expenses of the Fund are not funded out of any specific reserve. As such an allowance for the administration and other expenses incurred by the Fund equal to 0.3% of pensionable salaries has been included in the assessment of the required contribution rate. This expense allowance is based on the budgeted expenses for the year following the valuation date.

The budgeted expenses do not include an allowance for the investment management fees which are deemed to be included in the discount rate, i.e. for valuation purposes they are assumed to be offset from the investment returns earned by the Fund.

#### 4.2 Summary of the valuation basis

In the case of in-service members and pensioner liabilities, the value of the liability depends upon, *inter alia*, the future:

- investment returns;
- salary increases (pre-retirement) and pension increases (post-retirement);
- mortality (pre and post retirement); and
- retirement rates (including ill-health retirement).

The actuarial valuation basis is set on a *best estimate basis*, meaning that there is a 50% chance that the assumptions will be too conservative or too optimistic. To the extent that the actual experience of the Fund differs from the valuation assumptions, a surplus or deficit will arise.

A detailed analysis of the best estimate assumptions made in the valuation of the Fund is set out in Appendix D.

#### 4.2.1 Financial Assumptions

A summary of the best estimate financial assumptions, with a comparison to the previous valuation assumptions, is indicated in the following table.

Financial Assumptions	Best Estimate 31 March 2014	Best Estimate 31 March 2012
A. Long-term inflation	6.90% p.a.	6.70% p.a.
B. Long-term salary increases	7.90% p.a.	7.70% p.a.
C. Pension increases (80% x A)	5.50% p.a.	5.40% p.a.
D. Net long-term investment return	11.40% p.a.	11.20% p.a.
<b>Net pre-retirement discount rate <math>[(1+D)/(1+B)]-1</math></b>	<b>3.24% p.a.</b>	<b>3.25% p.a.</b>
<b>Net post-retirement discount rate <math>[(1+D)/(1+C)]-1</math></b>	<b>5.59% p.a.</b>	<b>5.50% p.a.</b>

The table reflects a slight decrease in the net pre-retirement discount rate and an increase in the net post-retirement discount rate, which will result in, all else being equal, a slight decrease in the past service liabilities and the required contribution rate.

#### 4.2.2 Demographic assumptions

A detailed investigation has been carried out by Towers Watson to examine the recent demographic experience of the GEPF. Given the size of the Fund and, consistent with the approach adopted by the previous actuaries to the Fund, our proposal is therefore to use the demographic experience of the GEPF as per the latest experience investigation carried out as at 31 March 2012.

We propose further that the family statistics assumptions (e.g. proportion of members married at retirement and the age difference between husband and wife) be retained for the current valuation.

The demographic assumptions are discussed in greater detail in Appendix D.

Adoption of the revised demographic assumptions has resulted in a decrease in the past service liabilities and the required contribution rate.

## Section 5: Funding Policy and Objectives

Rule 7.2 of the Fund's Rules requires that employer contributions should be sufficient to ensure that the Fund is able to meet its obligations at all times, subject to a minimum funding level of 90%.

In line with the point above, the Fund's Board of Trustees has adopted a Funding Level Policy (effective 24 August 2009) which provides guidance on when to recommend contribution increases or reductions, and when to consider benefit improvements. The following definitions are used in the Funding Level Policy to describe the manner in which it is to be applied:

**Minimum Funding Level:** The ratio of the market value of the Fund's assets to its liabilities, calculated on a best estimate basis with no solvency reserves and contingency reserves and no margins for conservatism.

**Long-Term Funding Level:** The ratio of the market value of the Fund's assets to its liabilities, calculated on a best estimate basis with realistic solvency reserves and contingency reserves and allowance for future mortality improvements (and no margins for conservatism). The solvency and contingency reserves determined should be those which the Trustees deem to be realistic in the long-term (without undue margins of conservatism).

**Maximum Funding Level:** The ratio of the market value of the Fund's assets to its liabilities, calculated on a best estimate basis with solvency reserves and contingency reserves which may include conservative provisions. The intention is that the excess of assets over the liabilities plus reserve balances on this basis is unlikely to be required to ensure the future solvency of the Fund.

One of the funding objectives outlined in this policy is to ensure that the minimum funding level does not fall below 90%. If it does fall below 90%, then the employer should increase its contributions to the Fund to restore the minimum funding level to at least 90% within three years. The minimum funding objective is considered to be the Fund's primary funding objective.

The Fund will also strive to maintain the long-term funding level at or above 100%. If the long-term funding level is above 100%, the Trustees can consider granting pension increases greater than the minimum increases (as per rule 23.2) or other benefit improvements. If the long term funding level is below 100%, the trustees should consider taking steps to correct this in the medium term. This can be considered as the Fund's secondary funding objective.

We would note that notwithstanding the secondary funding objective, as described above, pension increases in excess of the minimum 75% increases have been granted by the Trustees, with actual pension increases matching inflation on average over the last 10 years.

## Section 6: Contingency Reserve Accounts

The Trustees have deemed it appropriate, on the advice of the valuator, to establish a number of solvency reserve and contingency reserve accounts. Some of these reserve accounts are reflected in the Fund's financial statements and the others are reflected in the valuation report alone.

Furthermore, some of the reserve accounts (namely the Data Reserve and the Past Discriminatory Practices Reserve) have historically been included with the liabilities in determining the minimum funding level, whereas the other reserves are only considered in determining the long-term funding level.

Full details of the assumptions and motivations for the various reserve accounts can be found in Appendix F. We have reflected below, the level of the various accounts and the degree to which these reserve accounts can be funded at the current and previous valuation dates:

Contingency Reserve Accounts	31 March 2014 (recommended) R million	31 March 2014 (established) R million	31 March 2012 (recommended) R million	31 March 2012 (established) R million
<b>Fully funded and considered as part of the minimum funding level:</b>				
In-service member data (Appendix F1)	6 590	6 590	10 050	10 050
Discriminatory practices reserve (Appendix F2)	6 492	6 492	4 711	4 711
<b>Funded to the level affordable and considered as part of the long-term funding level:</b>				
Solvency reserve (Appendix F3)	303 000	141 155	254 000	14 954
100% CPI Reserve (Appendix F5)	204 457	95 247	183 553	10 808
Mortality Improvement (Appendix F6)	33 918	15 801	26 628	1 568
<b>Combined Reserves</b>	<b>554 457</b>	<b>265 285</b>	<b>478 942</b>	<b>42 091</b>

The reserve accounts reflected in Appendix F1 and Appendix F2 have therefore been funded in full, whilst the reserves in the balance of the sections have been funded to the extent affordable, namely some 46.6% as at the valuation date (some 5.9% at the previous valuation).

## Section 7: Valuation Results

In considering the results of the valuation it is important to separate past service accrued benefits (i.e. service rendered up to the valuation date) from future service (i.e. service to be rendered after the valuation date). The accrued service actuarial liabilities and determination of the required contribution rates are set out in detail in Appendix G.

### 7.1 Past Service: Financial Status

In respect of past service, the value of the accrued service actuarial liability is compared with the fair value of the assets at the valuation date.

The accrued service actuarial liability is the amount of money that would be required in the Fund at the valuation date to fund existing pensions and to provide the existing members with retirement benefits based on their pensionable service rendered to the valuation date and on their estimated pensionable emoluments at retirement date. In addition, allowance is made for the accrued portion of the value of the spouse's pension that applies on death, for members who die in service before retirement. No specific allowance is made for withdrawal from the Fund as members receive their full Actuarial Interest in the Fund on resignation or discharge.

The difference between the fair value of the assets and the accrued service actuarial liability is the past service surplus or, if negative, the past service deficit at the valuation date. The valuation revealed a surplus of R252 203 million on the minimum funding basis and is made up as follows:

Financial position as at	31 March 2014 R'm	31 March 2012 R'm
Fair value of assets	1 425 719	1 038 946
Less In-service member liability	(878 721)	(773 805)
S-case and exits in progress liability	(18 155)	-
Pensioner liability	(263 552)	(223 049)
Deferred pensioner liability	(6)	(1)
Data reserve	(6 590)	(10 050)
Past discriminatory practice reserve	(6 492)	(4 711)
<b>Past service surplus before reserves</b>	<b>252 203</b>	<b>27 330</b>
<b>Minimum funding level <sup>(1)</sup></b>	<b>121.5%</b>	<b>102.7%</b>
Less Mortality improvement reserve	(33 918)	(26 628)
Pension increase reserve (past service)	(119 539)	(105 614)
Pension increase reserve (future service)	(84 918)	(77 939)
Solvency reserve	(303 000)	(254 000)
<b>Past service surplus after reserves</b>	<b>(289 172)</b>	<b>(436 851)</b>
<b>Long term funding level <sup>(2)</sup></b>	<b>83.1%</b>	<b>70.4%</b>

Given that the full recommended solvency reserve and contingency reserve accounts cannot be established, we recommend that the reserves be limited to the amount available, i.e. R252 203 million.

## 1. Minimum Funding Level

The minimum funding level at the valuation date, which is determined as the fair value of the assets divided by the liabilities (excluding solvency reserves and contingency reserves) is 121.5% and therefore exceeds the Trustees' targeted minimum funding level of 90%. At the previous valuation date, the minimum funding level was 102.7%.

## 2. Long-term Funding Level

The long-term funding level, which is determined as the fair value of the assets divided by the liabilities and the recommended solvency reserves and contingency reserves (including the future service element of the pension increase reserve) is 83.1% at the current valuation date, which is below the Trustees' targeted long-term funding level of 100%. The Trustees are therefore only able to establish the solvency reserves and contingency reserves to the extent of R252 203 million, some 46.6% of the recommended solvency reserves and contingency reserves of R541 375 million.

The corresponding long-term funding level at the previous valuation date was 70.4%. Thus the Trustees were only able to establish the solvency reserves and contingency reserves to the extent of R27 330 million, some 5.9% of the recommended solvency reserves and contingency reserves.

## 7.2 Future Service: Required Contribution Rate

### 7.2.1 Required future contribution rate

The required contribution rate by the employers, expressed as a percentage of pensionable salaries, at the current and previous valuation dates, without having regard to the funding level of the Fund, is reflected in the table below:

Required Contribution Rate	31 March 2014	31 March 2012	31 March 2010
Total required contribution rate	22.3%	22.9%	21.4%
Less: Contributions by members	(7.5%)	(7.5%)	(7.5%)
<b>Required employer contribution rate</b>	<b>14.8%</b>	<b>15.4%</b>	<b>13.9%</b>
Current average employer contribution rate	13.5%	13.5%	13.5%
<b>Excess / (shortfall) between actual and required contribution rate</b>	<b>(1.3%)</b>	<b>(1.9%)</b>	<b>(0.4%)</b>

The total required contribution rate includes the contributions in respect of the funded benefits and an allowance for annual Fund expenses and reflects the average required contribution rate in respect of both "Services" and "Other" Members. The current employer contribution rate represents the average of the 16% contribution rate in respect of Services members and the 13% contribution rate in respect of Other members.

### 7.2.2 Breakdown of required contribution rate by employer type

The theoretical underlying required contribution rates for the categories *Services* and *Other* as at 31 March 2014, reflected at the current and previous valuation dates, are shown below:

Required Contribution Rate split by employer	31 March 2014		31 March 2012	
	Services	Other	Services	Other
Funded benefits	25.6%	21.2%	26.5%	21.9%
Allowance for Fund expenses	0.3%	0.3%	0.3%	0.3%
<b>Total required contribution rate</b>	<b>25.9%</b>	<b>21.5%</b>	<b>26.8%</b>	<b>22.2%</b>
Less: Contributions by members	(7.5%)	(7.5%)	(7.5%)	(7.5%)
<b>Required employer contribution rate</b>	<b>18.4%</b>	<b>14.0%</b>	<b>19.3%</b>	<b>14.7%</b>
Actual employer contribution rate	16.0%	13.0%	16.0%	13.0%
<b>Excess / (shortfall) between actual and required contribution rate</b>	<b>(2.4%)</b>	<b>(1.0%)</b>	<b>(3.3%)</b>	<b>(1.7%)</b>

### 7.2.3 Cost of additional pensionable service for Services members

The following table provides an indication of the effect on the contribution rate in respect of members of the *Services* category, who qualify for an additional 25% enhancement to their years of pensionable service greater than 10 years. The results are shown including and excluding the additional 25% enhancement, and at both the current and previous valuation dates:

Additional cost for Services Members	31 March 2014		31 March 2012	
	Including 25%	Excluding 25%	Including 25%	Excluding 25%
Funded benefits	25.6%	21.8%	26.5%	22.7%
Allowance for Fund expenses	0.3%	0.3%	0.3%	0.3%
<b>Total required contribution rate</b>	<b>25.9%</b>	<b>22.1%</b>	<b>26.8%</b>	<b>23.0%</b>
Less: Contributions by members	(7.5%)	(7.5%)	(7.5%)	(7.5%)
<b>Required employer contribution rate</b>	<b>18.4%</b>	<b>14.6%</b>	<b>19.3%</b>	<b>15.5%</b>
Actual employer contribution rate	16.0%	16.0%	16.0%	16.0%
<b>Excess / (shortfall) between actual and required contribution rate</b>	<b>(2.4%)</b>	<b>1.4%</b>	<b>(3.3%)</b>	<b>0.5%</b>

As indicated in the results above, the cost of the service enhancement in respect of *Services* members amounts to approximately 3.8% of pensionable salaries on the *best estimate* valuation basis. This is higher than the difference in contributions actually being paid by the *Services* employers (16%) and “*Other*” employers (13%), but highlights the appropriateness of the difference in contribution rates. The residual difference can be explained by the differing decrement assumptions between the two categories of members.

### 7.2.4 Shortfall in the required employer contribution rate

For a fund governed in terms of the Pension Funds Act, the employer is required to contribute at the required rate determined by the valuator of the fund, or for any contribution shortfall to be funded from an employer surplus account in the fund.

The nature of the Government Employees Pension Fund is somewhat different in that it is governed in terms of the GEP Law and the covenant of the employer is much stronger in terms of being able to meet any funding shortfall in the future.

The Trustees and the employer need to jointly determine the pace of funding, i.e. the employer contribution rate, and an acceptable level of funding, both in the short term and the long term for the Fund.

It should be noted that the shortfall between the required employer contribution rate (14.8% of pensionable salaries) and the current actual employer contribution rate (an average of 13.5% of pensionable salaries) amounts to some R3.2 billion per annum or some 0.27% of the Fund's liabilities.

If the employer continues to contribute at the current rate, the shortfall is therefore expected to reduce the funding level by 0.27% per annum.

### 7.2.5 5% equity risk premium allowance

The valuation basis assumes an "equity risk premium" of 3% per annum, i.e. that portion of the Fund's assets invested in equities will earn a return that is 3% higher than the long-term bond yield assumption. The Trustees have invested a material portion of the Fund's assets in local and foreign equities and property, namely 64.1% as at the valuation date (58.6% at the previous valuation). For valuation purposes, we have assumed that on average 60% of the assets are invested on this basis in the future.

For illustrative purposes, previous valuation reports have also set out the required level of employer contributions if a 5% equity risk premium is assumed. The use of this assumption for determining the future funding requirements must be seen as a risk budgeting exercise for the employers. To the extent that equities over the long term earn a risk premium of 5% over bonds (and other experience is as assumed), the required level of contributions at the rates below would then be adequate. It should, however, be appreciated that the higher the assumed equity risk premium, the lower will be the required contribution rates, but that this also carries a greater risk of requiring additional contributions into the future should experience not be in line with that assumed:

Required Contribution Rate on 5% and 3% Equity Risk Premium	5% Equity Risk Premium		3% Equity Risk Premium (Valuation basis)	
	Services	Other	Services	Other
Funded benefits	20.3%	16.9%	25.6%	21.2%
Allowance for Fund expenses	0.3%	0.3%	0.3%	0.3%
<b>Total contribution rate required</b>	<b>20.6%</b>	<b>17.2%</b>	<b>25.9%</b>	<b>21.5%</b>
Less: Contributions by members	(7.5%)	(7.5%)	(7.5%)	(7.5%)
<b>Required employer contribution rate</b>	<b>13.1%</b>	<b>9.7%</b>	<b>18.4%</b>	<b>14.0%</b>
Actual employer contribution rate	16.0%	13.0%	16.0%	13.0%
<b>Excess / (shortfall) between actual and required contribution rate</b>	<b>2.9%</b>	<b>3.3%</b>	<b>(2.4%)</b>	<b>(1.0%)</b>

Based on a 5% equity risk premium assumption the required employer contribution rate is 13.1% for *Services* members and 9.7% for *Other* members. On this basis, there is an excess contribution of 2.9% for *Services* members and an excess contribution of 3.3% for *Other* members.

Looked at a different way, for the current 16% contribution rate in respect of *Services* members to prove adequate (and other experience is as assumed), an equity risk premium of 3.9% over the long-term bond yield assumption would need to be achieved. Similarly, for the current 13% contribution rate in respect of *Other* members to prove adequate (and other experience is as assumed), an equity risk premium of 3.5% over the long-term bond yield assumption would need to be achieved.

We would suggest that the Trustees and the employer should not rely on the Fund's assets earning this higher equity risk premium over the long-term and that the required employer contribution rate should be considered in terms of the valuation basis, i.e. using a 3% equity risk premium.

## Section 8: Inter-valuation Experience

Even if a valuation is performed on exactly the same basis as was adopted at the previous valuation date, it is to be expected that a surplus or deficit will arise during the inter-valuation period, due to the actual experience of the various factors affecting the Fund differing to some extent from those assumed when calculating the liabilities at the previous valuation date and in assessing the required contribution rate.

It is possible to quantify these differences and, when the analysis is performed at each consecutive valuation, it assists the actuary in deciding if a particular factor giving rise to a surplus or deficit in the Fund is of a temporary or permanent nature. If it appears to be of a permanent nature, an appropriate adjustment can be made to future valuation assumptions.

The fair value surplus on the minimum funding basis was R27 330 million as at 31 March 2012. After establishing the solvency reserves and contingency reserves at the maximum level that was affordable the fair value surplus on the long-term funding basis was Nil as at 31 March 2012.

This fair value surplus on the minimum funding basis has increased to R252 203 million as at 31 March 2014. After establishing solvency reserves and contingency reserves at the maximum level that is affordable, the long-term surplus remains at Nil as at 31 March 2014.

The main factors contributing to the change in the actuarial surplus during the inter-valuation period are set out in the following table.

	Inter-valuation Period Rand million
<b>Surplus on the minimum funding basis</b>	<b>27 330</b>
Interest on opening surplus	9 243
Change in opening surplus	3 281
Investment returns	144 418
Economic assumptions	5 718
Demographic assumptions	40 106
Member contributions	(634)
Employer contributions	(8 838)
Expense allowance	111
Salaries	18 896
Pension increases	(618)
Withdrawal profits	2 115
Retirement profits	8 323
Death in service profits	1 764
Other benefit profits	(67)
Pensioner movements	3 963
Benefits payable impact	(9 085)
Methodology change	588
Release from the data reserve	5 422
Miscellaneous items	167
<b>Surplus on the minimum funding basis</b>	<b>252 203</b>

The full surplus on the minimum funding basis is allocated towards the establishment of solvency reserves and contingency reserves as at the valuation date.

A number of the items in the table above interact with each other and should not be viewed in isolation. Specific comments relative to the more important items in the analysis of surplus are as follows:

**Change in opening surplus:**

This item has arisen as a result of changes to the valuation data effective at the previous valuation date. There have been a number of data corrections verified by the Fund's administrator. There are also a number of records that were not included in the liability at the previous valuation date which now appear in the current data.

**Investment returns:**

A surplus arises to the extent that the investment return achieved on the fair value of the assets was greater than that assumed. The Fund has earned an approximate return, net of management fees, of 17.18% per annum over the two years ending 31 March 2014. This is in excess of the assumed discount rate (11.2%) and has resulted in a substantial gain to the Fund.

**Economic assumptions change:**

This item relates to the changes in the basis, in particular, the change in the net pre-retirement and post-retirement discount rates. There is a slight decrease in the net pre-retirement discount rate and an increase in the net post-retirement discount rates, which will result in, all else being equal, a release of liabilities and a surplus to the Fund.

**Demographic assumptions change:**

The demographic assumptions have changed following an investigation carried as at 31 March 2012. The adoption of the revised demographic assumptions has resulted in a surplus in the Fund. These changes were set out in detail in a separate report prepared for the Trustees of the Fund, but are discussed briefly in Appendix D.

**Employer contributions:**

The actual employer contributions paid are compared with those required at the previous valuation date based on actual salaries and membership. The actual total employer contributions were less than required to fund the benefits accrued over the year. This has resulted in a strain to the Fund.

**Expense allowance:**

An allowance for expenses is made in the required employer contribution rate (0.3% of pensionable emoluments) as per the previous valuation. The actual expenses over the two years were slightly less than the allowance, resulting in a profit to the Fund.

**Salaries:**

Salary increases granted to members during the inter-valuation period were less than expected and this resulted in a profit to the Fund. This is a "technical surplus" arising, because the actual increases awarded were in line with the multi-year agreement between the Employer and bargaining councils, set at inflation plus 1% per annum. The surplus arises because the valuation basis considers inflation

over the long-term (at 6.7% per annum – see Appendix D), whereas inflation over the short-term was lower.

### **Pension Increases:**

This item quantifies the cost of granting pension increases at a level greater than that allowed for in the actuarial assumptions. In practice excess interest earnings would cover this cost, i.e. this cost could be offset against the interest profit reflected above. The previous basis made allowance for pension increases of 5.4% per annum. The average increases granted of 6.0% at 1 April 2013 and 5.3% at 1 April 2014 is higher than this allowance, resulting in a strain to the Fund.

### **Member movement profits:**

This item relates to the profits that emerge on the withdrawal, death, ill-health retirement and retirement of members. We have considered these modes of exit together as there is an interaction between the various exit modes, potentially as a result of the categorisation of the exit data.

Surpluses and deficits arise as a result of the difference between the benefits paid to exiting members and the reserve held in respect of those members, taking account of the assumptions made for exits under these various modes in the valuation basis. We have identified some items which will contribute to the surplus arising:

- On withdrawal members are paid their Actuarial Interest based on a set of factors derived from the valuation results at the previous valuation date. Although these factors were increased following the 31 March 2012 valuation, the revised factors were only implemented on 1 April 2013. Therefore for members who withdrew prior to 1 April 2013, the old lower factors were used in paying benefits. This resulted in a profit to the Fund.
- The Actuarial Interest factors derived from the previous valuation results are smoothed to ensure consistency in the accrual of benefits from one age to the next. The smoothing effect will also result in a profit, particularly at the younger ages, where the valuation liabilities includes promotional increases in salaries to a greater extent than the Actuarial Interest factors.
- Profits have arisen in respect of the allowance made for ill-health retirements, when compared to the actual experience of ill-health retirements. On the basis that the benefit on ill-health retirement is a higher benefit than on resignation or normal retirement, a high assumed rate of ill-health retirement increases the valuation liabilities. To the extent that the expected number of ill-health retirements do not take place, part of the liabilities are released to profit. This outcome is consistent with the decrement investigation performed.

### **Pensioner movements:**

The pensioner movement gain arises as a result of the pensioners experiencing heavier mortality than assumed over the valuation period. This is again consistent with the results of the decrement investigation which suggested that the mortality basis that was in force was too light in respect of female pensioners.

### **Benefits payable movements and methodology change:**

The benefits payable movement strain arises as a result of removing the S-case future payment provision from the data reserve and reflecting the provision as part of the liabilities of the Fund. In addition, the methodology change relates to a change in the calculation methodology applied for

establishing the benefits payable provision in the financial statements for 2013 which has resulted in a profit to the Fund.

**Release from the data reserve:**

This item should be read in conjunction with the above item. Part of the benefits payable provision was held in the data reserve at the previous valuation date, and at the current valuation date, this amount was held as a liability. The balance of the change arises from the change in the liability (since the data reserve is set directly proportional to the size of the in-service member liability).

**Funding the contingency reserves:**

Although the Fund has not been able to establish the full level of the required reserves at the current valuation date, the net surplus arising from the items discussed above allows the Fund to establish the required reserves at a level much higher than previously affordable.

## Section 9: Certification and signature

I certify that:

- The value of the assets of the Fund is sufficient to cover the best estimate accrued actuarial liabilities at the valuation date and therefore the Fund is financially sound on the minimum funding basis;
- The financial condition of the Fund has been assessed by considering the assets of the Fund in relation to its liabilities based on best estimate assumptions;
- In addition, the amount of solvency reserves and contingency reserves to allow for some fluctuations in asset values, improvements in longevity and pension increases equal to inflation have been determined; The Fund does not have sufficient assets to cover the recommended solvency reserves and contingency reserves in full. Allowing for the solvency reserves and contingency reserves in full will reflect a long-term funding level of 83.1%.
- Given that the valuation is of necessity based on assumptions regarding the future, the assessed value of the liabilities, solvency reserves and contingency reserves may prove to be more or less than is required in practice.
- If the liabilities and the amount of the solvency reserves and contingency reserves set up prove to be inadequate in future, Trustee action will be required to rectify the position. This may involve, *inter alia*, the reduction of future benefit accruals or an increase in the required contribution rate, subject to the required consultations in terms of the GEP Law.
- Subject to the above and provided that the employer contributes at a rate of 18.4% of total pensionable salaries in respect of *Services* members and 14.0% in respect of *Other* members, the financial soundness of the Fund on the minimum funding basis should be maintained until at least the next actuarial valuation of the Fund.
- The employer contributed at a rate of 16.0% of total pensionable salaries in respect of *Services* members and 13.0% in respect of *Other* members as at the valuation date. If the employers continue to contribute at these rates, the contribution shortfall is expected to be some R3.2 billion per annum or some 0.27% of the Fund's total liabilities. The minimum funding level would therefore be expected to reduce by some 0.27% per annum.
- The valuation basis assumes a 3% equity risk premium over the long-term bond yield assumption. For illustrative purposes in testing the appropriateness of the current level of contributions, a 5% equity risk premium over the long-term bond yield assumption was also considered. This is a less conservative assumption than that used for valuing the past service financial position of the Fund. The use of this assumption for determining the future funding requirements must be seen as a risk budgeting exercise for the employers. To the extent that equities over the long term earn a risk premium of 5% over bonds (and other experience is as assumed), a lower level of contributions would be adequate. It should, however, be appreciated that the higher the assumed equity premium the lower will be the required contribution rates but that this also carries a greater risk of requiring additional contributions into the future should experience not be in line with that assumed.

Based on a 5% equity risk premium assumption, the required employer contribution rate is 13.1% for *Services* members and 9.7% for *Other* members. On this basis there is an excess contribution of 2.9% for *Services* members and an excess contribution of 3.3% for *Other* members.

For the current 16% contribution rate in respect of *Services* members to prove adequate (and other experience is as assumed), an equity risk premium of 3.9% over the long-term bond yield assumption would need to be achieved. Similarly, for the current 13% contribution rate in respect of

*Other* members to prove adequate (and other experience is as assumed), an equity risk premium of 3.5% over the long-term bond yield assumption would need to be achieved.

- The cost of the service enhancement in respect of *Services* members amounts to approximately 3.8% of pensionable salaries, which is higher than the current difference in contributions paid by and in respect of *Services* and *Other* members, but reflects the reasonable difference in contributions.
- The Trustees and the employer need to jointly determine the pace of funding, i.e. the employer contribution rate, and an acceptable level of funding, both in the short term and the long term for the Fund. In this regard, we would note that:
  - The level of contributions should be monitored as part of each actuarial valuation of the Fund.
  - Rule 7.2 of the Fund's rules states that the employer contributions should be sufficient to ensure that the Fund is able "to meet its obligations at all times, subject to a minimum funding level of 90%". This can therefore be viewed as the primary funding objective of the Fund. The funding level of the Fund of 121.5% as at the valuation date was in excess of the minimum funding level.
  - The Funding Policy of the Fund also stipulates that the Board of Trustees should strive to maintain the long-term funding level at or above 100%. The long term funding level of the Fund at the valuation date equalled 83.1%. The Fund at the valuation date therefore meets its minimum funding level, but as the solvency reserves and contingency reserves are not fully funded, does not meet its long-term funding objective.
- We recommend that the key demographic assumptions used for the Fund be monitored through an experience analysis exercise every three to five years. The previous analysis was carried out as at 31 March 2012. The next analysis should be completed following the next valuation of the Fund, and should include an investigation into any expected future mortality improvements for both in-service members and pensioners.
- The appropriate method of valuing assets, in conjunction with the appropriate level of solvency reserve will continue to be investigated for future valuations.
- I am satisfied with the suitability of the Fund's investment strategy, the nature of the assets of the Fund and that the matching of the assets with the liabilities is, in my opinion, adequate.
- Given the current financial condition and size of the Fund, the self-insurance of death and ill-health retirement risks remains appropriate.
- On the basis that the Fund was 121.5% funded on a best estimate basis as at the valuation date (and has therefore met its minimum funding objectives) and that the employer contribution shortfall of some 1.3% of salaries is expected to reduce the minimum funding level by some 0.27% per annum, the Fund was in a sound financial position as at the valuation date and should remain in a sound financial position until the next actuarial valuation of the Fund expected to take place effective 31 March 2016. The Fund's assets as at the valuation date were, however, only some 83.1% of the total of the Fund's liabilities and recommended solvency reserves and contingency reserves,

Signature:





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**Date:** 9 December 2014

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**Date:** 9 December 2014

**Name** Howard Buck

**Name** Kerrin Lynch

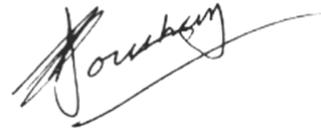
**Qualifications:** Valuator  
B.Sc. FASSA

**Qualifications:** Actuary  
B.Sc. FASSA

**Name of Employer:** Towers Watson  
**Position:** Associate  
**Address:** 1<sup>st</sup> Floor  
 44 Melrose Boulevard  
 Melrose Arch, 2196

**Name of Employer:** Towers Watson  
**Position:** Associate  
**Address:** 1<sup>st</sup> Floor  
 44 Melrose Boulevard  
 Melrose Arch, 2196

Signature:


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**Date:** 9 December 2014

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**Date:** 9 December 2014

**Name** Anderson Pillay

**Name** Colin Southey

**Qualifications:** B.Bus.Sc. (Hons)

**Qualifications:** Peer Review Actuary  
B.Sc. FASSA

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*Our primary professional regulator is the Actuarial Society of South Africa*

# Appendix A: Summary of the Fund

## A.1 Definitions

Concept	Criteria	Definition
<b>N(adj)</b>		Member's adjusted service at termination date
<b>F(Z)</b>	Ages less than 55	A factor determined by the Board of Trustees and the Minister of Finance acting on the advice of the Actuary
<b>FAS</b>		Average pensionable salaries during the last 24 months of pensionable service
<b>A(X)</b>	Ages more than 55	A factor determined by the Board of Trustees and the Minister of Finance acting on the advice of the Actuary
<b>Annuity (A)</b>	Service more than 10 years	$1/55 \times \text{FAS} \times \text{Service} + \text{R}360 \text{ per annum}$
<b>Annuity (A)</b>	Service less than 10 years	Nil
<b>Gratuity (G)</b>	Service more than 10 years	$6.72\% \times \text{FAS} \times \text{Service}$
<b>Gratuity (G)</b>	Service less than 10 years	$15.5\% \times \text{FAS} \times \text{Service}$
<b>Actuarial Interest</b>	Ages less than 55	$N(\text{adj}) \times \text{FAS} \times F(Z)$
<b>Actuarial Interest</b>	Ages more than 55	$G + A \times A(X)$ , with G and A calculated according to the formula for more than 10 years of service
<b>Annuity increases</b>		Determined by the Board of Trustees acting on the advice of the Actuary
<b>Pension age</b>		In accordance with service conditions. For the purposes of this valuation the pension age was assumed to be 60
<b>Pensionable Salary</b>		The basic annual salary plus any other emoluments recognised as pensionable
<b>Pensionable service</b>		Period since commencing service with the employer during which contributions were paid, including any additional service purchased and excluding any periods of leave-without-pay not allowed for in the Rules
<b>Total projected pensionable service</b>		Period from commencement of pensionable service until the normal retirement date at pension age
<b>Prospective service</b>		Period from the current age until the pension age

## A.2 Benefits

Benefit	Criteria	Definition
<b>Normal Retirement</b>	Service less than 10 years	A gratuity equal to member's Actuarial Interest
<b>Normal Retirement</b>	Service more than 10 years	Gratuity (G) and Annuity (A), where: <ul style="list-style-type: none"> <li>● G is increased by 12% for members of the SANDF who are younger than 53 years at retirement</li> <li>● In the case of <i>Services</i> members, pensionable service is increased by 25% for each year of pensionable service in excess of 10</li> </ul>
<b>Early Retirement</b>	Ages less than 60	As for normal retirement but reduced by $\frac{1}{3}\%$ for each complete month between the member's actual and normal retirement date
<b>Late Retirement</b>	Ages more than 60	Benefits as for normal retirement but dependent on Employer approval
<b>Ill-health Retirement</b>	Service less than 10 years	A gratuity of 1.33 times the Gratuity G
<b>Ill-health Retirement</b>	Service more than 10 years	A gratuity of G and an annuity of A with lengths of pensionable service adjusted as below: <ul style="list-style-type: none"> <li>● Pensionable service is increased by the smaller of five years, one third of pensionable service or prospective service</li> <li>● In the case of <i>Services</i> members, pensionable service is also increased by 25% for each year of completed service in excess of 10</li> <li>● The gratuity is increased by 12% for members of the SANDF who are younger than 53 years at retirement</li> </ul>
<b>Death benefit before retirement</b>	Service less than 10 years	A gratuity of the greater of final average salary and Actuarial Interest
<b>Death benefit before retirement</b>	Service more than 10 years	A gratuity of five times Annuity A plus a gratuity of G, where: <ul style="list-style-type: none"> <li>● In the case of <i>Services</i> members, pensionable service is also increased by 25% for each year of completed service in excess of 10</li> <li>● Pensionable service is increased by the smaller of five years, one third of pensionable service or prospective service</li> </ul>
<b>Death benefit before retirement</b>	Potential Service more than 10 years	Spouse's pension of 50% of the Annuity A, where: <ul style="list-style-type: none"> <li>● Pensionable service is based on full potential service</li> <li>● In the case of <i>Services</i> members, pensionable service is also increased by 25% for each year of completed service in excess of 10</li> </ul>
<b>Death benefit after retirement</b>		<ul style="list-style-type: none"> <li>● Spouse's annuity of 50% of the member's annuity, unless the member has elected a 75% spouse's annuity in lieu of a reduced current pension or gratuity.</li> <li>● If death occurs within five years of retirement, then a gratuity of the balance of five years' annuity payments, excluding the R360 per annum payment</li> </ul>
<b>Funeral benefit</b>		A funeral benefit of R7 500 on the death of a member, pensioner or spouse and of R3 000 on the death of an eligible child or a stillborn child

Benefit	Criteria	Definition
<b>Orphan's pension</b>		<ul style="list-style-type: none"> <li>● 10% of the member's annuity on the death of the member or the surviving spouse of the member subject to a minimum determined by the trustees which cannot be less than R200 per month</li> <li>● 10% of the pensioner's annuity on the death of the pensioner. If the orphan's pension becomes payable on the death of a surviving spouse who was in receipt of a spouse's pension, the orphan's pension will be increased by the ratio of the spouse's pension at the date of his or her death to the initial spouse's pension. Effective 31 March 2009, this benefit is subject to a minimum amount determined by the Trustees, which cannot be lower than R200 per month</li> </ul>
<b>Discharge benefit</b>		On discharge due to abolition of post or in the interest of the employer, the benefit is as for ill-health retirement
<b>Resignation benefit</b>		<ul style="list-style-type: none"> <li>● On discharge due to misconduct or resignation or ill-health occasioned by own doing, a gratuity equal to 7.5% x FAS x pensionable service, increased by 10% for each completed year between 5 and 15 years of pensionable service</li> <li>● The benefit is subject to a minimum of the Actuarial Interest from 1 April 2012</li> </ul>
<b>Injury on duty</b>		The rules specify various gratuities and annuities which are payable. These are, however, paid directly by the State and are not funded. They have been ignored for the purpose of this valuation

The above summary outlines the main benefits as they apply to the majority of members. Certain members (such as Directors General, teachers and SANDF members with long service, etc.) may be subject to special provisions, which have not been listed above. We understand that the number of such members is not significant in terms of the overall membership.

### Pension Increase Policy

The Board of Trustees have adopted a formal pension increase policy in order to give effect to section 25 of the GEP Law and GEPF Rule 23, to establish the pension increase that is affordable and to guide the Trustees in their determination of the annual pension increase. According to Rule 23, the Fund aims to grant minimum pension increases, if affordable, of 75% of inflation (basic increase) plus any further increase necessary to ensure a minimum pension equal to 75% of the original pension increased with full inflation.

The GEPF Pension Increase Policy states that in making their pension increase recommendation:

*"8.2.1.1 The B&A Committee will recommend an inflation related increase, comprising of the Basic Increase and, possibly, a Further Inflation Related Increase. In considering the Further Inflation Related Increase, the B&A Committee may take account of the National Treasury's forward estimate of inflation, or anticipated general increases in public service salaries, or increases in social grants, as well as the balance in the Notional Pensioner Account.*

*If the full Basic Increase cannot be granted because of the affordability provision in 10 below, a proportionate share will be granted.*

*The B&A Committee may recommend one or more of a Catch-up Increase and a Supplementary Increase, in addition to the inflation related increase in 8.2.1.1”*

In addition, the pension increase policy states that the Trustees may approve a pension increase recommendation provided that, after the recommended increase, the Fund's funding level is higher than the minimum funding level (see Funding Level Policy below), or where the employer has committed to paying such amounts as will increase the funding level to the minimum funding level, after the recommended increase, within the next three years.

In order to allow the Trustees greater discretion in granting pension increases of 100% of CPI at times when such increases may not otherwise be affordable, an additional reserve has been established, to the extent affordable (see Appendix F).

### A.3 Contribution Rates

The contribution rates being paid at the current valuation date are reflected below:

Contributions	Criteria	Definition
Member contributions		7.5% of pensionable salaries
Employer contributions	Services	16% of pensionable salaries
Employer contributions	Other	13% of pensionable salaries

### A.4 Expenses

Administration and other Fund expenses are borne by the Fund. The expense budget for each of the two years following the valuation date has been set at 0.3% of pensionable salaries.

Additional costs resulting from early retirement or discharge, other than due to ill-health, are borne by the Government or the employer or both (as required in the GEP Law 17(4)).

# Appendix B: Summary of Membership and Data

## B.1 In-service Member Data as at 31 March 2014

Age group	Number of members	Annual pensionable emoluments R'000	Accrued pension R'000	Average past service	Average Liability R'000
<20	587	48 838	789	0 years 7 months	10.97
20-25	26 850	3 618 737	115 765	1 years 9 months	50.52
25-30	116 332	17 230 643	1 146 444	3 years 7 months	113.91
30-35	163 779	25 317 815	2 768 117	5 years 9 months	191.45
35-40	182 406	31 734 561	5 224 591	8 years 4 months	323.75
40-45	225 691	44 637 906	11 181 111	12 years 9 months	577.94
45-50	224 111	47 784 397	16 067 251	17 years 5 months	880.35
50-55	182 478	40 531 770	16 625 124	21 years 4 months	1 179.95
55-60	120 817	26 981 433	12 686 153	24 years 5 months	1 433.86
>60	44 309	8 998 010	4 122 980	23 years 10 months	1 295.70
<b>Total</b>	<b>1 287 360</b>	<b>246 884 110</b>	<b>69 938 325</b>	<b>13 years 8 months</b>	<b>682.57</b>

## B.2 In-service Member Data as at 31 March 2012

Age group	Number of members	Annual pensionable emoluments R'000	Accrued pension R'000	Average past service	Average Liability R'000
<20	503	36 481	787	0 years 9 months	18.25
20-25	32 535	3 633 010	118 905	1 years 8 months	48.09
25-30	126 914	15 818 092	1 020 062	3 years 4 months	99.10
30-35	157 872	21 233 310	2 227 146	5 years 4 months	164.68
35-40	201 442	31 552 870	5 497 584	8 years 9 months	316.75
40-45	234 831	41 193 320	10 902 554	13 years 7 months	555.60
45-50	218 810	40 758 970	13 873 912	17 years 8 months	795.36
50-55	169 838	32 645 756	13 361 742	21 years 4 months	1 042.76
55-60	110 108	20 853 237	9 628 290	23 years 9 months	1 227.17
>60	45 541	8 161 134	3 636 206	22 years 11 months	1 166.49
<b>Total</b>	<b>1 298 394</b>	<b>215 886 180</b>	<b>60 267 188</b>	<b>13 years 5 months</b>	<b>595.97</b>

### B.3 In-service member reconciliation

A reconciliation of the in-service membership from 31 March 2012 to 31 March 2014 is shown below:

	Number of members	Number of members
<b>Number of members in force at 31 March 2012</b>		<b>1 298 394</b>
Data adjustments		25 147
Members removed and exits prior to 31 March 2012		(23 029)
<b>Revised number of members at 31 March 2012</b>		<b>1 300 512</b>
New entrants in the period		123 080
Exits in the valuation period		(136 232)
Withdrawals	(79 048)	
Retirements	(42 336)	
Ill Health	(2 113)	
Deaths	(12 735)	
<b>Number of members in force at 31 March 2014</b>		<b>1 287 360</b>

### B.4 Pensioner Data as at 31 March 2014

Age group	Retired Members	Annual pension R'000	Dependants	Annual pension R'000
< 46	2 061	93 431	18 381	770 508
46-50	4 277	250 370	13 756	548 812
51-55	8 302	551 014	15 027	560 257
56-60	18 778	1 593 593	14 615	518 899
61-65	45 073	4 381 748	14 554	499 582
66-70	56 258	4 454 974	13 914	521 206
71-75	45 751	3 220 943	13 616	572 748
76-80	28 952	2 221 778	12 178	604 013
81-85	14 871	1 301 108	9 346	545 513
>85	9 242	947 279	8 397	554 240
<b>Total</b>	<b>233 565</b>	<b>19 016 238</b>	<b>133 784</b>	<b>5 695 778</b>

### B.5

**B.6 Pensioner Data as at 31 March 2012**

Age group	Retired Members	Annual pension R'000	Dependants	Annual pension R'000
< 45	3 151	130 001	20 632	748 457
46-50	5 363	278 064	13 338	446 722
51-55	10 151	617 786	13 426	430 147
56-60	18 877	1 359 761	13 510	408 845
61-65	41 365	3 133 873	13 211	408 827
66-70	53 317	3 465 797	13 108	456 895
71-75	43 588	2 787 163	13 019	511 357
76-80	25 096	1 775 011	11 439	535 571
81-85	13 709	1 154 059	9 167	500 793
>85	8 290	775 740	7 640	450 186
<b>Total</b>	<b>222 907</b>	<b>15 477 255</b>	<b>128 490</b>	<b>4 897 800</b>

**B.7 Suspended Pensioner Data as at 31 March 2014 and 31 March 2012**

Age group	Suspendeds 2014	Annual pension 2014 R'000	Suspendeds 2012	Annual pension 2012 R'000
< 45	119	2 664	611	14 775
46-50	66	1 455	407	8 789
51-55	88	2 405	409	8 073
56-60	85	1 992	483	9 587
61-65	136	3 470	617	11 511
66-70	135	3 662	704	11 961
71-75	127	3 774	640	10 542
76-80	83	2 184	487	9 242
81-85	81	2 355	398	9 048
>85	100	4 677	385	14 150
<b>Total</b>	<b>1 020</b>	<b>28 638</b>	<b>5 141</b>	<b>107 678</b>

**B.8**

## B.9 Pensioner reconciliation

A reconciliation of the pensioner and suspended pensioner data from 31 March 2012 to 31 March 2014 is shown below:

	Pensioners	Suspended Pensioners
<b>Number of pensioners at 31 March 2012*</b>	<b>356 674</b>	<b>5 141</b>
Deaths prior to 1 April 2012	(541)	-
New pensioners/suspendeds prior to 1 April 2012	8 527	254
<b>Revised number of pensioners at 31 March 2012</b>	<b>364 660</b>	<b>5 395</b>
New pensioners	43 470	-
Suspended pensioners reinstated	1 007	(1 007)
New suspended pensioners	(107)	107
Deaths/Disappearance of pensioners/suspended pensioners	(27 388)	(2 100)
Suspended more than 5 years	-	(1 375)
<b>Number of pensioners at 31 March 2014*</b>	<b>381 642</b>	<b>1 020</b>

\*Includes 5 277 pensioners at 31 March 2012 and 14 293 pensioners at 31 March 2014 that were reflected as retirements or dependants of members who died in service, that were not included in the pensioner data provided. This is largely due to a timing issue – the member has retired or died but the pension has not yet been set up.

## B.10 Deferred Pensioner Data as at 31 March 2014 and 31 March 2012

A reconciliation of the deferred pensioner data from 31 March 2012 to 31 March 2014 is shown below:

	Number of deferred pensioners
<b>Number of deferred pensioners at 31 March 2012</b>	<b>11</b>
Adjustments (Appearance)*	1
Adjustment (non-Fund deferred pensioner)**	(1)
<b>Revised deferred pensioners at 31 March 2012</b>	<b>11</b>
New entrants in the period	-
Exits in the period	-
<b>Number of deferred pensioners at 31 March 2014</b>	<b>11</b>

\* This is a deferred pensioner that was not included in the 2012 data but has subsequently been confirmed by the administrator that this is a Fund deferred pensioner.

\*\* This is in respect of a deferred pensioner that was incorrectly included in the 2012 data. After consultation with the administrator they have confirmed that this member is not a Fund deferred pensioner.

## B.11 Comparative Data

	31 March 2014		31 March 2012	
	Number of members	Annual emoluments / pension R'000	Number of members	Annual emoluments / pension R'000
<b>In-service Members</b>				
Males	549 249	107 647 792	565 358	96 308 168
Females	738 111	139 236 319	733 036	119 578 012
<b>Total</b>	<b>1 287 360</b>	<b>246 884 111</b>	<b>1 298 394</b>	<b>215 886 180</b>
<b>Pensioners / Widow(er)s</b>				
Males	116 034	10 818 371	112 936	9 202 533
Females	251 315	13 893 645	238 461	11 172 522
<b>Total</b>	<b>367 349</b>	<b>24 712 016</b>	<b>351 397</b>	<b>20 375 055</b>
<b>Suspended Pensioners</b>				
Males	329	12 040	1 783	44 116
Females	691	16 598	3 358	63 562
<b>Total</b>	<b>1 020</b>	<b>28 638</b>	<b>5 141</b>	<b>107 678</b>
<b>Deferred Pensioners</b>				
Males	11	223	11	204
Females	-	-	-	-
<b>Total</b>	<b>11</b>	<b>223</b>	<b>11</b>	<b>204</b>

	31 March 2014		31 March 2012	
	Number of members	Annual emoluments / pension R'000	Number of members	Annual emoluments / pension R'000
<b>In-service Members</b>				
Services	226 528	42 686 793	202 682	34 339 895
Other	1 060 832	204 197 318	1 095 712	181 546 285
<b>Total</b>	<b>1 287 360</b>	<b>246 884 111</b>	<b>1 298 394</b>	<b>215 886 180</b>

We have performed a number of reasonability and consistency checks on the data provided by the administrators as well as a comparison of the data used as at 31 March 2012 (the previous valuation date) with that provided as at 31 March 2014 (the current valuation date). These are discussed below in respect of the different types of membership.

## B.12 In-service Member Data Checks

### Membership at the start and the end of the valuation period

A breakdown of the membership reconciliation is provided above. This was used to confirm that the total number of in-service members at the previous valuation, plus any new entrants, less any exits (including S-cases) during the valuation period, matches the total membership as at the current valuation date. The build-up had to be adjusted by 2 119 in-service members at the previous valuation date and 4 978 in-service members at the current valuation date.

The adjustment of in-service members at the previous valuation date is a net adjustment comprised of the following components:

- There were 25 148 in-service members who appeared in the 2014 data set with a pensionable service date prior to 31 March 2012, but who were not included in the 2012 data set as either in-service members or exited members. A large proportion of these members commenced employment shortly before the previous valuation date. These members have been included in the number of members at the start of the period following feedback from the administrators of the Fund.
- There were 256 in-service members who were included in the 2012 final valuation data, but who were in actual fact exited members prior to 31 March 2012 according to the S-case data files provided over the valuation period. These members were excluded from the number of in-service members at the start of the period.
- There were 22 773 in-service members in the 2012 data set, who were not included in the data set used in the valuation as at 31 March 2014. These were members whose records disappeared during the inter-valuation period and were not part of exited members' records. The members were removed from the number of in-service members at the start of the valuation period following query feedbacks from the administrators of the Fund.

The adjustment of in-service members at the current valuation date is in respect of the following:

- There were 4 978 in-service members who were included in the 2014 data set, but were in actual fact exited members prior to 31 March 2014 according to the S-case data files provided over the valuation period. These members were excluded from the number of in-service members at the end of the period.

### Static data checks

The table below shows the changes in respect of "static data" between the current and previous valuation dates, namely 31 March 2014 and 31 March 2012, respectively.

Changes in static data from previous to current valuation date	Records changed
Date of birth	275
Gender	202
Pensionable service date changed by more than 1 year	1 444
Employer category changed from "Other" to "Services"	27 519
Employer category changed from "Services" to "Other"	3 295

The above changes have been queried with the administrators of the Fund. In responding to the queries, the administrators of the Fund have confirmed that these changes were as a result of the data cleansing operation that took place during the inter-valuation period.

### Former Non-Statutory Forces (NSF) Members

We have checked the consistency of the purchase of service provided by the administrators of the Fund with what was calculated by the previous actuaries, in respect of those members who formed part of the valuation membership. There were about 3 000 NSF members whose purchase of service in the current valuation data differs from the purchase of service calculated by the previous actuaries of the Fund by more than 0.5 years. The administrators of the Fund proposed we use the purchase of service calculated by the previous actuaries for these members.

### Checks on date of birth and gender to those implied by member's identity number

We have performed reasonability checks on the date of birth and gender provided in the valuation data to those implied by the member's identity number. The dates of birth and genders provided in the valuation data are reasonably consistent with those implied by the members' identity numbers. The following differences were queried with the administrators of the Fund and the queries were satisfactorily solved:

Description	Total
Date of birth differ from ID	72
Gender differ from ID	1 697

### Missing data

The table below shows the number of missing data within each data entry as at 31 March 2014, the current valuation date.

Description	Total
Date of birth	27
Gender	27
Pensionable service date	18
Salary	15 005
With LWP indicator but missing scale *	3 196
With exit mode but missing date of exit	3 155

\* "Leave without pay" codes are normally provided with a scale indicating whether the service period is to be included or deducted from the member's actual service.

The above queries have been raised with the administrators of the Fund and were resolved to a satisfactory level. Where the queries could not be resolved (e.g. missing salary information), reasonable assumptions have been made.

### Data outside of a reasonable range

The table below shows the number of in-service data entries outside of a reasonable range as at 31 March 2014, the current valuation date.

Description	Total
Date of birth prior to 1 April 1939	981
Pensionable service date prior to 1 April 1964	77
Pensionable service date prior to date of birth	3
Leave without pay of more than 10 years	1 099
Purchase of service of more than 15 years	864
Salary less than the minimum salary	8 422

The above queries have been raised with the administrators of the Fund and were resolved to a satisfactory level.

## Salaries and Contributions checks

### Salaries

The table below shows the number of invalid or unreasonable salaries based on the data provided by the administrators of the Fund as at 31 March 2014, the current valuation date.

Description	Total
Salary equal to 0 or 1	15 005
Other contributors with salaries below R63 000 per annum	8 422

The administrators of the Fund confirmed that they were not able to find any other salary information for these members. We have therefore, assumed the average salary of the Fund in respect of the members with salary equal to 0 or 1 for the purpose of the valuation. With regard to salaries below R63 000 per annum, we have adjusted the salaries to reflect the minimum of R63 000 per annum. The minimum salary of R63 000 per annum is consistent to the minimum salary used as at 31 March 2012 together with average salary increases granted during the valuation period.

### Contributions

The table below shows the salaries including the valuation data salaries adjustments and assumptions as well as salaries implied by the contributions in the financial statements of the Fund as at 31 March 2014, the current valuation date.

Description	Total (R' m)
Salaries – Implied following the adjustments and assumptions	246 884
Salaries – Contribution implied salaries taken from the financial statements	248 886

It is difficult to draw substantive conclusions based on the above reasonability check. The valuation data would reflect salaries at a point in time (i.e. the valuation date) while contributions implied by the financial statements would reflect the salaries during the financial year (i.e. including those of members who exited during the financial year). However, we do not expect significant differences between the two numbers for a fund such as GEPPF and the amounts are not unreasonable.

The difference between the two values has also narrowed since the previous valuation.

## B.13 Pensioner Data Checks

### Membership build-up and adjustments

We performed a reconciliation of pensioners and suspended pensioners. This was used to confirm that the total number of pensioners and suspended pensioners at the previous valuation, plus any new pensioners and suspended pensioners reinstated, less any deaths and new suspended pensioners, matches to the total number of pensioners and suspended pensioners as at the current valuation date. We have adjusted the pensioner membership provided by the administrators of the Fund at the beginning and at the end of the valuation period by 7 986 and 14 293 respectively.

The adjustment to the pensioners is a net adjustment comprised of the following components:

- There were 13 804 pensioners in the 2014 data set with dates of commencement of pensions prior to 1 April 2012 and who were not included in the data set used in the valuation as at 31 March 2012. In the previous valuation, we made an adjustment for the 5 277 pensioners that were reflected as retirements or dependants of members who died in service, but were not included in the pensioner data. The remaining 8 527 pensioners were added to the number of pensioners at the start of the valuation period.
- There were 541 pensioners who appeared in the March 2012 data set, but who had dates of death prior to 1 April 2012 according to the 2014 data. These pensioners have been removed from the number of pensioners at the start of the period.
- There were approximately 12 045 members that appeared in the in-service valuation data as retirements during the valuation period with more than 10 years of pensionable service and who had not been reflected in the pensioner data as new pensioners by 31 March 2014. Furthermore it was approximated that some 2 248 spouses in respect of members who died in service had not been classified as pensioners by 31 March 2014. These retirements and spouses were added to the number of pensioners at the end of the valuation period.

### Static Data Checks

The table below shows the changes in respect of pensioners' static data between the current and previous valuation dates, 31 March 2014 and 31 March 2012, respectively.

Changes on static data from previous to current valuation date	Pensioner
Date of birth	5
Gender	1 050
Pension commencement date	2 776
Pensioner status	16

The above changes have been queried with the administrators of the Fund. In responding to our queries, the administrators of the Fund have confirmed that these changes were as a result of the data cleansing operation that took place during the valuation period. All changes have been either verified or corrected.

### Checks on date of birth and gender to those implied by member's identity number

We have performed reasonability checks on the changed dates of birth and gender provided in the pensioner data to those implied by the pensioner's identity number and these were queried with the administrators of the Fund and the queries were satisfactorily solved.

Description	Total
Gender differ from ID	1 050

### Missing data

The table below shows the number of pensioners with data missing as at 31 March 2014, the current valuation date.

Description	Total
Pensioner status	59
Last pension payment	92
Pension commencement date	3 287

The above queries have been raised with the administrators of the Fund and were resolved to a satisfactory level.

### Dates outside of a reasonable range or invalid

The table below shows the number of pensioners with data outside of a reasonable range as at 31 March 2014, the current valuation date.

Description	Number of Pensioner
Retired members with age at pension commencement date < 16	55
Retired members with age at pension commencement date > 70	651
Pension commencement date prior to date of birth	2
Spouse pensioners with reversion factor > 0	8 451
Pensioners with date of birth prior to 1 April 1909	5
Date of death prior to date pension commenced	1

The above were queried with the administrators of the Fund. Retired members with age at pension commencement less than 16 are Ciskei child pensioners. For retired members with age at pension commencement more than 70, the administrators of the Fund confirmed that we should use the information as supplied.

### Pension payment checks

We have performed the following checks on pension payments:

#### *Consistency check with pension payments in financial statements*

A comparison of the pension payments in the financial statements to the total pensions in the valuation data as at 31 March 2014 is shown in the table below:

	R'm
Accrued pensions in financial statements	24 850
Pensions in valuation data after adjustments	24 712

The valuation data would reflect pensions at a point in time (i.e. the valuation date) while accrued pensions in the financial statements would reflect the total of all the pension payments made during the financial year (i.e. including those of pensioners who exited during the financial year). However, we do not expect significant differences between the two numbers for a fund such as GEPF and the amounts are reasonable.

*Consistency check with pension payment at previous valuation date*

We have performed consistency checks on the pension payment data between the current and the previous valuation dates, 31 March 2014 and 31 March 2012 respectively. We have queried the pension payments for the 758 pensioners that differed by more than 10% from the 2012 data after applying the pension increases.

The administrators of the Fund confirmed that the reason for the differences between the 2012 and 2014 pension was due to arrears or recalculations being performed and the pensions as supplied could be used as is.

*Reasonable range*

Since there is no minimum pension that applies to the Fund, we requested the administrators of the Fund to test the 16 retired members with pension less than R2 400 per annum and the 18 spouses with pension less than R1 200 per annum. The administrators of the Fund confirmed that the pension payments are correct. Most of these pensioners are former TBVC (Transkei, Bophuthatswana, Venda and Ciskei) pensioners.

**Suspended pensioners data filtering**

The suspended pensioner file was reconciled as follows:

Description	Number of records	Balance of records
<b>Full dataset</b>	<b>55 576</b>	<b>55 576</b>
Pensioners who are deceased and fully paid	(49 265)	6 311
Orphans pensions over age 21	(299)	6 012
Duplicate records	(37)	5 975
Valued as active pensioners	(431)	5 544
Records suspended for more than 5 years	(674)	4 870
Pensioners who are not GEPF pensioners	(3 850)	1 020
<b>Suspended pensioners used</b>		<b>1 020</b>

**B.14 Additional checks**

For each of the in-service members in the data files, we checked for missing dates of birth, dates of pensionable service, gender, salary and service type. We also performed the following reasonability checks:

- Dates are valid
- Dates in logical order
- Ages in reasonable ranges
- Pensionable service in reasonable ranges
- Pensionable salaries in reasonable ranges
- Date of birth and gender corresponds to that implied by the member identity number, where applicable

We have calculated the following members' statistics and checked them for reasonability. We have also compared these with the previous valuation and between member classes in the current data:

- Average age and salary weighted age
- Average pensionable salary
- Average pensionable service
- Average contributions

We calculated similar statistics for the pensioners and compared them with the previous valuation and again between pensioner classes:

- Average age and pension weighted age
- Average pension
- Check spouse/former member ratio

We checked the number of members that retired compared to the number of new pensioners.

We also checked that the number of members' deaths compares to the number of new spouses.

We have checked a number of statistical distributions, for example of membership by age, etc.

We compared the market value of the assets as supplied by the Fund's asset consultants with the value in the financial statements.

We compared the contributions made by the members to the contributions made by the employers.

We compared the investment income shown in the accounts with the expected rates of return on assets at the previous valuation was performed.

## **B.15 Conclusion**

Concerns still exist regarding data quality, e.g. the data adjustments necessary in the pensioner and in-service membership build-up from the previous valuation, the results of the 'S'-case investigations, and the understatement of pensioner deaths/suspensions. It was therefore decided to maintain data contingency reserves as outlined in Appendix F of the report.

However we acknowledge that the steps taken by the administrator over the valuation period have resulted in a better quality of the data provided. Furthermore we recognise the potential initiatives to be taken by the administrator going forward to minimise data issues.

Allowing for these data contingency reserve adjustments, we are generally satisfied with the overall appropriateness of the data for the purpose of calculating the Fund's liabilities.

## Appendix C: Consolidated Revenue Account

A reconciliation of the movement of the revenue account over the inter-valuation period is set out below:

	R'000		R'000
<b>Fund as at 31 March 2012</b>	<b>1 038 946 197</b>		
<b>Inflows:</b>		<b>Outflows:</b>	
Prior year adjustment - benefits	3 550 973	Pensions paid	46 680 077
Member contributions	35 795 020	Gratuity payments	15 305 252
Purchase of service	56 400	Withdrawal benefits	28 724 404
Employer contributions	63 775 627	Death benefits	9 769 487
Interest on contributions	756	Retrenchment benefits	243 328
Income from investments	68 460 629	Transfers in *	13 232
Adjustment to Fair Value of investments	327 625 904	Transfers out	93 304
		Other benefits	386 715
		General administration expenses	1 346 340
		Investment management fees	7 127 515
		Interest paid	2 803 166
		<b>Fund as at 31 March 2014</b>	<b>1 425 718 686</b>
	<b>1 538 211 506</b>		<b>1 538 211 506</b>

\* The financial statements note that this is the reversal of a previous transfer into the Fund

The above table represents a reconciliation of the net assets of the Fund from the previous to the current valuation date, including the movement of the Fund's reserve accounts as reflected in the audited financial statements.

# Appendix D: Valuation Basis and Method Adopted

This appendix deals with the methodology and actuarial assumptions used in the valuation of the defined benefit member and pensioner liabilities of the Fund as at 31 March 2014 (with comparatives being provided at the previous valuation date).

## D.1 Valuation methodology

The present value of accrued defined benefit liabilities depends on the assumptions made in respect of the future experience of members and pensioners. Consistent with the previous valuation and the requirements of Professional Guidance of the Actuarial Society of South Africa, best estimate assumptions have been used for the calculation of the defined benefit liabilities for this valuation.

The accrued liabilities have been calculated as the present value of the benefits that have accrued to defined benefit members in respect of service to the valuation date, allowing for future salary increases, expected benefit payments prior to retirement, and for pension increases payable after retirement on a basis consistent with past practice and with communication to members and pensioners.

The contribution rate for future service pension benefits (including withdrawal, death-in-service and normal/early/ill-health retirement pensions) for the in-service members has been established by calculating the contribution rate that is required in respect of benefits accruing over the two years following the valuation date with salaries being projected to retirement date for pension benefits. This method, the Projected Unit Method, produces an accurate estimate of future service costs provided new entrants enter and exits leave the Fund at such a rate that its composition by age, salary and gender remains stable and provided the actual experience does not differ markedly from the assumptions made.

## D.2 Investment Returns, Salary Increases and Pension Increases

The best estimate financial assumptions adopted have been set as follows:

Valuation assumptions	Best estimate 2014 valuation	Best estimate 2012 valuation
Long-term inflation	6.9%	6.7%
Yield on nominal bond for appropriate duration	9.6%	9.4%
Less yield on real bond	(2.2%)	(2.5%)
Less Inflation Risk Premium <sup>(1)</sup>	(0.5%)	(0.2%)
<b>Pre-retirement discounting</b>		
Net long-term investment return (A)	11.4%	11.2%
Gross return on nominal bond	9.6%	9.4%
Equity Risk Premium (based on a 3% ERP) <sup>(2)</sup>	1.8%	1.8%
Long-term salary increases (B) <sup>(3)</sup>	7.9%	7.7%
In excess of inflation	1.0%	1.0%
Inflationary increase	6.9%	6.7%
<b>Interest / salary differential <math>[(1+A) / (1+B)] - 1</math></b>	<b>3.24%</b>	<b>3.25%</b>
<b>Post-retirement discounting</b>		
Long-term investment return (A)	11.4%	11.2%
Pension increases (80% of long term inflation) (C)	5.5%	5.4%
<b>Net post retirement valuation rate <math>[(1+A) / (1+C)] - 1</math></b>	<b>5.59%</b>	<b>5.50%</b>

Note (1): Although the Inflation Risk Premium has been increased in the current valuation basis, it is still at a conservative level. In spite of this increase, the assumed inflation rate has still increased and remains above the target range for inflation in the long term.

(2) It is our understanding that the allocation to equities has remained at around 60%, with the ERP on the *best estimate* basis remaining at 1.8% (being 3.0% x 60%). It is assumed that this allocation of 60% is applicable to both the in-service members and the pensioners.

(3): The actual salary increase awarded at 1 April 2014 of 7.2% will be explicitly allowed for and the long-term assumption is then applicable from the following year.

For the purposes of the above calculations, the yields were estimated from the yield curve at the valuation date, taking consideration of the duration of the Fund's in-service member liabilities. It was considered reasonable to apply the same yield to both the in-service members and the pensioners as the impact of using different valuation bases was small.

The allowance for future inflation is the difference between the nominal and index linked bonds yields viz.  $\{9.6\% - 2.2\% = 7.4\%$ . The result is reduced by an assumed inflation risk premium of 0.5%.

It can be seen from the above table that there is a slight decrease in the net pre-retirement discount rate and an increase in the net post-retirement discount rates, which will result in, all else being equal, a slight decrease in the past service liabilities and the required contribution rate.

### D.3 Promotional Salary Increases

In addition to the salary inflation assumed, merit and promotional increases have been assumed as follows (the previous assumption is provided for comparative purposes):

Age	Current		Previous	
	Other %	Services %	Other %	Services %
20	5.4	3.6	10.0	5.9
25	5.4	3.6	8.0	4.6
30	4.0	3.0	5.0	3.8
35	2.8	2.9	2.9	3.2
40	2.1	2.0	2.0	2.3
45	1.7	1.4	1.5	1.4
50	1.5	1.3	1.4	1.0
55	1.4	1.3	1.1	1.0

The scale of promotional increases has been amended since the previous valuation following the decrement investigation conducted and referred to in D5 below.

### D.4 Pension Increases

The liabilities in respect of pension payments have been discounted at a rate of 5.59% per annum.

The allowance for pension increases depends on the reasonable expectations of pensioners and on the pension increase policy adopted and implemented in accordance with the requirements of Rule 23 of the Fund. The pension increase policy targets minimum pension increases of 75% of the increase in the consumer price index subject to a minimum pension equal to 75% of the original pension increased with full inflation, further subject to the affordability thereof. Consistent with previous valuations of the Fund, we have assumed that this can be represented by a pension increase of 80% of the inflation rate.

### D.5 Demographic Assumptions

Towers Watson has completed an investigation into the demographic experience of the Fund over the period 1 April 2008 to 31 March 2012. The full details of the investigation are set out in our report finalised in October 2013: *“Government Employees Pension Fund Demographic Investigation: April 2008 – March 2012”*.

The demographic assumption analysis was conducted separately in respect of the two categories of membership, namely *Services* members and *Other* members, and separately for males in females. Thus, demographic assumptions are set in respect of four categories.

The full detail of demographic assumption tables have not been reproduced for the purposes of this report. We highlight the main changes in the demographic assumptions to be used in the valuation, compared to the previous valuation:

- The previously assumed pre-retirement mortality rates were largely comparable to the rates observed in the investigation. We recommended however that the pre-retirement mortality rate for Female *Other* members be changed to the average of the rates observed in the

investigation and the assumed rates in 2012. This will lower the mortality at younger ages. For the remaining pre-retirement mortality rates, the previous assumptions have been retained.

- The observed post-retirement mortality rates for male pensioners are broadly similar to those obtained in the previous investigation, whereas the female mortality rates have increased markedly due to the refined methodology and interpretation of the pensioner data. We therefore recommended that the mortality rates used in the 2012 valuation be adjusted to take full cognisance of the current female observed experience. This has the impact of lowering the pensioner liabilities (both males and females).
- The observed ill-health rates in the current and previous investigations differ significantly from the 2012 assumed rates. We recommended that the rates of ill-health retirement be changed for all four categories. The effect of these changes is to reduce the past service liability. We further recommended that the ill-health experience be monitored regularly to identify any further improvements in experience.
- The observed retirement rates for *Other* members have a broadly similar pattern to those seen in the previous experience analysis. However, the observed rates are higher than those previously assumed for the *Services* members. We recommended that the rates are adjusted taking into account the existing assumed rates to reflect this experience.
- There have been large differences in the promotional salary increases observed over the investigation period to 31 March 2012 in respect of members of both categories. We recommended that the promotional salary increase assumption be changed to an average of the smoothed rates based on recent experience and the currently assumed rates.
- We further recommended that the salary increases awarded to members be monitored on a regular basis to further refine the promotional salary increase assumptions should the actual experience turn out to be significantly different from the assumed future experience.

### Pre-retirement mortality rates

Age	Current				Previous			
	Male Services	Female Services	Male Other	Female Other	Male Services	Female Services	Male Other	Female Other
	%	%	%	%	%	%	%	%
20	0.09	0.14	0.08	0.12	0.09	0.14	0.08	0.15
25	0.23	0.15	0.13	0.17	0.23	0.15	0.13	0.18
30	0.38	0.16	0.22	0.20	0.38	0.16	0.22	0.21
35	0.47	0.17	0.32	0.22	0.47	0.17	0.32	0.22
40	0.54	0.17	0.41	0.22	0.54	0.17	0.41	0.22
45	0.59	0.21	0.51	0.23	0.59	0.21	0.51	0.23
50	0.69	0.27	0.63	0.27	0.69	0.27	0.63	0.27
55	0.84	0.32	0.83	0.33	0.84	0.32	0.83	0.33
60	1.01	0.37	1.06	0.40	1.01	0.37	1.06	0.40
65	1.20	0.45	1.27	0.49	1.20	0.45	1.27	0.49

**Post-retirement mortality rates**

Age	Current		Previous	
	Males %	Females %	Males %	Females %
50	2.24	1.20	2.00	0.86
55	2.24	1.18	2.00	0.92
60	2.26	1.27	2.00	1.04
65	2.28	1.56	2.28	1.29
70	3.24	2.19	3.24	1.66
75	4.85	3.37	4.85	2.24
80	7.44	5.46	7.44	3.42
85	12.01	8.97	12.01	5.82
90	18.60	14.59	18.60	9.89

**Ill-health retirement rates**

Age	Current				Previous			
	Male Services %	Female Services %	Male Other %	Female Other %	Male Services %	Female Services %	Male Other %	Female Other %
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.01	0.00	0.00	0.00	0.02	0.01	0.00	0.01
30	0.01	0.01	0.00	0.00	0.11	0.08	0.02	0.02
35	0.06	0.05	0.02	0.02	0.24	0.16	0.05	0.05
40	0.13	0.11	0.05	0.05	0.43	0.26	0.11	0.11
45	0.24	0.22	0.09	0.08	0.72	0.48	0.21	0.20
50	0.41	0.40	0.17	0.14	1.15	0.70	0.38	0.35
55	0.73	0.61	0.30	0.27	1.79	0.86	0.64	0.60
60	0.89	0.51	0.28	0.26	2.31	0.94	0.76	0.75
65	0.00	0.00	0.00	0.00	2.39	0.53	0.00	0.00

**Normal health retirement rates**

Age	Current				Previous			
	Male Services %	Female Services %	Male Other %	Female Other %	Male Services %	Female Services %	Male Other %	Female Other %
55	8.83	8.83	1.75	2.62	8.83	3.67	1.75	2.62
56	3.01	3.01	1.75	2.62	3.01	1.63	1.75	2.62
57	2.84	2.84	1.72	2.48	2.42	1.93	1.72	2.48
58	2.67	2.67	1.91	2.55	2.67	1.99	1.91	2.55
59	5.33	5.33	2.05	2.70	8.53	6.03	2.05	2.70
60	80.77	80.77	13.49	19.86	80.77	34.93	13.49	19.86
61	20.15	20.15	8.16	13.66	11.06	3.85	8.16	13.66
62	20.15	20.15	7.85	12.46	11.06	3.63	7.85	12.46
63	20.15	20.15	7.45	12.03	11.06	4.86	7.45	12.03
64	20.15	20.15	12.05	12.20	11.06	8.62	12.05	12.20
65	37.74	37.74	78.62	82.74	37.74	47.78	78.62	82.74

We propose that the family statistics assumptions (e.g. proportion of members married at retirement and the age difference between husband and wife) be retained.

### Proportion married assumptions

Age	Proportion married %
20	25.0
25	32.5
30	46.0
35	65.0
40	80.0
45	92.5
50	97.5
55	97.5
60+	97.5

We have assumed that on average a husband would be four years older than his wife.

### D.6 Expenses

It was assumed that future administration and other Fund expenses will be levied at a rate of 0.3% of payroll. This is based on the anticipated expenses as per the budget set by the GEPF and the Trustees and is reasonable when compared to the actual expenditure incurred.

### D.7 Commutation

Members are paid a gratuity over and above their pension and no commutation of the pension is therefore allowed.

### D.8 Suspended pensioners

Suspended pensioners have been valued on the same basis as in-force pensioners. Factors have then been applied to these calculated liabilities to allow for the reducing probability that pensions will recommence after they have been in suspension for several years. The factors applied are set in the table below:

Years on suspension at the valuation date	Percentage reinstated
0 – 1	100%
1 – 2	80%
2 – 3	60%
3 – 4	40%
4 – 5	20%
5+	0%

## D.9 Orphans' pensions

No explicit allowance has been made in the valuation for the liability in respect of contingent orphans' pensions. Only the current orphans' pensions in payment have been included in the calculated liability.

## Appendix E: Sensitivity Analysis

The results of the actuarial valuation are dependent on a large number of assumptions regarding the financial development of the Fund. In order to provide the Trustees with an understanding of the sensitivity of the valuation results to changes in these assumptions, we have performed a sensitivity analysis. The sensitivity analysis assesses the impact on the valuation results of changes in the long-term assumptions.

The sensitivity of the long-term assumptions has been examined by varying the following key assumptions:

- the investment return assumption;
- the rate of salary increase; and
- the rate of pension increases.

These variations are summarised below:

	Valuation assumption	Variation
Investment return	11.4% per annum	± 1%
Salary increase	7.9% per annum	± 1%
Pension increases	5.5% per annum	± 1%

The minimum funding level and required employer contribution rate under these differentials are summarised in the tables below:

### Minimum Funding Level

Assumption	-1%	Central	+1%
Investment return	104.82%	121.49%	139.24%
Salary increase	130.12%	121.49%	112.90%
Pension increases	129.48%	121.49%	113.47%

We highlight the impact of the 1% per annum change in the investment return. The valuation results are clearly sensitive to the change, and the Trustees should therefore consider this in light of the Equity Risk Premium allowed for in the valuation basis.

### Required employer contribution rate

Assumption	-1%	Central	+1%
Investment return	19.7%	14.8%	11.0%
Salary increase	12.2%	14.8%	17.9%
Pension increases	13.4%	14.8%	16.3%

# Appendix F: Contingency Reserves

## F.1 Data reserve

As a result of the concerns regarding the valuation data set out in Appendix B, it was deemed appropriate to maintain data reserves, as the valuation liability may be understated as a result of errors or omissions in the valuation data. Although the data has been tested for overall reasonability and the administrator has undertaken an extensive exercise to improve the quality of the data, there remains the possibility that errors do exist in the data.

As part of the previous valuation, the in-service member data reserve was set at 1.30% of the in-service member liability. While there are concerns over the validity of the data supplied by the administrator, we acknowledge the steps taken by the administrator over the inter-valuation period in order to ensure a satisfactory level in the quality of data provided was achieved. Furthermore we recognise the potential initiatives taken by the administrator going forward to minimise data issues. As such the in-service member data reserve for the current valuation has been set at a level of **0.75% of the in-service member liability** or some R6 590 million. This reserve is in respect of possible discrepancies between the CIVPEN and PERSAL data sets. The data is generally only adjusted when a member exits the Fund. This portion of the reserve is set at 0.75% of the in-service member liability (the same level set at the previous valuation date).

At the previous valuation date a provision in respect of the future pension payments to members classified as 'S-cases' or their spouses. In the S-cases exercise carried out annually for the Fund, allowance is made for possible outstanding benefits (including pension payments) payable as at the valuation date, based on the expected exit patterns, methodology and assumptions used for the exercise. Pension payments are included from each member's date of exit until the calculation date and the total provision is reflected in the financial statements of the Fund. A reserve was been established at the previous valuation date equal to 0.55% of in-service member liability in respect of the future pension payments payable to these 'S'-case members should they retire or their spouses' should they die in service in terms of the assumptions set out in the 'S'-cases provision exercise as at 31 March 2012. At the current valuation date, we have explicitly provided for this as part of the liabilities of the Fund, and thus no further amount is held as part of the data reserve.

## F.2 Discriminatory Practices Reserve

We have maintained the reserve in respect of previous discriminatory practices (PDP), being the accumulated value of 1% of the funding level in 1998. The value of this reserve, as per the Fund's financial accounts, was R6 643 million at the valuation date. The change in the value of the reserve since the last valuation relates to the allowance for Fund returns as well as a number of draw-downs which have occurred during the inter valuation period.

The reconciliation of the discriminatory practices reserves over the inter-valuation period is reflected below:

<b>Discriminatory Practices Reserve (R'000)</b>	<b>Past Discriminatory Reserve</b>	<b>General Assistants Reserve</b>	<b>Ciskei Strikers Reserve</b>	<b>Non-Statutory Forces Reserve</b>
Balance at start	<b>4 625 863</b>	<b>84 984</b>	<b>Nil</b>	<b>Nil</b>
Administrative expenditure	-	-	-	-
Benefits Paid	-	-	(9 771)	-
Net investment income	1 772 037	9 460	-	-
Methodology change	-	-	9 771	-
<b>Total (R'm)</b>	<b>6 397 900</b>	<b>94 444</b>	<b>Nil</b>	<b>Nil</b>

The sum of the above reserve accounts amounts to R6 492 million, differing from the financial statements by R150 451 000 (the Ciskei Striker's Reserve). To date, the Fund has at the point of paying a benefit to an exiting member impacted by the Ciskei Strike, debited the reserve account to reflect the additional benefit paid. In practice, members have already been credited in full with the additional service and in order to be consistent with the liability (which reflects the full service), this portion of the reserve account should be released.

### F.3 Solvency reserve as per asset consultants

The level of the solvency reserve that could be established in the Fund as a buffer against investment volatility has been determined by the asset consultants (RisCura Consulting) using an asset-liability modelling (ALM) basis as was the case for the 2006, 2010 and 2012 valuations. The Riscura report notes the following.

*"We use the risk and expected return of the current portfolio relative to the Fund's liabilities, i.e. Real Surplus Risk and Real Surplus Return, in the setting of an appropriate solvency reserve. In setting the reserve using a VaR measure we use a three-year time horizon consider the worst-case move with 10% probability of deterioration in solvency. This level of solvency deterioration is then used to calculate the solvency reserve that must be set aside due to investment risk created through the mismatch of assets and liabilities. This leads to an amount of R 303 billion as the required solvency capital."*

### F.4 Solvency reserve – PF 117 approach: Discontinuance matched

Although the solvency reserve for valuation purposes has been calculated using the ALM approach as noted in section F.3, for comparative purposes the solvency reserve was also calculated on a discontinuance matched approach (DCM).

Pension Fund Circular 117 released by the Financial Services Board outlines an alternative basis for setting up solvency reserves within funds. An allowance is made in the solvency valuation basis for the costs of implementing and maintaining the matched investment strategy of 0.50%. This allowance is the maximum permitted in terms of PF 117.

The lowest risk investment strategy would be to match the in-service member and pensioner liabilities using index-linked bonds, without any allowance for an equity risk premium. The investment risk contingency reserve should therefore be set relative to the cost of implementing such a strategy.

Accordingly, the solvency reserve has been calculated as the difference between:

- The past service liabilities calculated on the assumption that the Fund has implemented a matched investment strategy including an allowance for adverse future mortality experience; and
- The past service liabilities calculated on the best-estimate valuation basis.

In effect the solvency reserve represents the difference in past service liabilities on a conservative basis (to protect the long term solvency of the Fund and meet the reasonable benefit expectations of members and pensioners) and the liabilities on a realistic basis. A detailed breakdown is reflected in Appendix H.

At the valuation date index-linked bonds were trading at an average yield of 2.2%. The average yield on long dated nominal bonds at this date was 9.6%.

The maximum allowance for future inflation when determining the solvency reserve is the difference between the nominal and index-linked bond yields viz.  $\{9.6\% - 2.2\% \} = 7.4\%$ .

For the purposes of the above calculations, the yields were estimated from the yield curve at the valuation date, taking consideration of the duration of the Fund's in-service member and pensioner liabilities. The solvency valuation basis is thus as follows:

Solvency basis	Solvency Basis 2014	Solvency Basis 2012
Long-term inflation	7.4%	6.9%
Yield on nominal bond for appropriate duration	9.6%	9.4%
Less yield on real bond	(2.2%)	(2.5%)
Less Inflation Risk Premium	-	-
<b>Pre-retirement discounting</b>		
Net long-term investment return (A)	9.1%	8.9%
Gross return on nominal bond	9.6%	9.4%
Equity Risk Premium (based on a 3% ERP)	-	-
Cost of implementing and matching strategy	(0.5%)	(0.5%)
Long-term salary increases (B)	6.0%	5.8%
In excess of inflation <sup>(1)</sup>	(1.4%)	(1.1%)
Inflationary increase	7.4%	6.9%
<b>Interest / salary differential <math>[(1+A) / (1+B)] - 1</math></b>	<b>2.92%</b>	<b>2.93%</b>
<b>Post-retirement discounting</b>		
Long-term investment return (A)	9.1%	8.9%
Pension increases (80% of long term inflation) (C)	5.9%	5.5%
<b>Net post retirement valuation rate <math>[(1+A) / (1+C)] - 1</math></b>	<b>3.02%</b>	<b>3.22%</b>

Note (1): The real salary increase in excess of inflation has been set at a level that ensures a net 1.0% pre-retirement discount rate at the age of 40, after factoring in the *Other* members' promotional salary scale. Should the rate not be limited in this manner, the discontinuance matched approach would yield a far higher reserve than will be calculated above.

The difference between the liabilities calculated on the solvency basis and best-estimate basis amounts to some R317 947 million, i.e. a solvency reserve of this amount should be held were it affordable. Thus the calculated reserve of R303 000 million actually used in the valuation results (from F.3 above) is reasonably consistent with this amount.

## F.5 100% CPI pension increase reserve

The Trustees of the Fund have decided to set up an explicit reserve to enable them to exercise greater discretion in granting future pension increases in line with inflation. Based on the pension increase policy of the Fund, the valuation basis allows for pension increases of 80% of CPI (being the targeted increase of 75% of CPI plus a margin for the purchasing power catch-up needed to ensure that 75% of the original pension maintains 100% of CPI increases).

The pension increase reserve has been established to provide for the possibility of granting pension increases of 100% of CPI. Separate reserves provide for the increase in the in-service member and pensioner liabilities and the present value of the increase in contribution rates that would be required to make an allowance to be able to grant future pension increases of 100% of CPI. Establishing an explicit reserve allows the Trustees to target this level of increase without changing the valuation basis which assumes a pension increase target of 80% of CPI, as explained in Appendix D.3 of this report.

The 100% CPI pension increase reserves amounted to R204 457 million and the following table splits this reserve into its three components:

	Total (R'm)
In-service member liability	88 733
Pensioner liability	30 806
Future service contribution rate	84 918
<b>100% CPI pension increase reserve</b>	<b>204 457</b>

## F.6 Mortality improvement reserve

Significant mortality improvements have been observed internationally and it is likely that we will follow a similar pattern in South Africa. The improvements in the mortality rates at older ages are largely through the advances of science, medicine and living conditions. It is appropriate to include an explicit allowance for mortality improvement in this valuation as was done in the previous valuation.

### Mortality improvement for in-service members

In order to make an allowance for future improvements in mortality, we have used post-retirement mortality rates for in-service members equal to the mortality rates used in the best estimate valuation basis (derived from an experience analysis of the actual mortality experienced by the Fund) rated down two and a half years. i.e. we assume that a future pensioner is two and a half years younger than their actual age which allows for a longer expected lifetime. This issue will continue to be investigated for future valuations.

### Mortality improvement for current pensioners

We have used mortality rates for pensioners equal to the mortality rates used in the best estimate valuation basis (derived from an experience analysis of the actual mortality experienced by the Fund) rated down one and half years. That is, we assume that pensioners are one and a half years younger than their actual age. This issue will continue to be investigated for future valuations.

### Value of mortality improvement reserve

The best estimate allowance for post-retirement mortality improvements amounts to R25 000 million and R8 918 million for in-service members and pensioners respectively.

## F.7 Summary of contingency reserves

The table below sets out a summary of the various reserves that are recommended for the Fund. We reflect the extent to which these reserves have been established at the current and previous valuation dates:

Contingency Reserve Accounts	31 March 2014 (recommended) R million	31 March 2014 (established) R million	31 March 2012 (recommended) R million	31 March 2012 (established) R million
<b>Fully funded and considered as part of the minimum funding level:</b>				
In-service member data (Appendix F1)	6 590	6 590	10 050	10 050
Discriminatory practices reserve (Appendix F2)	6 492	6 492	4 711	4 711
<b>Funded to the level affordable and considered as part of the long-term funding level:</b>				
Solvency reserve (Appendix F3)	303 000	141 155	254 000	14 954
100% CPI Reserve (Appendix F5)	204 457	95 247	183 553	10 808
Mortality Improvement (Appendix F6)	33 918	15 801	26 628	1 568
<b>Combined Reserves</b>	<b>554 457</b>	<b>265 285</b>	<b>478 942</b>	<b>42 091</b>

The reserve accounts reflected in Sections F1 and F2 have therefore been funded in full, whilst the reserves in the balance of the sections have been funded to the extent affordable, namely some 46.6% as at the valuation date (some 5.9% at the previous valuation).

# Appendix G: Summary of Liabilities and Required Contribution Rates

## G.1 Past service liabilities

A comparison of the best-estimate liability at the current and previous valuation dates is set out below:

	Current Valn. R'000	Previous Valn. R'000
<b>In-service member liability</b>	<b>878 720 976</b>	<b>773 805 100</b>
Members' normal retirement & spouses' post death pensions	764 275 226	621 364 971
Spouses' death in service pensions & lump sums	77 646 777	68 326 018
Members' and spouses' ill-health pensions & lump sums	36 798 973	84 114 111
<b>S-case and exits in progress liability</b>	<b>18 154 251</b>	<b>-</b>
<b>Pensioner liability</b>	<b>263 552 153</b>	<b>223 048 920</b>
Male pensioner liability	110 045 142	92 606 454
Female pensioner liability	96 128 579	76 413 960
Widower pensioner liability	5 346 254	4 279 151
Widow pensioner liability	51 839 786	48 960 078
Suspended pensioner liability	192 392	789 277
<b>Deferred Pensioner Liability</b>	<b>6 438</b>	<b>774</b>
<b>Total past service liabilities</b>	<b>1 160 433 818</b>	<b>996 854 794</b>

## G.2 Past service liabilities split by employer type

A breakdown of the current valuation best-estimate in-service member liability between the employer types is set out below:

	Services R'000	Other R'000
<b>In-service member liability</b>		
Members' normal retirement & spouses' post death pensions	157 943 723	606 331 503
Spouses' death in service pensions & lump sums	20 357 782	57 288 995
Members' and spouses' ill-health pensions & lump sums	14 912 642	21 886 331
<b>Total in-service member liabilities</b>	<b>193 214 147</b>	<b>685 506 829</b>

### G.3 Required Contribution Rate

The required contribution rate, in respect of the two years following the current valuation date is as follows (the contribution rate following the previous valuation is reflected for comparison):

	2014 rate	2012 rate
<b>Funded Benefits:</b>	<b>22.0%</b>	<b>22.6%</b>
Retirement Benefits	18.0%	16.9%
Death in Service Prospective Pensions	1.2%	1.3%
Death in Service Lump Sum	1.2%	1.2%
Ill Health Pensions	0.8%	2.1%
Ill Health Lump Sum	0.2%	0.5%
Mortality Improvement	0.6%	0.6%
<b>Allowance for Fund expenses</b>	<b>0.3%</b>	<b>0.3%</b>
<b>Total Contribution Rate for In-service Members</b>	<b>22.3%</b>	<b>22.9%</b>
Less: Member Contributions	(7.5%)	(7.5%)
<b>Required Employer Contribution Rate</b>	<b>14.8%</b>	<b>15.4%</b>
Current Employer Contribution Rate	13.4%	13.5%

### G.4 Required contribution rate split by employer type

	Services Members Current Valuation	Other Members Current Valuation
<b>Funded Benefits:</b>	<b>25.6%</b>	<b>21.2%</b>
Retirement Benefits	19.7%	17.6%
Death in Service Prospective Pensions	1.8%	1.1%
Death in Service Lump Sum	1.5%	1.1%
Ill Health Pensions	1.7%	0.7%
Ill Health Lump Sum	0.4%	0.1%
Mortality Improvement	0.5%	0.6%
<b>Allowance for Fund expenses</b>	<b>0.3%</b>	<b>0.3%</b>
<b>Total Contribution Rate for In-service Members</b>	<b>25.9%</b>	<b>21.5%</b>
Less: Member Contributions	(7.5%)	(7.5%)
<b>Required Employer Contribution Rate</b>	<b>18.4%</b>	<b>14.0%</b>
Current Employer Contribution Rate	16.0%	13.0%

## G.5 Cost of additional pensionable service for “Services” members

	Including 25%	Excluding 25%
<b>Funded Benefits:</b>	<b>25.6%</b>	<b>21.8%</b>
Retirement Benefits	19.7%	16.7%
Death in Service Prospective Pensions	1.8%	1.4%
Death in Service Lump Sum	1.5%	1.4%
Ill Health Pensions	1.7%	1.5%
Ill Health Lump Sum	0.4%	0.3%
Mortality Improvement	0.5%	0.5%
<b>Allowance for Fund expenses</b>	<b>0.3%</b>	<b>0.3%</b>
<b>Total Contribution Rate for In-service Members</b>	<b>25.9%</b>	<b>22.1%</b>
Less: Member Contributions	(7.5%)	(7.5%)
<b>Required Employer Contribution Rate</b>	<b>18.4%</b>	<b>14.6%</b>
Current Employer Contribution Rate	16.0%	16.0%

# Appendix H: Solvency Reserve Details

## H.1 Accrued service actuarial Liabilities based on Solvency Reserve Basis

For illustrative purposes, we have reflected the breakdown of the solvency reserve account on the discontinuance matched approach. We note that the actual solvency reserve is determined by the asset consultants.

	Current Valn. R'000	Previous Valn. R'000
<b>In-service member liability</b>	<b>1 129 762 830</b>	<b>988 090 011</b>
Members' normal retirement & spouses' post death pensions	986 379 710	795 351 561
Spouses' death in service pensions & lump sums	94 535 805	82 828 841
Members' and spouses' ill-health pensions & lump sums	48 847 315	109 909 609
<b>S-case and exits in progress liability</b>	<b>18 154 251</b>	<b>-</b>
<b>Pensioner liability</b>	<b>330 455 289</b>	<b>277 037 704</b>
Male pensioner liability	135 340 286	113 386 860
Female pensioner liability	117 845 136	94 103 697
Widower pensioner liability	7 130 831	5 410 291
Widow pensioner liability	69 897 805	63 156 535
Suspended pensioner liability	241 231	980 321
<b>Deferred Pensioner Liability</b>	<b>8 113</b>	<b>1 014</b>
<b>Total past service liabilities (H1)</b>	<b>1 478 380 483</b>	<b>1 265 128 729</b>

## H.2 Accrued service actuarial Liabilities Based on Valuation Basis

	Current Valn. R'000	Previous Valn. R'000
<b>Total Past Service Liabilities (see Appendix G1) (H2)</b>	<b>1 160 433 818</b>	<b>996 854 794</b>

## H.3 Solvency reserve required on a discontinuance matched approach

	Current Valn. R'000	Previous Valn. R'000
<b>Required Solvency reserve (H1 – H2)</b>	<b>317 946 665</b>	<b>268 273 935</b>

# Appendix I: Notional Pensioner Accumulation Amount

It is important to note that the Fund is not governed in terms of the Pension Funds Act and that there are no requirements in terms of the Fund's Rules and the GEP Law to separate "pensioner assets" from the other assets of the Fund. This Appendix is therefore only included for illustrative purposes and should the Fund fall under the Pension Funds Act in the future.

The Pension Funds Act prescribes a minimum pension increase test every three years equal to the greater of the increase that would be granted under the pension increase policy of the Fund and the lesser of:

- a "write-up" increase such that current pension liabilities equate to the value of the notional pensioner assets referred to as the notional pensioner accumulation amount (the "NPAA"), if this amount is larger than current pension liabilities; or
- a CPI increase, where each pensioner is granted a CPI related increase since the inception of the pension.

Our interpretation of the wording of the Pension Funds Act requires that the NPAA be calculated with reference to surviving pensioners only. A wider interpretation of this NPAA would suggest that it represents the assets attributable to the pensioners of the Fund, i.e. including profits realised on the death of pensioners.

Applying this wider interpretation of the NPAA to the Fund, we can effectively compare the "assets" backing the pensioner liability against the liability itself to determine whether any excess exists that could be utilised to strengthen the case for the award of a pension increase.

## Calculation of notional pensioner accumulation amount for the current valuation:

### A. *Opening balance*

The opening balance was set equal to the balance in the NPAA at the previous valuation date, which in turn has been built up from previous valuation dates.

### B. *Less pension payments*

The pension payment amounts were derived from the financial statements, assumed to be deducted uniformly over each financial year.

### C. *Plus new entrants to the account*

The value of all new retirements and all new spouses' pensions arising from the death of a member are added into the NPAA (spouse's pensions arising from deaths of pensioners are already reflected in the assets). The amount introduced into the account represents the best estimate actuarial liability and allowance for the appropriate funded contingency reserves at the date of the commencement of the pension.

**D. Exits from the account**

There are no exits from the NPAA, as all the assets are assumed to remain behind for the purposes of meeting the pension increases for the remaining pensioners.

**E. Plus investment returns credited to the account**

The investment returns achieved by the Fund over the period, net of investment management fees, were credited to the account. The Fund has no assets specifically earmarked to meet the pensioner liability and it was therefore considered reasonable to use the returns applicable to the Fund as a whole. Note that if the Fund in the future formally separates the pensioner assets from the other assets, it may be appropriate to allocate investment returns on a basis that better matches the nature of the pensioner liabilities.

We have reconciled the returns used to the reported returns over the same period and are satisfied that the returns used reflect the actual net investment return achieved by the Fund.

**F. Less pensioner expenses**

An allowance is made in respect of the expenses incurred in administering the pensions in payment.

**G. Value of the Pensioner Accumulation Amount:**

The value of the notional pensioner accumulation amount calculated in terms of the above paragraphs amounted to **R 370 635 million** as at 31 March 2014. This exceeds the value of the best estimate actuarial liabilities by some **R 107 083 million (140.6% minimum funding level)**, but is less than the best estimate liabilities and the solvency reserves and contingency reserves in respect of pensioners and suspended pensioners by some **R 2 551 million (99.3% long term funding level)**.

## Appendix J: Actuarial Interest Factors

The actuarial interest factors (based on the statutory actuarial valuation as at 31 March 2012) that came into effect on 1 April 2013 have been updated to reflect the revised results of the statutory actuarial valuation of the Fund as at 31 March 2014. In particular the change in basis since the previous valuation date warrants the need for a new set of actuarial interest factors. The relevant factors are set out in the tables below.

### J.1 $F_z$ factors applicable to members under the age of 55 years

Age	Current F(Z) Services	Current F(Z) Other	Proposed F(Z) Services	Proposed F(Z) Other
20	0.2400	0.1825	0.2251	0.1677
21	0.2402	0.1833	0.2252	0.1686
22	0.2403	0.1842	0.2254	0.1694
23	0.2405	0.1859	0.2255	0.1702
24	0.2407	0.1875	0.2257	0.1719
25	0.2410	0.1892	0.2259	0.1735
26	0.2412	0.1909	0.2260	0.1752
27	0.2415	0.1925	0.2262	0.1768
28	0.2417	0.1942	0.2264	0.1785
29	0.2420	0.1959	0.2268	0.1801
30	0.2425	0.1976	0.2271	0.1818
31	0.2430	0.1992	0.2275	0.1834
32	0.2435	0.2009	0.2279	0.1851
33	0.2440	0.2026	0.2282	0.1873
34	0.2445	0.2042	0.2286	0.1895
35	0.2450	0.2059	0.2291	0.1917
36	0.2460	0.2084	0.2296	0.1939
37	0.2470	0.2109	0.2301	0.1961
38	0.2480	0.2134	0.2308	0.1983
39	0.2489	0.2159	0.2316	0.2005
40	0.2499	0.2185	0.2323	0.2027
41	0.2506	0.2207	0.2331	0.2062
42	0.2521	0.2229	0.2339	0.2080
43	0.2533	0.2254	0.2348	0.2102
44	0.2551	0.2282	0.2366	0.2125
45	0.2575	0.2313	0.2385	0.2150
46	0.2598	0.2346	0.2406	0.2176
47	0.2625	0.2380	0.2432	0.2204
48	0.2655	0.2415	0.2458	0.2233
49	0.2686	0.2452	0.2485	0.2263
50	0.2717	0.2489	0.2514	0.2294
51	0.2758	0.2530	0.2545	0.2331
52	0.2792	0.2572	0.2575	0.2369
53	0.2835	0.2616	0.2610	0.2410
54	0.2878	0.2661	0.2662	0.2451

## J.2 $A_x$ factors applicable to members equal to and over the age of 55 years

Age	Current A(X) Services	Current A(X) Other	Proposed A(X) Services	Proposed A(X) Other
55	14.6421	13.3579	13.7030	12.3302
56	14.1700	12.9735	13.5063	12.1524
57	13.7888	12.6529	13.1791	12.0555
58	13.3885	12.3496	12.8107	11.9641
59	13.0892	12.0875	12.4670	11.7526
60	12.5468	11.6623	12.0244	11.5293
61	12.6723	11.9034	12.0484	11.8003
62	12.7673	12.0750	12.0728	11.9488
63	12.5792	12.2330	11.9756	11.9136
64	12.3771	12.2041	11.8137	11.7826
65	12.1752	12.1752	11.6517	11.6517
66	11.9536	11.9536	11.4185	11.4185
67	11.7263	11.7263	11.1792	11.1792
68	11.4943	11.4943	10.9343	10.9343
69	11.2560	11.2560	10.6852	10.6852
70	11.0102	11.0102	10.4312	10.4312
71	10.7579	10.7579	10.1745	10.1745
72	10.4999	10.4999	9.9148	9.9148
73	10.2359	10.2359	9.6520	9.6520
74	9.9659	9.9659	9.3874	9.3874
75	9.6909	9.6909	9.1217	9.1217
76	9.4121	9.4121	8.8568	8.8568
77	9.1296	9.1296	8.5939	8.5939
78	8.8441	8.8441	8.3336	8.3336
79	8.5578	8.5578	8.0772	8.0772
80	8.2725	8.2725	7.8259	7.8259

These actuarial interest factors are discussed in a separate report accompanying this statutory actuarial valuation titled: "*Actuarial Interest Factors following 31 March 2014 valuation*", which provides further detail on the methodology applied in deriving these factors.

Once these factors are approved by the Minister, they should be used for the calculation of the appropriate benefit payments.