# NATAL JOINT MUNICIPAL PENSION FUND (SUPERANNUATION) (12/8/553/2)

# REPORT ON THE INTERIM ACTUARIAL VALUATION AS AT 31 MARCH 2012

Prepared by

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12 October 2012

# NATAL JOINT MUNICIPAL PENSION FUND (SUPERANNUATION) REPORT ON THE INTERIM ACTUARIAL VALUATION AS AT 31 MARCH 2012

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## EXECUTIVE SUMMARY

1. We have performed an interim actuarial valuation of the Natal Joint Municipal Pension Fund (Superannuation) (the "Fund") as at 31 March 2012 ("the valuation date"). A copy of this report must be submitted to the Financial Services Board ("FSB") in terms of an agreement between the Fund and the FSB regarding the Section 18 report submitted by the Fund as at 31 March 2011.

2. The last statutory actuarial valuation of the Fund was performed as at 31 March 2011 and the report on that valuation was submitted to the Financial Services Board on 23 January 2012.

3. The period from 31 March 2011 to 31 March 2012 is taken as the "valuation period" for purposes of this valuation.

4. This report on the results of the valuation is addressed to the General Committee of the Fund.

5. At the valuation date (and at the previous statutory valuation date) the Fund covered the following membership:

| | 31 March 2011 | | 31 March 2012 | |
|---|---|---|---|---|
| | **Number** | **Annual salaries/ pension R'000** | **Number** | **Annual salaries/ pension R'000** |
| Active members | 5 473 | 877 786 | 5 333 | 906 062 |
| Pensioners | 5 150[1] | 189 146 | 5 325[2] | 204 561 |

1 Includes 1 019 suspended and 347 pending pensioners
2 Includes 1 053 suspended and 318 pending pensioners

6. The market value of the Fund's assets was R 6 240 605 000 at the valuation date.

7. The value placed on the assets for purposes of the valuation are:

| | **31.03.2011 R'm** | **31.03.2012 R'm** |
|---|---|---|
| Assets at market value | 5 614.5 | 6 240.6 |
| Investment Reserve | (113.0) | 298.3 |
| Actuarial value of assets | 5 501.5 | 6 538.9 |

8. For purposes of the valuation, the assets were taken at a value of R298,3 million above market value. Details are given in paragraph 54 of the main report.

9. The valuation disclosed that, for the Fund overall, the liabilities for service to the valuation date were 96% funded as follows:

| | 31 March 2011 R'm | 31 March 2012 R'm |
|---|---|---|
| Value of assets (Appendix 5) | 5 501.5 | 6 538.9 |
| Value of liabilities (Appendix 6) | (5 607.8) | (6 270.6) |
| Balance of assets in Memorandum Account | ( 315.5) | ( 405.0) |
| Risk Reserve | ( 127.7) | ( 133.3) |
| **Surplus (shortfall)** | **( 549.5)** | **( 270.0)** |
| Funding level | 90.9% | 96.0% |

10. The valuation results can be split between active members and pensioners as reflected below.

| | 31 March 2011 R'm | 31 March 2012 R'm |
|---|---|---|
| **Memorandum Account (Pensioners)*** | | |
| Assets | 2 458.1 | 2 936.1 |
| Liabilities | (2 097.0) | (2 481.7) |
| Risk Reserve | ( 45.6) | ( 49.4) |
| **Balance of assets in Memorandum Account** | **315.5** | **405.0** |
| Funding level | 114.7% | 116.0% |
| **Active Members** | | |
| Balance of assets | 3 043.4 | 3 602.8 |
| Balance of liabilities** | (3 510.8) | (3 788.9) |
| Risk Reserve | ( 82.1) | ( 83.9) |
| **Surplus (Shortfall)** | **( 549.5)** | **( 270.0)** |
| Funding level | 84.7% | 93.0% |

* The liabilities for the pensioners include an allowance for the pension increase on 1 July 2012, an allowance for a once-off increase of 8.33% on merger with the Natal Joint Municipal Pension Fund (Retirement) and for payment of a thirteenth pension cheque in November 2012.

** Including allowance for pending spouse's pensions.

11. The statutory actuarial valuation of the Fund as at 31 March 2011 disclosed that the Fund was in deficit. In terms of Section 18 of the Act, the Fund was required to submit a "Scheme to Eliminate Deficiency" to the FSB. In terms of the scheme, a surcharge of 9,5% of pensionable salaries is payable for a period of 8 years with effect from 1 July 2012 to meet the deficit. This is in addition to the basic employer rate of contribution required to fund future service benefits (see paragraph 15 below).

12. The increased contribution rates were therefore not yet in force at the valuation date.

13. Based on the results of the valuation, we expect that the surcharge of 9,5% of pensionable salaries will meet the deficit within the 8 year period provided for in the Scheme.

14. Contributions being paid to the Fund at the valuation date, excluding any surcharge, expressed as a percentage of the pensionable salaries, are:

| | % |
|---|---|
| by members | 9.25 |
| by local authorities ("employer") | 18.00 |
| Total | 27.25 |

15. The contribution rate being paid at the previous statutory valuation date was not sufficient to cover the contribution rate required for future service, showing a shortfall of 3,63% of pensionable salaries, as follows:

| | **31 March 2011** % |
|---|---|
| Method of valuation | Attained Age |
| Contribution rate currently payable | 27.25 |
| Contribution rate required for future service | 30.88 |
| Excess/(Shortfall) | (3.63) |

15.1. The General Committee accepted our recommendation to increase the employer's basic contribution from 18,00% to 21,63% (18,00% plus 3,63 with effect from 1 July 2012.

15.2. The total rate of contribution required from the employer, including the surcharge, was thus 31,13% (21,63% plus the surcharge of 9,5%) of pensionable salaries payable for a period of 8 years with effect from 1 July 2012.

15.3. The current valuation shows that the contribution rate required for future service has increased slightly from 30,88% to 31,10% of pensionable salaries. We do not recommend that the employer's rate of contribution be increased any further at this stage. We will continue to monitor the situation at the next interim actuarial valuation at 31 March 2013 and make a recommendation to adjust the required contribution if necessary at that stage.

16. The key findings and recommendations in the report are:

    16.1. The Fund self-insures its death benefits and disability benefits. We are satisfied that, given the recommended Risk Reserve, the arrangement is appropriate for the Fund;

    16.2. We are satisfied that the composition and nature of the Fund's assets and its investment strategy at the valuation date were appropriate for its liabilities;

    16.3. The Fund's assets underlying the pensioner liabilities were sufficient to meet the pensioner liabilities as at the valuation date.

    16.4. The assets underlying the active member liabilities were insufficient to meet these liabilities at the valuation date. In terms of the "Scheme to Eliminate Deficiency" that was submitted to the FSB following the previous statutory actuarial valuation, this deficit will be funded by the employer by means of an additional surcharge of 9,5% of pensionable salaries payable for 8 years from 1 July 2012; and

    16.5. The required contribution rate for future service benefits for active members exceeded the contribution rate payable with effect from 1 July 2012 by 0,22% of pensionable salaries. I recommend that the local authorities continue to pay the current contribution rate of 21,63% of pensionable salaries. This will be reviewed at the next interim actuarial valuation of the Fund as at 31 March 2013.

**A R ELS (FASSA CFP CFA CERA)**
**VALUATOR**

In my capacity as valuator to the Fund
and as an employee of Arthur Els & Associates.

12 October 2012

# NATAL JOINT MUNICIPAL PENSION FUND (SUPERANNUATION)
# REPORT ON THE STATUTORY ACTUARIAL VALUATION OF THE FUND
# AS AT 31 MARCH 2011

## INTRODUCTION

1. We have performed an interim actuarial valuation of the Natal Joint Municipal Pension Fund (Superannuation) (the "Fund") as at 31 March 2012 ("the valuation date"). A copy of this report must be submitted to the Financial Services Board ("FSB") in terms of an agreement between the Fund and the FSB regarding the Section 18 report submitted by the Fund as at 31 March 2011.

2. The last statutory actuarial valuation of the Fund was performed as at 31 March 2011 and the report on that valuation was submitted to the Financial Services Board on 23 January 2012.

3. The period from 31 March 2011 to 31 March 2012 is taken as the "valuation period" for purposes of this valuation.

4. This report on the results of the valuation is addressed to the General Committee of the Fund. Any other party placing reliance on this report is encouraged to firstly consult with the General Committee and ourselves (see Appendix 8).

5. In this report the purposes of the valuation, the processes involved, the results obtained and the conclusions drawn are explained. The body of the report is a summary of the data, assumptions and results. The appendices, which form part of the report, contain particulars of the data, the reasons for the assumptions and details of the results.

6. The Fund is registered in terms of the Pension Funds Act.

7. This report was peer reviewed by an independent Consulting Actuary, Jeremy Andrew, and incorporates his suggested adjustments.

## PURPOSE OF THE VALUATION

8. The purpose of the valuation is to investigate the financial soundness of the Fund in terms of the funding objectives laid down by the Actuarial Society of South Africa and as required by the Registrar of Pension Funds.

9. This requires that the following be determined:

   9.1. whether the existing assets of the Fund are sufficient to cover the Fund's accrued liabilities towards its members for service prior to the valuation date, and towards its pensioners;

9.2. an analysis of the financial progress of the Fund since the previous statutory valuation and an investigation whether adequate progress has been made in terms of the "Scheme to Eliminate Deficiency" to restore the Fund to financial soundness;

9.3. whether the future contribution rates are sufficient to meet the future accrual of benefits stipulated in the Regulations of the Fund;

9.4. whether the contingency reserve accounts are appropriately funded and to review the build up thereof;

9.5. whether the Fund's reinsurance arrangements are appropriate;

9.6. whether the nature of the assets of the Fund is suitable to match the nature of the liabilities of the Fund and whether the investment strategy is appropriate;

9.7. whether the targeted pension increase is sustainable and the likelihood of it being realized;

9.8. whether any changes are required to the assumptions as a result of the experience of the Fund, or prevailing conditions; and

9.9. an analysis of the sources of any surplus or strain that has arisen in the period.

10. At each statutory triennial valuation the reasons for the change in the surplus/shortfall is investigated. No such analysis is usually performed for an interim valuation, but since this report is to be submitted to the FSB, we have included the analysis in Appendix 7.

11. This report adheres to the Professional Guidance Note PGN201 of the Actuarial Society of South Africa and the relevant Board Notices issued by the Financial Services Board.

## CHANGES SINCE LAST STATUTORY VALUATION

12. The pension increase policy of the Fund states that pensions will be increased on 1 July of each year by the greater of 75% of the average Headline Inflation to the preceding 31 December or the amount affordable from investment returns earned on the assets underlying pensions in the Fund. In terms of the policy, the maximum increases is the lowest of:

    12.1. 100% of Headline Inflation to the preceding 31 March;

    12.2. The increase affordable out of the investment earnings in the Memorandum Account; or

    12.3. The average of the above two items.

13. Since the last statutory valuation, pensions in payment have been increased as follows:

| | **Pension Increase** | **Headline inflation (to preceding 31 March)** | **Average Headline inflation (to preceding 31 Dec)** |
|---|---|---|---|
| 1 July 2011[1] | 4.32% | 4.1% | 4.29% |
| 1 July 2012[2] | 5.04% | 6.0% | 4.99% |

1 The cost of the 2011 increase has been included in the liabilities for the previous statutory valuation.
2 The cost of the 2012 increase has been included in the liabilities for this valuation.

A pro-rata increase is granted if the pension had been in payment for less than 12 months at the preceding 31 March, and no increase is granted if the pension had commenced after 31 March preceding the date of the increase.

14. The Pension Funds Act requires the valuator to investigate the pension increases granted to pensioners every three years. The actual increases granted since retirement must be compared to the increase in the Consumer Price Index (CPI) and any shortfall must be credited to the pensioners as an additional increase if affordable. The last investigation for the Fund was done as at 31 March 2011 and pensions were increased to the required minimum level at that date. Another investigation will be performed in the course of the next statutory valuation of the Fund as at 31 March 2014.

15. In terms of Regulation 37A, pensioners are paid a thirteenth cheque in November of each year if such payments are affordable. Over the valuation period and for a number of years up to the previous valuation date, thirteenth cheque payments have been made by the Committee. The Committee should be aware that this could create an expectation amongst pensioners that this will always be the case. If this is the intention of the Committee, it should be funded for specifically going forward.

16. The statutory valuation of the Fund at 31 March 2011 showed that the assets underlying the active member liabilities are insufficient to meet these liabilities at the valuation date. To fund the deficit, a surcharge of 9,5% of pensionable salaries is payable for a period of 8 years with effect from 1 July 2012 in terms of the "Scheme to Eliminate Deficiency" that was submitted

to the FSB by the Fund in terms of Section 18 of the Act. The increased surcharge (from 7% to 9,5% of pensionable salaries) will take effect from 1 July 2012.

17. In the 31 March 2011 statutory actuarial valuation report, we also recommended that the basic rate of contribution by the employer increase from 18% to 21,63% of pensionable salaries. The increased contribution takes effect from 1 July 2012.

18. The following recommendations were also made in the 31 March 2011 statutory actuarial valuation report:

18.1. That an investigation be done to determine whether individual local authorities should be levied an additional surcharge in respect of excessive salary increases – this exercise was completed early in 2012;

18.2. That the General Committee allocate additional resources to ensure that the administration records are corrected – a task team was formed and much progress has been made to correct the records (See Appendix 1D).

19. Over the valuation period, the Fund earned the following returns on its assets taken at market value and actuarial value respectively:

| Year to 31 March | Investment return | |
|---|---|---|
| | Market value | Actuarial value |
| 2012 | 12.54% | 20.33% |

20. The average increase in pensionable salaries over the valuation period for members in the Fund at both valuation dates was as follows:

| Year to 31 March | Increase |
|---|---|
| 2012 | 8.07% |

21. A consolidated income statement showing cash flows during the valuation period is shown in Appendix 1.

## VALUATION PARTICULARS

22. The Fund is governed by its regulations as approved by the Registrar of Pension Funds and promulgated by the provincial legislature of KZN. The liabilities of the Fund towards its members and pensioners were calculated in accordance with the benefits and conditions of the regulations, as summarised in Appendix 3.

23. The Fund is self-administered. The administrator supplied particulars of –

23.1. audited financial statements (Appendix 1);

23.2. the assets held by the Fund at the valuation date (Appendix 5);

23.3. the members and pensioners of the Fund at the valuation date (Appendix 2); and

23.4. the conditions governing the payment of benefits in terms of the Regulations of the Fund (Appendix 3).

24. We have reconciled the valuation data with the financial statements and performed a number of reasonableness tests to verify the correctness of the data. Where problem areas were found, these were resolved with the administrators of the Fund and the data was adjusted accordingly (refer to Section D of Appendix 2). We are satisfied with the accuracy of the data for purposes of this valuation.

25. The valuation was based on the audited financial statements of the Fund.

26. Appendix 2 contains a detailed breakdown of the active member and pensioner data. A reconciliation of the number of active members, pensioners and deferred pensioners during the valuation period is also set out in Appendix 2.

**Membership data**

27. The data and information supplied are summarised below:

27.1. The data for the active members are summarised as follows as at the valuation dates:

| | 31 March 2011 | 31 March 2012 | Change |
|---|---|---|---|
| **Females** | | | |
| Number | 1 681 | 1 783 | 6.1% |
| Pensionable salary: | | | |
| - Total (R'000) | 261 735 | 288 477 | 10.2% |
| - Average (R) | 155 702 | 161 793 | 3.9% |
| Salary weighted average: | | | |
| - Age (years) | 45.3 | 45.3 | 0.1% |
| - Past Service (years) | 13.6 | 13.5 | -0.5% |
| **Males** | | | |
| Number | 3 792 | 3 550 | -6.4% |
| Pensionable salary: | | | |
| - Total (R'000) | 616 050 | 617 585 | 0.2% |
| - Average (R) | 162 460 | 173 968 | 7.1% |
| Salary weighted average: | | | |
| - Age (years) | 47.3 | 48.3 | 2.1% |
| - Past Service (years) | 16.1 | 16.8 | 4.3% |

27.2. The data for the pensioners are summarised as follows as at the valuation dates:

| | 31 March 2011 | 31 March 2012 | Change |
|---|---|---|---|
| **Pensioners** | | | |
| Number | 2 067 | 2 137 | 3.4% |
| Annual pensions:[1] | | | |
| - Total (R'000) | 119 810 | 132 098 | 10.3% |
| - Average (R) | 57 963 | 61 815 | 6.6% |
| Pension weighted:[2] | | | |
| - Age (years) | 67.3 | 68.3 | 1.5% |
| **Spouses** | | | |
| Number | 1 485 | 1 501 | 1.1% |
| Annual pensions:[1] | | | |
| - Total (R'000) | 52 956 | 54 650 | 3.2% |
| - Average (R) | 35 661 | 36 409 | 2.1% |
| Pension weighted:[2] | | | |
| - Age (years) | 62.7 | 62.1 | -0.9% |
| **Children** | | | |
| Number | 1 491 | 1 577 | 5.8% |
| Annual pensions:[1] | | | |
| - Total (R'000) | 10 763 | 11 765 | 9.3% |
| - Average (R) | 7 219 | 7 460 | 3.3% |
| Pension weighted:[2] | | | |
| - Age (years) | 17.0 | 18.4 | 8.3% |
| **Deferred pensioners** | | | |
| Number | 107 | 110 | 2.8% |
| Annual pensions:[1] | | | |
| - Total (R'000) | 5 617 | 6 049 | 7.7% |
| - Average (R) | 52 495 | 54 987 | 4.7% |
| Pension weighted:[2] | | | |
| - Age (years) | 53.7 | 55.1 | 2.6% |

## Asset data

28. The total market value of the assets was R 6 240 605 000, comprised as follows:

| | R'000 | % of assets |
|---|---|---|
| Equities | 3 378 994 | 54.15% |
| Interest bearing stock | 1 200 577 | 19.24% |
| Cash and deposits | 350 600 | 5.62% |
| Fixed assets | 26 047 | 0.42% |
| International assets* | 1 378 359 | 22.08% |
| Net current assets | (93 972) | (1.51%) |
| **Total at 31 March 2012** | 6 240 605 | 100.00% |

* International assets comprise of 68% collective investments and 32% other investments that cannot be identified separately but relates mainly to international equities

29. The Fund has a detailed investment strategy which takes into account the asset liability modelling exercise that was completed in February 2010. The Fund's strategic asset allocation in terms of this exercise was as follows:

| Asset class | Asset allocation |
|---|---|
| Local equities | 44% |
| Fixed interest | 23% |
| Inflation linked bonds | 10% |
| International Equities | 20% |
| Cash | 3% |
| **Total** | **100%** |

30. The results of the asset liability modeling exercise were used to determine the strategic benchmarks of the Fund as well as the ranges around the benchmarks. The actual asset allocation at valuation date is within the permissible ranges, as set out in the investment mandates given to the Fund's asset managers.

31. Over the valuation period the Fund earned 12,54% on the assets taken at market value and 20,33% on the assets taken at actuarial value.

## VALUATION METHOD

### Service to the valuation date

32. In order to value the Fund's defined benefit liabilities in respect of the members and pensioners, an actuarial valuation method and valuation assumptions are required. The valuation method and assumptions have no direct bearing on the ultimate cost of the defined benefits; they only determine how this cost is recognised over time.

33. The Fund's liabilities for members' service to the valuation date and for pensioners were calculated using a set of "best estimate" assumptions which are expected to apply over the long-term. The benefits payable by the Fund in future are estimated and these are discounted using the assumed long-term rate of interest, to give the present value of their liabilities for service to the valuation date. A similar approach is taken for pensions in payment. We have also allowed for an administration fee of R350 per annum in respect of each pension payable. As regards the Fund's assets, a value is determined by discounting expected future investment cash-flow at the same rate of interest, allowing for expected future growth in dividends and other investment income. In this manner an "actuarial value" is placed on the assets of the Fund.

34. The Pension Funds Act requires a fund to provide a minimum level of pension increases. In order to meet this requirement, the Fund keeps a separate record of the assets that are directly attributable to its pensioners and deferred pensioners in the Memorandum Account. Where the value of the pensioner assets exceeds the value of the pensioner liabilities, the excess assets are retained in the Memorandum Account.

35. We have been provided with information in respect of 1 053 pensioners whose pensions have been suspended because the Fund has not received proof of existence.

36. These pensions were valued on the assumption that the following proportion of the pensions would again become payable:

| Period since payments ceased | Proportion |
|---|---|
| more than 3 years | nil |
| between 2 and 3 years | one-sixth |
| between 1 and 2 years | one-half |
| less than 1 year | five-sixths |

37. We have been provided with details of 318 cases where a spouse and/or children's pension is possibly payable following the death of a member in the service or of a pensioner. The calculated liability of the pensions is R 86,1 million. The Fund is taking steps to trace dependants of the deceased members and pensioners and it is likely that, in a number of cases, no pension will become payable. For the valuation it was decided to include in the liabilities 50% of the calculated value, i.e. R43,05 million. This value was split so that an amount of R 40,1 million has been included in the Members' liabilities and R 2,95 million has been included in the Pensioner liabilities. This matter will be monitored at each valuation and

the figure of 50% adjusted appropriately. For the last statutory actuarial valuation an amount of R 53,4 million had been included in the Members' liabilities.

**Future service**

38. The Employers no longer permit new employees to join the Fund, so that it has effectively become a closed fund. This implies that the average age of the membership will increase, which in turn will mean an increase in the required rate of contribution. For the last statutory valuation and for this valuation, the rate of contribution has been determined on the "Attained Age" method. The latter method takes into account the closed nature of the Fund and determines the level rate of contribution that is required over the remaining service lifetime of the members.

39. If the valuation assumptions are realised, this level rate of contribution should remain sufficient despite an increase in the average age of members as reserves are built up when the average age is lower which offsets the increase in costs when the average age is high. This assumption may not be realised if:

    39.1. there are significant unforeseen changes in the membership, for example, if a significant number of members transfer between the Fund and the other Natal Joint funds; or

    39.2. such as is currently the case, there is a large deficit in the Fund. The excess contributions that would have been credited to these reserves are currently used to fund the deficit, resulting in a higher required contribution rate to fund future benefits.

40. Although the Fund is closed to new employees, members of the other two Natal Joint funds can transfer to the Fund after certain periods. During the valuation period such transfers into the Fund amounted to some 4% of membership. We have, nevertheless, for purposes of the valuation assumed that the Fund is closed to new members.

41. This basis is referred to as the Attained Age Method of Valuation.

42. There is no future service cost in respect of the pensioners or the deferred pensioners.

**Solvency reserves**

43. The assumptions used for the above calculations are "best estimate" assumptions of future experience. The Act permits a fund to maintain a Solvency Reserve in order to provide some protection to the Fund should the actual future financial experience of the Fund turn out to be less favourable than the "best estimate" financial assumptions used to value the defined benefit liabilities of the active members and pensioners. To determine the Solvency Reserve the valuation was also performed on an alternative basis, namely the "Discontinuance Method Approach" (DMA). This valuation takes into account investment conditions that are prevailing at the valuation date. The benefits payable by the Fund in the future, including pensions in payment, are estimated and these are discounted using the yield that could be earned on Government Stock at the valuation date. This gives the Fund's liabilities for service to the valuation date. Assets are taken at full market value.

44. The purpose of providing the results of two valuations is to give the Committee an indication of the sensitivity of the valuation results to the assumptions. The results of the DMA

valuation are also shown so that the Committee is aware of the position if the Fund were to be discontinued and the liabilities bought out in the market at the prevailing interest rates. The DMA valuation quantifies the contingency reserves required to cushion the Fund against investment and other risks, as discussed later in this report. The Solvency Reserve provides protection to the Fund against adverse experience in the future.

45. Legislation does not oblige a fund to hold a Solvency Reserve for purposes of financial soundness, but we would recommend that the Fund does hold a Solvency Reserve in order to provide protection for the interests of the various stakeholders if affordable. For this purpose we have applied the provisions of PF 117, the Circular issued by the Financial Services Board setting out the level of solvency reserves that the Financial Services Board considers reasonable.

## VALUATION ASSUMPTIONS

### Liabilities

46. The valuation assumptions used to determine the Fund's liabilities and reserves are based on "best estimate" assumptions. As at the valuation date the key "best estimate" financial assumptions are set out below (the assumptions used at the previous valuation date are in brackets):

    46.1. Investment returns of 10,0% per annum (10,0% per annum);

    46.2. Price inflation of 6,0% per annum (6,0% per annum);

    46.3. Salary increases of 7,0% per annum, plus a promotional salary scale (7,0% per annum plus a promotional scale); and

    46.4. Allowance for future pension increases equal to investment returns in excess of 5,0% per annum (unchanged).

47. At each statutory triennial valuation the Fund's actual experience is compared to the valuation assumptions and where necessary, the demographic assumptions are revised. This investigation is normally not performed for an interim actuarial valuation. However, for this valuation we did perform such an investigation and found that the assumptions used in the previous statutory valuation were still appropriate for the Fund at the current valuation date. Details of the assumptions are given in Appendix 4.

48. The financial assumptions were derived on methods consistent with those used for the last statutory valuation. See Appendix 4 for the methodology used to derive the assumptions.

49. For the DMA method of valuation, which is used to determine the Solvency Reserve, the financial assumptions were determined in the light of investment conditions prevailing at the valuation date as follows:

    49.1. Investment returns of 8,08% per annum;

49.2. Price inflation of 6,46% per annum;

49.3. Salary increases of 7,08% per annum; and

49.4. Allowance for future pension increases equal to investment returns in excess of 2,75% per annum.

50. The Committee has approved amendments to the Regulations of the Fund to place a limit on the increase in pensionable salaries, in order to allow the Fund to return to a sound financial condition. The limit has been set at the rate of inflation. It is expected that this will be implemented in the next year once the necessary Provincial legislation has been promulgated. This measure is a temporary measure and will be removed when the Fund is in a sufficiently sound financial condition. Because of the temporary nature of this measure, the restriction of salary increases has not been taken into account in the valuation assumptions.

51. The demographic assumptions discussed in paragraph 47 were also used for the DMA method of valuation.

52. The actual experience of the Fund is likely to differ from the assumptions made, and the actual cost of the liabilities will depend on the actual financial and demographic experience of the Fund.

53. Because the actual future experience of the Fund may be different than what is assumed, the reserves held in this valuation may prove to be insufficient or more than sufficient.

**Assets**

54. A comparison between the value of the assets and liabilities of the Fund can only be meaningful if the respective values are determined on a consistent basis.

54.1. For purposes of the valuation, the actuarial value of the assets was determined by discounting the expected future investment income from rental, dividends and interest, at the valuation rate of interest used to calculate the liabilities. Allowance was made for future increases in dividends, rentals etc.

54.2. This method of valuing the assets is consistent with the long term best estimate valuation of the liabilities. On this basis a value of R6 538,9 million was placed on the assets, that is R298,3 million above market value (Details are given in Appendix 5).

54.3. For the DMA method of valuation, assets were taken at market value.

54.4. The value placed on the assets for purposes of the valuation were as reflected below.

| | DCF Method | |
|---|---|---|
| | **31.03.2011** | **31.03.2012** |
| | **R'm** | **R'm** |
| Assets at market value | 5 614.5 | 6 240.6 |
| Investment Reserve | (113.0) | 298.3 |
| Actuarial value of assets | 5 501.5 | 6 538.9 |

## VALUATION RESULTS

### Service to the valuation date

55. The valuation disclosed that, in respect of the liabilities for service to the valuation date, the overall Fund was 96% funded as reflected below:

| | 31 March 2011 | 31 March 2012 |
|---|---|---|
| | R'm | R'm |
| Value of assets (Appendix 5) | 5 501.5 | 6 538.9 |
| Value of liabilities (Appendix 6) | (5 607.8) | (6 270.6) |
| Balance of assets in Memorandum Account | ( 315.5) | ( 405.0) |
| Risk Reserve | ( 127.7) | ( 133.3) |
| **Surplus (shortfall)** | **( 549.5)** | **( 270.0)** |
| Funding level | 90.9% | 96.0% |

56. From the table above it is noted that the Fund's financial position has improved from the previous statutory valuation. This is mainly due to investment earnings of 20,33% per annum on the actuarial value of assets which was more than the expected 10% per annum required in the valuation assumptions and the surcharge of 7% per annum of pensionable salaries that is paid by the local authorities.

57. The Fund holds a Memorandum Account in respect of pensioners. The financial position in respect of pensioners and active members separately was as follows:

| | 31 March 2011 R'm | 31 March 2012 R'm |
|---|---|---|
| **Memorandum Account (Pensioners)*** | | |
| Assets | 2 458.1 | 2 936.1 |
| Liabilities | (2 097.0) | (2 481.7) |
| Risk Reserve | ( 45.6) | ( 49.4) |
| **Balance of assets in Memorandum Account** | **315.5** | **405.0** |
| Funding level | 114.7% | 116.0% |
| **Active Members** | | |
| Balance of assets | 3 043.4 | 3 602.8 |
| Balance of liabilities** | (3 510.8) | (3 788.9) |
| Risk Reserve | ( 82.1) | ( 83.9) |
| **Surplus (Shortfall)** | **( 549.5)** | **( 270.0)** |
| Funding level | 84.7% | 93.0% |

* The liabilities for the pensioners include an allowance for the pension increase on 1 July 2012, an allowance for a once-off increase of 8.33% on merger with the Natal Joint Municipal Pension Fund (Retirement) and for payment of a thirteenth pension cheque in November 2012.

** Including allowance for pending spouse's pensions.

58. Over the period to 31 March 2012 the Fund earned higher than expected investment returns so that the funding level of the Memorandum Account increased from 114,7% at 31 March 2011 to 116,0% at 31 March 2012. The balance of R405 million is retained as a contingency reserve to provide for future minimum pension increases as prescribed by legislation and incorporated in the Fund's Regulations. It is also noted that should the Fund be merged with the Natal Joint Municipal Pension Fund (Retirement) the Fund's pensioners will be granted a special increase of 8,33%; the cost of such an increase has been included in the pensioner liability shown above.

59. The Fund's financial condition in respect of contributory members has improved significantly with the funding level increasing from 84,7% to 93%. The primary reasons for this improvement were higher than expected investment returns and the surcharge of 7% of pensionable salaries being paid by the local authorities. It is noted that salary increases over the period were only slightly more than assumed, which had a favourable impact on the increase in the funding level.

60. The statutory actuarial valuation of the Fund as at 31 March 2011 disclosed a deficit. In terms of Section 18 of the Act, the Fund was required to submit a "Scheme to Eliminate Deficiency" to the FSB. In terms of the scheme, a surcharge of 9,5% of pensionable salaries is payable for a period of 8 years with effect from 1 July 2012 to meet the deficit.

61. Based on the results of the valuation, we expect the surcharge of 9,5% of pensionable salaries to meet the deficit within the 8 year period.

62. This position will be reviewed at each future valuation to ensure that the Fund returns to a fully funded position

**Contingency Reserves**

Solvency Reserve

63. The DCF method of valuation is based on best-estimate assumptions, including the assumption that the Fund's equity and property investment will yield a higher return than fixed interest stock. If this assumption is not realised then future investment earnings will be lower than expected, leading to a shortfall arising in future years. To reduce this risk the Fund may hold a "Solvency Reserve", determined according to Circular PF117 which was issued by the Financial Services Board in June 2004. In the case of the Fund the Solvency Reserve would amount to R 2 430,1 million, as follows.

| | R'million |
|---|---|
| Liabilities per DMA method | 8 402.4 |
| Less: Liabilities per DCF method | (6 270.6) |
| Investment Reserve | 298.3 |
| | 2 430.1 |

64. The Solvency Reserve can be split as R 764,6 million in respect of pensioners and R 1 665,5 million in respect of actives.

64.1. The balance of the assets in the Memorandum Account amount to R405 million, which is less than the full theoretical Solvency Reserve for the pensioners of R764,6 million. I therefore recommend that the balance of R405 million be retained in the Memorandum Account towards building up the full Pensioner Solvency Reserve.

64.2. As regards the active members, the liabilities exceed the assets so that no funds are available at this stage towards retaining a Solvency Reserve for the active members. I do recommend however, that the Committee aim towards retaining a Solvency Reserve once the deficit has been eliminated.

Risk Reserve

65. Circular PF117 also gives recognition to the mortality risks to which the Fund is exposed. This arises from pensioners living longer than allowed for in the valuation assumptions, and excessive deaths and disability claims. A fund may hold a "Risk Reserve" based on the capital that would be required from an insurance company undertaking the business. In the case of the Fund, the Risk Reserve amounts to R 133,3 million calculated in accordance with paragraph 4.4 of Circular PF117, and we recommend that the Fund retains this reserve, comprising of R 49,45 million in respect of pensioners and R 83,85 million in respect of active members.

**Future Service**

66. Contributions being paid to the Fund at the valuation date, not including the surcharge, expressed as a percentage of the pensionable salaries, are reflected below:

| | % |
|---|---|
| by members | 9.25 |
| by the local authorities | 18.00 |
| Total | 27.25 |

67. The contribution rate payable at the previous statutory valuation date was not sufficient to cover the contribution rate required for future service showing a shortfall of 3,63% of pensionable salaries, as follows.

| | **31 March 2011** % |
|---|---|
| Method of valuation | Attained Age |
| Contribution rate currently payable | 27.25 |
| Contribution rate required for future service | 30.88 |
| Excess/(Shortfall) | (3.63) |

67.1. The General Committee accepted our recommendation to increase the employer's basic contribution from 18,00% to 21,63% (18,00% plus 3,63%) with effect from 1 July 2012.

67.2. The total rate of contribution required from the employer, including the surcharge, is thus 31,13% (21,63% plus the surcharge of 9,5%) of pensionable salaries payable for a period of 8 years with effect from 1 July 2012.

67.3. An additional surcharge is payable by local authorities who have granted excessive salary increases (see paragraph 75).

68. At the current valuation date the total required contribution rate for future service is 31,10% of pensionable salaries. This has been calculated using the Attained Age method of valuation as discussed in paragraph 38 above.

69. The contribution rate required to fund the cost of future service accrual increased from 30,88% at the previous valuation date to 31,10% at the current valuation date. We do not recommend that the employer's rate of contribution be increased any further at this stage. We will continue to monitor the situation at the next interim actuarial valuation at 31 March 2013 and make a recommendation to adjust the required contribution if necessary at that stage.

70. For the valuation period, the actual cost of expenses amounted to some 1,69% of pensionable salaries. The allowance for 1,25% of pensionable salaries per annum for administration costs was thus insufficient to fund these costs, mainly due to the purchase of a new administration system as well as moving the administrator to a new location. These are once-off expenses so that costs are expected to reduce in future. The allowance for expenses has therefore been retained at 1,25% of pensionable salaries. This will be closely monitored in future and might have to be increased if the allowance proves to be inadequate.

## OUTLOOK

### Investments

71. Over the period to 31 March 2012, the Fund earned 12,54% per annum on its assets at market value and 20,33% per annum on its assets taken at actuarial value. This is more than the 10% per annum assumed on the actuarial basis of valuation.

72. It is expected that the investment return of the Fund's assets will, over a reasonably long period, be sufficient to meet the increase in liabilities given measures the Fund has taken to limit salary increases (see paragraph 75).

73. Increases to pension at the rate of at least 75% of inflation a year can be met if the valuation assumptions are realised. Any additional increases must be met from investment returns in excess of those assumed or from surplus or other profits made on the operations of the Memorandum Account.

### Salary increases

74. The average salary increase over the valuation period was 8,07% per annum (for members common to both valuation dates), which is higher than the assumed salary increase of 7,0% over that period.

75. The Regulations of the Fund have been amended so that the General Committee is able to levy a separate surcharge on local authorities which grant excessive salary increases, thereby causing a financial strain on the Fund to the detriment of other stakeholders. Investigations into the surcharges due in this regard are performed annually, with the last investigation being performed as at 31 March 2011.

76. As mentioned in paragraph 50, the General Committee of the Fund approved a change in the regulations of the Fund so that pensionable salary increases will in future be capped at 100% of Headline inflation. This change will only be implemented once the amendment has been registered by the FSB and promulgated by the KZN provincial legislature. This will assist greatly in curbing the growth in the Fund's liabilities as a result of excessive salary increases.

### New members and transfers

77. The Fund has effectively been closed to new members, and it is therefore assumed, for the valuation, that no new members will join the Fund. However, at present, members of the three Natal Joint Funds are permitted to transfer between the funds and, this flow of members may affect the rate of contribution required to be paid to the Fund. It is noted that the number of members transferring into the Fund over the valuation period was some 4% of membership.

**Member and Local Authority Surplus Accounts**

78. The Financial Services Board recorded a Nil Surplus Return for the Fund as at 31 March 2002. Accordingly, the balances in both these accounts were nil at that date and have remained nil to the valuation date.

## CERTIFICATE

79. I am satisfied that the asset composition on the valuation date is appropriate to the nature of the liabilities and that the investment strategy of the Fund is suitable for the Fund.

80. The Fund self-insures its risk benefits. The lump sum element of these benefits is relatively small, with the major element comprising of annuity payments. I am satisfied that, given the recommended Risk Reserve, the Fund's reinsurance arrangements are appropriate.

81. The Fund's assets underlying the pensioner liabilities were sufficient to meet the pensioner liabilities as at the valuation date.

82. The assets underlying the active member liabilities were insufficient to meet these liabilities at the valuation date. In terms of the "Scheme to Eliminate Deficiency" that was submitted to the FSB following the previous statutory actuarial valuation, this deficit will be funded by the employer by means of an additional surcharge of 9,5% of pensionable salaries payable for 8 years from 1 July 2012.

The required contribution rate for future service benefits for active members exceeded the contribution rate payable with effect from 1 July 2012 by 0,22% of pensionable salaries. I recommend that the local authorities continue to pay the current contribution rate of 21,63% of pensionable salaries. This will be reviewed at the next interim actuarial valuation of the Fund as at 31 March 2013.

A.R.E.L.

**A R ELS (FASSA CFP CFA CERA)**
**VALUATOR**

In my capacity as valuator to the Fund
and as an employee of Arthur Els & Associates.

12 October 2012

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APPENDIX 1

## ACCOUNTS

1.1 The income and expenditure of the Fund during the valuation period were as follows:

| | R'000 | R'000 | R'000 |
|---|---|---|---|
| **Amount of Fund as at 31 March 2011 (as per AFS)** | | | **5 614 553** |
| **Income** | | | **578 206** |
| Contributions: | | 310 427 | |
| - Members | 83 832 | | |
| - Local authorities | 162 566 | | |
| - Surcharge | 64 029 | | |
| Transfers in | | 8 205 | |
| Investment returns | | 259 574 | |
| **Expenditure** | | | **-421 373** |
| Lump sum benefits: | | -167 217 | |
| - Disability | 0 | | |
| - Withdrawal | -53 700 | | |
| - Retirement | -92 168 | | |
| - Retrenchment | -342 | | |
| - Death | -8 273 | | |
| - Transfer to other funds | -8 247 | | |
| - Other (divorces) | -4 487 | | |
| Pensions | | -209 853 | |
| Investment managers' fees | | -29 014 | |
| Administration expenses | | -15 289 | |
| Net adjustment to fair value of assets | | | **469 219** |
| **Amount of Fund as at 31 March 2012 (as per AFS)** | | | **6 240 605** |

APPENDIX 2

## MEMBERSHIP STATISTICS

### A. MEMBERSHIP BUILD-UP

#### 1. Active Members

| | |
|---|---|
| Members at previous statutory valuation date | 5 473 |
| New members and transfers in | 208 |
| Reinstatements | 1 |
| Exits | |
| Retirement | (125) |
| Ill-health | (27) |
| Death | (54) |
| Resignation | (108) |
| Dismissal | (19) |
| Retrenchment | (0) |
| Deferred | (1) |
| Full transfer | (15) |
| **Members at current valuation date** | **5 333** |

#### 2. Pensioners

| | Former members | Spouses | Deferred | Children | Total |
|---|---|---|---|---|---|
| Pensioners at previous valuation date | 2 067 | 1 485 | 107 | 1 491 | 5 150 |
| Adjustments and cessations | (9) | (57) | 2 | (24) | (88) |
| New pensioners | 152 | 106 | 1 | 111 | 370 |
| Deaths | (73) | (33) | (0) | (1) | (107) |
| **Pensioners at current valuation date** | **2 137** | **1 501** | **110** | **1 577** | **5 325** |
| **of which** | | | | | |
| Pending Pensioners (see par 37 of main report) | 1 | 167 | 1 | 149 | **318** |
| Suspended Pensioners | 103 | 129 | 13 | 808 | **1 053** |

#### 3. Deferred Pensioners

The above summary includes 110 deferred pensioners (75 males and 35 females). By "deferred" is meant a pensioner whose service has ceased in the Fund and whose pension will commence on reaching the pension age.

## B. VALUATION DATA : ACTIVE MEMBERS

| Age nearest birthday | Number | Annual Pensionable salaries R | Contributions without interest R | Average pensionable service years |
|---|---|---|---|---|
| <=22 | 6 | 354 202 | 33 608 | 1.05 |
| 23 - 27 | 78 | 9 168 352 | 1 073 506 | 1.43 |
| 28 - 32 | 298 | 37 916 380 | 11 899 153 | 5.06 |
| 33 - 37 | 638 | 97 270 871 | 48 577 568 | 9.39 |
| 38 - 42 | 927 | 154 205 173 | 91 242 425 | 12.31 |
| 43 - 47 | 874 | 148 572 713 | 99 208 663 | 15.21 |
| 48 - 52 | 932 | 167 286 827 | 118 441 840 | 17.41 |
| 53 - 57 | 781 | 143 175 114 | 107 904 420 | 19.94 |
| 58 - 62 | 589 | 108 681 931 | 84 326 519 | 21.63 |
| 63+ | 210 | 39 430 721 | 31 693 564 | 21.69 |
| **Total** | **5 333** | **906 062 283** | **594 401 265** | **15.73** |

## C. VALUATION DATA : PENSIONERS

| Age nearest birthday | Former Members Number | Former Members Annual pension R | Spouses Number | Spouses Annual pension R |
|---|---|---|---|---|
| <28 | 0 | 0 | 8 | 234 369 |
| 28 – 32 | 1 | 66 466 | 15 | 454 976 |
| 33 – 37 | 2 | 84 028 | 63 | 2 705 631 |
| 38 – 42 | 18 | 747 923 | 91 | 3 899 546 |
| 43 – 47 | 30 | 1 666 497 | 130 | 5 113 601 |
| 48 – 52 | 50 | 2 493 914 | 131 | 4 594 974 |
| 53 – 57 | 106 | 6 960 055 | 130 | 4 793 021 |
| 58 – 62 | 238 | 17 515 873 | 160 | 6 056 247 |
| 63 – 67 | 514 | 37 226 565 | 141 | 4 926 489 |
| 68 – 72 | 477 | 28 740 806 | 158 | 5 352 398 |
| 73 – 77 | 308 | 16 446 018 | 155 | 5 079 303 |
| 78 – 82 | 206 | 10 269 691 | 135 | 4 832 326 |
| 83 – 87 | 118 | 6 983 872 | 106 | 4 243 195 |
| 88 – 92 | 58 | 2 727 331 | 53 | 1 781 360 |
| 93 – 97 | 9 | 167 233 | 21 | 540 202 |
| >97 | 2 | 1 642 | 4 | 42 616 |
| **Totals** | **2 137** | **132 097 915** | **1 501** | **54 650 252** |

The above summary includes cases where the pension has been ceased pending receipt of evidence of survival, and Pending Pensioners and Spouses.

## D. SUMMARY OF DATA CHECKS

A large number of tests on the reasonability and consistency of the data were carried out, including the following:

- Reconciliation of the number of members at the valuation date and the previous valuation date, with the movements in membership reported over the valuation period.
- Testing for very high, low, nil or negative salary increases of individual members over the valuation period.
- Testing whether the ages and salaries of individual members were within a reasonable range.
- Ensuring that the age and past service of each member did not conflict with the minimum entry age.
- Testing the reasonability of each member's total/accumulated contributions relative to salary and length of service.
- Checking the level of pensions against the pensions at the previous valuation date and increases granted since then.
- Testing the reasonableness of age differences between pensioners and their spouses.
- Checking for changes in the membership details over the valuation period.
- Identifying any missing or invalid data fields.
- We have reconciled the valuation data with the financial statements and performed a number of reasonableness tests to verify the correctness of the data.

Problems with the data supplied were resolved with the administrators of the Fund. Particular problems included dates of pensionable service changing upon moving between different local authorities, dates of pensionable service and contributions not adjusted upon divorce/payment of a loan, and transfers between funds not reconciled.

We have also established that the balance in the audited annual financial statements in respect of transfers out of the Fund has been overstated by some R 1 million. This will not have a material impact on the results of this valuation and for purposes of this valuation we have used the amounts reflected in the audited annual financial statements of the Fund.

We are satisfied with the general accuracy of the adjusted data and with its suitability for purposes of the valuation.

APPENDIX 3

## BENEFITS AND CONDITIONS

3.1 The principal benefits and conditions of the Fund are described below. Special conditions apply to certain classes of members and they were allowed for. Benefits other than those shown may be payable under certain circumstances, but it was not considered appropriate to make direct allowance for them in the valuation.

| | |
|---|---|
| Member's contributions | 9,25% of pensionable salaries |
| Pension age | 65 years (60 years for females at 31 July 1978 who did not elect 65 years) |
| Optional retiring date | The date on which a member attains age 60 years |
| Final average salaries | Average annual pensionable salaries during the last year of service |
| Bonus service included in continuous service | One year for twenty completed years of continuous service and one year for every five completed years of continuous service thereafter |
| Pension on retirement at pension age or at optional retiring date | 2,2% of final average salaries per year of continuous service |
| Lump sum on retirement at pension age or at optional retiring date | 8,25% of final average salaries per year of continuous service |
| Pension on retirement because of ill health (minimum ten years' continuous service | Pension as for retirement at the pension age (with minimum continuous service equal to one-half of the continuous service that the member would have had at the pension age) |
| Lump sum on retirement because of ill health (minimum ten years' continuous service) | Lump sum as for retirement at the pension age (with minimum continuous service equal to one-half of the continuous service that the member would have had at the pension age) |
| Lump sum on retirement because of ill health (less than ten years' continuous service) | Greater of two times member's contributions and resignation benefit |
| Spouse's pension on death in service | 1,2% of final average salaries per year of continuous service that the member would have had at the pension age |

| | |
|---|---|
| Spouse's pension on death of pensioner | 1,2% of final average salaries per year of continuous service |
| Lump sum on death in service | 10,75% of final average salaries per year of continuous service (minimum of one-quarter of annual pensionable salaries) |
| Lump sum on death of pensioner within five years of retirement | 25% of the balance of five years' pension payments |
| Withdrawal | Member's contributions plus 5/12% for each month of continuous service (the addition is approximately equivalent to compound interest at 10% a year) increased by 5% for each complete year of continuous service up to a maximum of 20 years; or if member has completed ten years of continuous service, a deferred pension and lump sum as for retirement at the pension age payable when he attains the pension age. |
| Prescribed minimum benefits | All benefits are subject to the minimum prescribed by the Pension Funds Act. |

APPENDIX 4

# VALUATION ASSUMPTIONS

## 1. General

To assess the financial position of the Fund, an attempt is made as far as possible to reach realistic long-term assumptions. A number of factors are considered, which are inter-related, often to such an extent that individual elements cannot be considered in isolation.

Our valuation basis takes into account the experience of the Fund and that of similar funds.

The actual long-term costs of the benefits depend on the actual experience of the Fund and not on the assumptions adopted. While the assumptions can affect the timing of the emerging cost in the short-term, they have little impact on the long-term cost.

It was decided to value the Fund on two alternative methods of valuation:

1.1 The first method is the "Discounted Cash Flow" (DCF) method of valuation that has been used for past valuations of the Fund. This is based on a set of assumptions which are expected to apply over the long-term. The benefits payable by the Fund in future are estimated and these are discounted using the assumed long-term rate of interest, to give the present value of their liabilities for service to the valuation date. A similar approach is taken to pensions in payment. As regards the Fund's assets, a value is determined by discounting expected future investment cash-flow at the same rate of interest, allowing for expected future growth in dividends and other investment income. In this manner an "actuarial value" is placed on the assets of the Fund.

1.2 The valuation was then performed on an alternative basis, namely the "Discontinuance Method Approach" (DMA). This valuation takes account of investment conditions at the valuation date. The benefits payable by the Fund in the future are estimated and these are discounted using the yield on Government Stock at the date of valuation. This gives the liability for service to the valuation date. Assets are taken at full market value.

Our assumptions are set out and motivated below. Assumptions used in the previous statutory valuation are shown in brackets.

## 2. Investment return

### 2.1 DCF Method

The assumed investment return is used as an interest rate to discount expected future cash flows. In estimating the future investment earnings, greater emphasis is placed on the long-term trend as opposed to the short-term experience of the Fund. Taking into account the structure of the Fund's assets we have assumed that the Fund will earn 10% p.a. over the long-term (10% p.a. previously).

We used the Fund's strategic asset allocation taken from the asset liability modeling exercise that was performed in 2010 and therefore assumed that the Fund will have the following asset allocation at valuation date:

- 3% of the assets generate cash returns of, say, 6,5% p.a.;
- 33% of the assets are invested in Fixed Interest stock yielding, say, 8,5% p.a.;
- 64% of the assets are invested in equities with an equity premium of 3% above the investment return on Fixed Interest stock so that earnings are 11,5% p.a.; and
- Expenses reduce the earnings by, say, 0,5%;

The calculated Expected Return on Assets is approximately 9,9% for the active members. We have accordingly used a long term investment return assumption of 10%.

This interest rate of 10% p.a. is only really significant in relation to the assumed long-term rate of salary inflation of 7,0%, as stated below.

We have therefore assumed that future investment returns will exceed future salary inflation by 3,0% p.a. (3,0% p.a. previously).

### 2.2 DMA Method

At the valuation date the yield on government stocks varied from 5,8% at the short-terms and 8,725% at longer terms. The liabilities of the Fund are predominantly long term and therefore it was decided to apply a rate of interest of 8,58%. An adjustment was made for investment fees of 0,5% a year. For purposes of valuation it was thus assumed that the Fund would earn 8,08% (8,58% less 0,5%) and this was the rate used to place a value on the liabilities of the Fund.

## 3. Inflation

### 3.1 DCF Method

It was assumed that inflation over the long-term will be 6% a year (6% a year previously), which is in line with the assumed underlying rate of inflation in the market. This implies that the Fund will earn 4% more than inflation (10% less 6%). This is consistent with the previous statutory actuarial valuation.

### 3.2 DMA Method

At the valuation date the yield on long-term government stock was 8,725% and that on inflation-linked bonds was 2,27%. The difference of 6,455% (8,725% less 2,27%) is the inflation implied by the market at the valuation date. We have therefore assumed an underlying rate of inflation of 6,46% a year for the DMA method of valuation.

## 4. Salary increases

### 4.1 DCF Method

General salary increases as a result of inflation have been provided for at 7,0% pa (7,0% previously) i.e. an assumption of inflation plus 1,0% (1,0% previously) which must be read in conjunction with the assumed rate of investment return.

In addition, we provided for merit increases based on the experience of the Fund. Samples of the increases allowed for are:

| **Age years** | **Merit increases per year %** |
|---|---|
| 20 | 7.7 |
| 25 | 2.9 |
| 30 | 1.8 |
| 35 | 0.7 |
| 40 | 0.1 |
| 45 | - |
| 50 | - |
| 55 | - |
| 60 | |

### 4.2 DMA Method

Allowance has been made for salaries to be increased in future at 1,0% p.a. above the assumed rate of inflation of 6,46%, i.e. at 7,46% p.a subject to a cap of 1% below the interest rate assumption, i.e. capped at 7,08% (8,08% less 1%).

In addition, we have allowed for merit and promotion increases according to the table set out in paragraph 4.1 above.

## 5. Pension increases

The pension increase policy of the Fund states that pensions will be increased annually by the greater of 75% of the increase in CPI or the increase affordable out of the investment return earned on pensioner assets (subject to a maximum of 100% of CPI). Based on an assumed investment return of 10% per annum (see paragraph 2.1) and inflation of 6% per annum (see paragraph 3.1), pension increases of 75% of inflation require a post retirement interest rate of 5,3% [1,10 divided by (1+0,75 times 0,06)]. In order to provide for at least 75% of inflation it was decided to use a post retirement rate of 5,0% per annum.

The General Committee is satisfied that the assets underlying the Memorandum Account are expected to achieve a real return that is sufficient to allow the Fund to grant pension increases of at least 75% of inflation when combined with a 5,0% per annum post retirement interest rate. This view is supported by the results of the 2009 asset liability modeling exercise undertaken by the Fund.

The post retirement interest rate was set at 5,0%. This rate is expected to allow for pension increases of approximately 80% of inflation.

For the DMA method of valuation the post retirement interest rate was set at 2,75% in order to allow for pension increases of approximately 80% of inflation.

## 6. Mortality

The mortality assumptions used for the last statutory valuation were retained for this valuation.

Examples of the mortality rates used are as reflected below.

| | **Active members** | | | **Pensioners** | |
|---|---|---|---|---|---|
| **Age** | **Males** % | **Females** % | **Age** | **Males** % | **Females** % |
| 20 | 0.1 | 0.2 | 60 | 1.76 | 0.77 |
| 25 | 0.3 | 0.2 | 65 | 2.73 | 1.33 |
| 30 | 0.4 | 0.3 | 70 | 4.21 | 2.27 |
| 35 | 0.6 | 0.4 | 75 | 6.43 | 3.85 |
| 40 | 0.8 | 0.5 | 80 | 9.71 | 6.45 |
| 45 | 1.2 | 0.6 | 85 | 14.41 | 10.62 |
| 50 | 1.8 | 0.9 | 90 | 20.86 | 17.00 |
| 55 | 2.7 | 1.3 | | | |
| 60 | 4.0 | 1.9 | | | |

The pensioner mortality assumption is equal to the PA(90) mortality table, with the age rated down by 1 year and allowing for future mortality improvements of 0,50% per annum from 2007 onwards, with an overall improvement in mortality of 10% after 20 years. The rates reflected in the table above is the PA(90) mortality rates less one year with no improvement.

## 7. Withdrawals

Withdrawals consist mainly of voluntary resignations and resignations to avoid dismissal. No special provision is made for exits such as retrenchments and transfers to other funds, since they are approximately financially neutral towards the Fund.

Allowance was made for the prescribed minimum withdrawal benefits in terms of the Pension Funds Act. The outcome of these minimum benefits is that the Fund are not expecting material withdrawal profits in respect of members who leave the Fund prior to retirement.

The withdrawal rates for the previous statutory valuation were retained for this valuation.

The withdrawal rates used are set out in the table below.

| **Age** | **Males** % | **Females** % |
|---|---|---|
| 20 | 20.0 | 10.0 |
| 25 | 12.0 | 10.0 |
| 30 | 8.0 | 9.0 |
| 35 | 5.0 | 7.0 |
| 40 | 3.0 | 5.0 |
| 45 | 1.0 | 3.0 |
| 50 | - | 1.0 |
| 55 | - | - |
| 60 | - | - |
| 65 | | |

## 8. Retirement due to poor health

We have allowed for members to retire on account of ill-health prior to attaining the pensionable age. We have retained the assumptions used for the last statutory valuation.

Examples of percentages of ill-health retirements expected at the respective ages are as set out in the table on the next page.

| Age | Males % | Females % |
|---|---|---|
| 20 | | |
| 25 | - | - |
| 30 | - | - |
| 35 | 0.1 | 0.1 |
| 40 | 0.3 | 0.2 |
| 45 | 0.4 | 0.3 |
| 50 | 0.5 | 0.5 |
| 55 | 1.2 | 1.0 |
| 60 | 2.4 | 1.7 |
| 65 | 4.4 | 2.6 |

## 9. Early retirement

Members are able to retire from age 60 with no reduction in benefits on account of early retirement. Based on the actual experience of the Fund, it was decided to retain the assumption that members would retire early as follows:

| Age | % of members retiring |
|---|---|
| To 59 | Nil |
| 60 | 10 |
| 61 | 5 |
| 62 | 5 |
| 63 | 5 |
| 64 | 5 |
| 65 | 100 |

## 10. Family statistics

We assumed that on average a husband will be 5 years older than his wife. We have also assumed that 100% of the male members and 50% of the female members are married.

## 11. Expenses

Expenses of administration are paid by the Fund and have therefore been included in the required contribution rate. Based on actual costs over the valuation period, we have allowed for expenses of 1,25% of pensionable salaries. Actual expenses over the valuation period exceed this allowance but these included once off expenses such as a new administration system.

In the case of current pensioners an allowance was made for expenses incurred in the payment of pensions, in both the DCF valuation and the DMA valuation. We have allowed for expenses to be incurred in the payment of pensions, at R 350 per pensioner per annum, increasing in future at the same rate as the pensions. This is the level of expense that would apply if pensions were paid by an outside administrator.

## 12. Insured benefits

The death and disability benefits are not insured. The costs will vary in the future as the age and gender distribution of the members changes and AIDS and other factors affect the underlying rates.

## 13. Prescribed minimum benefits

Active members

The Act prescribes minimum benefits to a member who leaves the Fund other than on retirement or death.

For each member the actuarial reserve was compared to the value of the minimum benefit that would become payable at each future date, if the member resigned from the service at that date. Where the latter figure exceeded the actuarial reserve, the difference was added to the liabilities of the Fund.

For calculating the value of the Prescribed Minimum Benefit the following assumptions were applied:

13.1 The deferred pension and gratuity was based on service accrued to the valuation date.

13.2 The Trustees have determined that the prescribed minimum benefits are to be calculated in accordance with the "40% EY" figures published by the Financial Services Board. We expect this figure to average some 3% over the long term and we have therefore applied this figure in calculating the minimum benefit mentioned above (previously we had applied the figure applicable at the date of valuation).

13.3 The pension will be payable from the member's normal retirement age.

13.4 Pre-retirement decrements are as set out above. Post-retirement mortality and allowance for pension increases after retirement are set out in paragraphs 5 and 6 above.

Pensioners

13.5 The Pension Funds Act prescribes minimum increases to pensioners. Each pension in payment must be compared to the pension at retirement increased by the full rate of inflation since date of retirement (if affordable). The last comparison in this regard was done as at 31 March 2011.

13.6 The Act requires the valuator to investigate the pension increases granted to pensioners every three years. The next investigation will be performed as part of the statutory actuarial valuation of the Fund as at 31 March 2014.

APPENDIX 5

# VALUATION OF ASSETS

## A. ASSET COMPOSITION

The total market value of the assets was R 6 240 605 000, comprised as follows:

| | Market value | | Actuarial value | | AV/MV |
|---|---|---|---|---|---|
| | R'000 | % of | R'000 | % of | |
| Equities | 3 378 994 | 54.15% | 3 686 176 | 56.37% | 109% |
| Interest bearing stock | 1 200 577 | 19.24% | 1 066 362 | 16.31% | 89% |
| Cash and deposits | 350 600 | 5.62% | 350 600 | 5.36% | 100% |
| Fixed assets | 26 047 | 0.42% | 26 047 | 0.40% | 100% |
| International assets | 1 378 359 | 22.09% | 1 503 665 | 23.00% | 109% |
| Net current assets | -93 972 | -1.51% | -93 972 | -1.44% | 100% |
| **Total at 31 March 2012** | 6 240 605 | 100.00% | 6 538 878 | 100.00% | 105% |

## B. ASSET VALUATION BASIS

1. For the best estimate method of valuation, it is necessary to discount expected future income and expenditure on a consistent basis. In the case of the valuation of the assets, this applies to expected receipts from investments, namely interest, rent, dividends and maturity payments.

2. Fixed interest assets were valued by calculating the discounted value of the expected cash flow, based on the valuation rate of interest of 10% p.a.

3. The dividend yield on the ALSI was approximately 3,0% at the valuation date. We have accordingly assumed a dividend growth rate of inflation plus 1,25%, i.e. at 7,25% per annum. If taken together with the assumed investment return of 10% per annum this means that we assume a dividend yield of 2,75% per annum, leading to equities being valued at 109% of market value.

   International assets were valued similarly to local assets invested in equities.

   Fixed assets were valued at market value.

   Cash and net current assets were taken at face value.

4. It was assumed that the mix of investments in other funds was similar to the mix in the balance of the Fund.

5. The actuarial value of the assets amounted to R6 538,9 million at the valuation date, which was equal to 104,8% of market value. The value of assets was therefore taken as R 6 538,9 million for purposes of this valuation.

APPENDIX 6

# VALUATION OF LIABILITIES

## A. TOTAL OF LIABILITIES

### Service to the valuation date

6.1 The value of the liabilities of the Fund for the service of members and former members to the valuation date was R 6 270 589, as follows:

| | 31 March 2011 | 31 March 2012 |
|---|---|---|
| | R'000 | R'000 |
| Members | 3 457 435 | 3 748 814 |
| Pending widow/ers | 53 414 | 40 120 |
| Pensioners | 1 344 761 | 1 486 277 |
| Spouses | 520 548 | 561 047 |
| Children | 29 411 | 32 094 |
| Deferred | 39 888 | 40 319 |
| Suspended Reserve | 53 238 | 51 363 |
| Increase in pensions* | 79 367 | 278 747 |
| 13th cheque November | 15 134 | 16 548 |
| Administration costs | 14 637 | 15 260 |
| **Past-service liabilities** | **5 607 833** | **6 270 589** |

* From 1 July of year of valuation, pro-rata for pensions in payment for less than a year at the valuation date as well as an allowance for a once-off increase of 8.33% on merger with the Natal Joint Municipal Pension Fund (Retirement).

### Future service

6.2 The "Attained Age" method of valuation was used which allows for the fact that the Fund is closed to new members, as explained in the main body of the report.

6.3 The contributions (expressed as a percentage of pensionable salaries) required for future service were as follows:

| | % |
|---|---|
| Benefits for future service | 29.85 |
| Administration expenses | 1.25 |
| | 31.10 |

## B. DETAILS OF LIABILITIES AT 31.3.2011

### Service to the valuation date

6.4 The components of the liabilities in respect of past service are:

| | R'000 |
|---|---|
| **Active members** | |
| Benefits on : | |
| retirement | 1 896 991 |
| death | 760 571 |
| ill-health | 742 316 |
| withdrawal | 167 957 |
| Past bonus service | 180 979 |
| | 3 748 814 |
| Pending spouse's pensions | 40 120 |
| **Sub-total (members)** | **3 788 934** |
| **Pensioners** | |
| Formerly active members | 1 486 277 |
| Spouses | 561 047 |
| Children | 32 094 |
| Suspended Reserve | 51 363 |
| Deferred pensioners | 40 319 |
| Pension increase | 278 747 |
| 13th pension cheque Nov' 2012 | 16 548 |
| Administration cost | 15 260 |
| **Sub-total (pensioners)** | **2 481 655** |
| **Total liabilities** | **6 270 589** |

* From 1 July of year of valuation, pro-rata for pensions in payment for less than a year at the valuation date as well as an allowance for a once-off increase of 8.33% on merger with the Natal Joint Municipal Pension Fund (Retirement).

### Future service

6.5 Expressed as a contribution rate, and allowing for the fact that the Fund is closed to new members, the future service liability is as follows:

| | **31.03.2012** |
|---|---|
| | **% of pensionable salaries** |
| Retirement | 14.87 |
| Disability | 5.10 |
| Death in service | 6.08 |
| Withdrawal | 1.58 |
| Future bonus service | 2.21 |
| Administration costs | 1.25 |
| **Total** | **31.10** |

APPENDIX 7

## CHANGE IN FINANCIAL CONDITION

7.1 The deficit at 31 March 2011 amounted to R 234,0 million which was made up of a deficit of R549,5 million in respect of the active members and a surplus of R 315,5 million in the Memorandum Account. The surplus as at 31 March 2012 was R 134,9 million which is made up of a surplus of R 404,9 million in the Memorandum Account and a deficit of R 270,0 million in respect of the active members. The Fund therefore showed net gain of R 368,9 million (R 234,0 million plus R 134,9 million).

7.2 The profits and losses (favourable and unfavourable deviations from the valuation assumptions) that together resulted in the net gain of R 368,9 million were determined, and the amount of each was calculated by approximate methods. The amounts shown in the paragraphs give only an indication of the relative importance of the items under consideration.

### Investment return

7.3 The investment return earned on the actuarial value of the assets during the valuation period was 20,33% a year. This was above the assumed valuation rate of 10% a year, resulting in a gain of R564,6 million. This was offset by interest on the deficit at 31 March 2011 of some R23,4 million resulting in a net gain of R 541,2 million.

### Surcharge

7.4 The contribution rate that was paid to the Fund as a surcharge by the local authorities during the valuation period to fund the deficit, less the shortfall that arose as a result of paying less than the required contribution rate over the valuation period, amounted to a gain of R32,0 million.

### Pensionable salaries

7.5 Pensionable salaries increased by 8,07% per annum which is more than had been assumed (paragraph 4.1), resulting in a loss of R 15,3 million.

### Expenses

7.6 An allowance of 1,25% of pensionable salaries is made to cover expenses. Actual expenses were higher than allowed for, resulting in a loss of R 4,2 million.

### Pensioners

7.7 The inclusion of the increase of 8,33% that is due to pensioners upon merger with the Natal Joint Municipal Pension Fund (Retirement) in the liabilities resulted in a loss of R 176,6 million.

### Demographic loss

7.8 The actual benefits paid out over the valuation period amounted to more than the expected reserves to be released and this resulted in a loss of about R 10,8 million.

### Miscellaneous

7.9 There were several other sources of profit and loss, but the amount in each case was too small to justify separate calculation. It was assumed for convenience that together they represent a net profit of R 2,6 million, the balancing item in the analysis.

### Summary

7.10 The change in the financial condition of the Fund during the period was therefore explained as follows:

| | **R'000** |
|---|---|
| Deficit at 31 March 2011 | (234.0) |
| Investment return | 541.2 |
| Excess contributions | 32.0 |
| Pensionable salaries | (15.3) |
| Expenses | (4.2) |
| Demographic loss | (10.8) |
| Pensioners (merger increase of 8.33%) | (176.6) |
| Miscellaneous | 2.6 |
| **Surplus at 31 March 2012** | **134.9** |

**APPENDIX 8**

## LIMITATIONS TO USE OF REPORT

This report has been prepared for the General Committee of the Natal Joint Municipal Pension Fund (Superannuation). Its contents and conclusions should not be used by any other party, as the purpose for which this report has been prepared may not be appropriate for other uses.

A third party who wishes to use the information, conclusions, recommendations or any other aspects of this report should contact the General Committee of the Natal Joint Municipal Pension Fund (Superannuation) who will in turn obtain written comment from Arthur Els & Associates on whether this report is appropriate for the intended use.

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2024