



**NATAL JOINT MUNICIPAL PENSION  
FUND (RETIREMENT) (12/8/6676/2)  
REPORT ON THE INTERIM ACTUARIAL  
VALUATION AS AT 31 MARCH 2008**

**Prepared by**

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**25 November 2008**

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31 MARCH 2008**

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## PART A : EXECUTIVE SUMMARY

1. We have performed an interim actuarial valuation of the Natal Joint Municipal Pension Fund (Retirement) (the “Fund”) as at 31 March 2008. The previous statutory valuation of the Fund was performed as at 31 March 2006 and the report on that valuation was lodged with the Financial Services Board. An interim actuarial valuation was also performed as at 31 March 2007.
2. At the valuation date (and at the previous statutory valuation date) the Fund covered the following membership:

	31 March 2006		31 March 2008	
	Number	Annual salaries/ pension R'000	Number	Annual salaries/ pension R'000
Active members	5 737	302 317	4 659	296 884
Pensioners	5 150	43 074	5 534	54 618

3. The market value of the Fund’s assets was R 1 571 700 000 at the valuation date.
4. The valuation of the Fund has been performed on two alternative approaches:
  - 4.1 Firstly the “Discounted Cash Flow” (DCF) valuation basis has been used. Under this basis a value is placed on the liabilities of the Fund using long-term “best estimate” assumptions, details of which are given in the main body of the report. A value is placed on the assets of the Fund applying assumptions that are consistent with those used to value the liabilities, based on the expected future investment cash flow.
  - 4.2 Secondly, a “Discontinuance Method Approach” (“DMA”) basis has been used. Under this basis the assets are taken at full market value and the rate of interest used for valuing the liabilities is based on the yield curve and the yield on inflation-linked stock at the valuation date. Details of the underlying assumptions are given in the main body of the report.
5. Both methods have advantages and disadvantages:
  - 5.1 The value placed on the assets under the DCF method can be quite different from the market value of the assets and thus this method can be seen as giving somewhat artificial results. However, it has the advantage that the results on this basis tend to be stable from valuation to valuation despite volatile investment conditions, because of the long term nature of the assumptions made.

- 5.2 The alternative valuation basis gives results that can be volatile from valuation to valuation. However it has the advantage of appearing “realistic” because the assets are taken at market value and the assumptions are based on investment conditions prevailing at the valuation date.
6. The purpose of providing the results of two valuations is to give the Committee of Management an indication of the sensitivity of the valuation results to the assumptions. In this report we have used the results of the DCF valuation, because of its relative stability, in order to determine the Fund’s liabilities. The results of the DMA valuation are shown so that the Committee are aware of the position if the Fund were to be discontinued and the liabilities bought out in the market at the prevailing interest rates.
7. The value placed on the assets for purposes of the valuation are:

	<b>DCF Method</b>		<b>DMA Method</b>
	<b>31.03.2006</b>	<b>31.03.2008</b>	<b>31.03.2008</b>
	<b>R'm</b>	<b>R'm</b>	<b>R'm</b>
Assets at market value	1 147,7	1 571,7	1 571,7
Less: Investment Reserve	<u>(139,4)</u>	<u>-</u>	<u>-</u>
Actuarial value of assets	<u>1 008,3</u>	<u>1 571,7</u>	<u>1 571,7</u>

It is noted that, for the DCF valuation at 31 March 2008, the Investment Reserve has been taken at nil, so that assets have been taken at market value for this method of valuation.

8. The statutory actuarial valuation as at 31 March 2000 disclosed that the Fund was in shortfall (the “2000 valuation shortfall”). As required by the Pension Funds Act, a “Scheme of Arrangement” was implemented so that the shortfall would be funded over the nine year period 1 July 2001 to 30 June 2010. The initial surcharge has been reviewed at each annual actuarial valuation.
9. With effect from 1 July 2000 the local authorities commenced paying a surcharge equal to 2% of pensionable salaries. The surcharge has been increased as follows:

<b>With effect from</b>	<b>Surcharge*</b>
1.07.2002	6%
1.07.2004	12%
1.07.2006	14%
1.07.2007	17%

\* 1,65% is paid by members

10. Based on the valuation assumptions that applied in 2000, (“the 2000 valuation”) the shortfall is expected to be fully funded by 30 June 2010, taking into account the current surcharge of 17%.

11. At each statutory triennial valuation the Fund's actual experience is compared to the valuation assumptions and where necessary, the assumptions are revised. The comparison is not usually made for interim valuations and the assumptions for the previous statutory valuation are usually applied. At the previous interim valuation, however, our investigation disclosed that the mortality assumption for pensioners was not in line with actual experience and hence the assumption was changed for that valuation. Other assumptions remained the same as were used for the last statutory valuation. On the revised valuation assumptions, a continuation of the current 17% surcharge is required for 2 years after June 2010 to return the funding level to 100%.
12. For this valuation we have retained the assumptions used for the previous interim valuation. Details are given in Appendix 4.
13. The valuation disclosed the following funding levels in respect of the liabilities for service to the valuation date:

	DCF Method		DMA Method
	31.03.2006	31.03.2008	31.03.2008
	R'm	R'm	R'm
<b><u>Total</u></b>			
Value of assets (Appendix 5)	1 008,3	1 571,7	1 571,7
Value of liabilities (Appendix 6)	(1 077,7)	(1 481,1)	(1 910,8)
Minimum pension Increase Reserve	(63,4)	(195,9)	(69,3)
Risk Reserve	(37,2)	(45,4)	(45,4)
Contribution Reserve	<u>(34,8)</u>	<u>(19,9)</u>	<u>(19,9)</u>
<b>Surplus (shortfall)</b>	<b><u>(204,8)</u></b>	<b><u>(170,6)</u></b>	<b><u>(473,7)</u></b>
Funding level	83,1%	90,2%	76,8%

14. On the DCF method the funding level has improved and the overall shortfall has decreased. This is partly due to the surcharge that is being paid into the Fund to fund the shortfall.
15. It is noted that the DMA method of valuation discloses a much greater shortfall of R 473,7 million. This indicates what the results would be if the Fund were to buy out its liabilities with an outside financial institution that invests only in risk-free investments. This valuation is based on investment conditions at the valuation date, so that the results can be very volatile from valuation to valuation. For purposes of determining the Fund's financial condition the results of the DCF method of valuation has been applied.

16. The valuation disclosed a surplus of R 195,9 million in respect of pensioners and a shortfall of R 170,6 million in respect of members, as follows:

	<b>DCF Method</b>		<b>DMA Method</b>
	<b>31.03.2006</b>	<b>31.03.2008</b>	<b>31.03.2008</b>
	<b>R'm</b>	<b>R'm</b>	<b>R'm</b>
<b><u>Memorandum Account (Pensioners)*</u></b>			
Assets	455,2	760,2	760,2
Liabilities	(380,9)	(550,6)	(677,2)
Risk Reserve	<u>(10,9)</u>	<u>(13,7)</u>	<u>(13,7)</u>
<b>Surplus (Shortfall)**</b>	<b><u>63,4</u></b>	<b><u>195,9</u></b>	<b><u>69,3</u></b>
Funding level	116,2%	134,7%	110,0%
<b><u>Members</u></b>			
Balance of assets	553,1	811,5	811,5
Balance of liabilities***	(696,8)	(930,5)	(1 233,6)
Risk Reserve	(26,3)	(31,7)	(31,7)
Contribution Reserve	<u>(34,8)</u>	<u>(19,9)</u>	<u>(19,9)</u>
<b>Surplus (Shortfall)</b>	<b><u>(204,8)</u></b>	<b><u>(170,6)</u></b>	<b><u>(473,7)</u></b>
Funding level	73,0%	82,6%	63,1%

\* The operation of the Memorandum Account is explained in detail in a separate report. The liabilities for the pensioners include an allowance for the pension increase on 1 July 2008.

\*\* This amount is retained in the Contingency Reserve to provide for minimum pension increases.

\*\*\* Including allowance for Death-in-service spouse's pension reserve.

17. The Fund's financial condition has improved, with the overall funding level increasing from 83,1% to 90,2% on the DCF method of valuation. The reasons for this are:
- 17.1 The Fund earned better than expected investment returns over the valuation period. This was partly offset by the next two points.
- 17.2 The valuation basis was strengthened in 2007 to allow for improving pensioner mortality in accordance with actual experience of the Fund.
- 17.3 Salary increases were higher than expected. From the data it is noted that the average salary increases over the past two years were 9,6% per annum, which is higher than inflation over that period.

- 18 The Regulations of the Fund have been amended with effect from 1 July 2004, so that the Committee of Management 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.
- 19 It must be borne in mind, however, that the surcharge may need to be increased if salary increases continue to exceed those affordable out of investment earnings.
- 20 Based on these changes in the surcharge and ability to recoup excessive increases in pensionable salaries, we expect the current surcharge to be sufficient to fund the 2000 valuation shortfall by June 2010. We also expect that an extension of this surcharge for another 2 years after 2010 will be required to bring the funding level of the Fund to 100% on the revised valuation basis of 2007 that corresponds to the actual experience of the Fund.
- 21 Contributions payable to the Fund at the valuation date, including the surcharge, expressed as a percentage of the pensionable salaries, are as follows:

	%	%
by members - basic	7,00	
- additional*	<u>1,65</u>	8,65
by the local authorities - basic	13,65	
- additional*	<u>15,35</u>	<u>29,00</u>
Total		<u>37,65</u>

\* Only in respect of members who were members at 30 June 2002.

- 22 The Employers are no longer permitting members to join the Fund, so that it is effectively closed to new members. This means that the average age will increase over time which, in turn, means that the required rate of contribution will also increase. Therefore the "Attained Age" method of calculating the required rate of contribution has been used for this valuation. This method determines a level rate of contribution that is required to be paid over the remaining service lifetime of the members. This method was also used in the last statutory valuation of the Fund as at 31 March 2006.
- 23 Excluding the surcharge, the "basic" contribution payable to the Fund is equal to 20,65% of pensionable salaries. Based on the DCF method of valuation, the basic contribution rate is less than the contribution rate required for future service by 1,92% of pensionable salaries, as reflected below:

	<b>31 March 2006</b>	<b>31 March 2008</b>
	%	%
Method of valuation	Attained Age	Attained Age
Contribution rate currently payable excluding surcharge	20,65	20,65
Members	7,00	7,00
Employer	<u>13,65</u>	<u>13,65</u>
Contribution rate required for future service	<u>22,06</u>	<u>22,57</u>
Excess/(shortfall)	<u>(1,41)</u>	<u>(1,92)</u>

- 24 Thus, once the surcharge ceases, the underlying rate of contribution will not be sufficient to meet the cost of the benefits. It is necessary to set aside a reserve to hold assets equal to the expected shortfall. For this reason a "Contribution Reserve" is held equal to the present value of the shortfall in terms of the Financial Services Board's Circular PF117 for the 4 years to 2012 when it is expected that the surcharge will cease. Note that, for purposes of the valuation, it is assumed that, once the surcharge ceases, the Employer contribution rate will be fixed at 18%. Based on the latter level of Employer contribution, there is no need for a Contribution Reserve thereafter.
- 25 I am satisfied that the asset composition on the valuation date is appropriate to the nature of the liabilities.
- 26 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 the self-reinsurance arrangement is appropriate for the Fund.
- 27 At the valuation date
- 27.1 The Memorandum Account was fully funded;
- 27.2 The Fund's liabilities for the Members exceeded the value of the assets. Based on the valuation assumptions that applied in 2000, it is expected that the surcharge of 17% of pensionable salaries will eliminate the shortfall by 30 June 2010.
- 27.2 However, based on the revised assumptions, which allow for the improving pensioner mortality, an extension of the surcharge for another 2 years will be necessary.
- 28 The position will be reviewed at the next statutory valuation of the Fund as at 31 March 2009.

**AR ELS (FIA CFP)  
VALUATOR**

In my capacity as valuator to the Natal Joint Municipal Pension Fund (Retirement) and as an employee of Arthur Els & Associates.

25 November 2008

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**NATAL JOINT MUNICIPAL PENSION FUND (RETIREMENT)  
REPORT ON THE INTERIM ACTUARIAL VALUATION OF THE FUND  
AS AT 31 March 2008**

**INTRODUCTION**

1. We have performed an interim actuarial valuation of the Natal Joint Municipal Pension Fund (Retirement) (the “Fund”) as at 31 March 2008. The previous statutory valuation of the Fund was performed as at 31 March 2006 and a copy of the report on that valuation was lodged with the Financial Services Board. An interim actuarial valuation was also performed as at 31 March 2007.
2. 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.

**PURPOSE OF THE VALUATION**

3. The purpose of the valuation is to consider the financial soundness of the Fund.
4. This requires that the following be determined:
  - 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;
  - whether the future contribution rates are sufficient to meet the future accrual of benefits stipulated in the Regulations of the Fund;
  - whether the contingency reserve accounts are appropriately funded; and
  - whether the nature of the assets of the Fund is suitable to match the nature of the liabilities of the Fund.
5. At each statutory triennial valuation the reasons for the change in the surplus/shortfall is investigated. This being an interim valuation, no such investigation has been performed, and a full investigation will be made when the next statutory triennial valuation is performed as at 31 March 2009.

### CHANGES SINCE LAST STATUTORY VALUATION

6. The last statutory valuation was performed as at 31 March 2006. The period between this date and the valuation date (31 March 2008) is referred to as the “valuation period”.

7. Since the last statutory valuation, pensions in payment were increased as follows:

1 July 2006	3,98%
1 July 2007	3,45%
1 July 2008	5,74%

8. Since 1 July 2000 additional contributions are being paid to the Fund towards meeting the shortfall in respect of the members’ liabilities, as follows:

<b>With effect from</b>	<b>Surcharge*</b>
1.07.2000	2%
1.07.2002	6%
1.07.2004	12%
1.07.2006	14%
1.07.2007	17%

\* 1,65% is paid by members

The additional contributions since 2002 are payable only in respect of members who were members at 30 June 2002.

### VALUATION PARTICULARS

9. Particulars were supplied of –

9.1 Audited financial statements (Appendix 1);

9.2 The assets held by the Fund at the valuation date (Appendix 5);

9.3 The members and pensioners of the Fund at the valuation date (Appendix 2); and

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

10. We have reconciled the valuation data with the financial statements and performed a number of reasonableness tests to verify the correctness of the data. In this regard we point out that:
- 10.1 About 20% of the pensioner liabilities relates to spouses where a spouse's pension is possibly payable following the death of a member in the service or of a pensioner (refer to paragraph 16); and
  - 10.2 Pensioners whose pensions have been suspended because the Fund has not received proof of existence (refer to paragraph 15).
- We have not taken full account of these liabilities as explained in paragraphs 15 and 16. The Committee must be aware of this discrepancy and monitor the situation closely.
- 10.3 We made some adjustments to the financial statements of 31 March 2008 (see the note in Appendix 1).
11. We are, however, satisfied with the accuracy of the data for purposes of this valuation.

## **VALUATION METHOD**

### **Service to the valuation date**

12. The Fund's liabilities for members' service to the valuation date and for pensioners was calculated on two alternative valuation methods:
- 12.1 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 "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. 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.
  - 12.2 A second valuation was then 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.

13. Each of the above methods has advantages and disadvantages.
- 13.1 The value placed on the assets under the DCF method can be quite different from the market value of the assets and thus this method can be seen as giving somewhat artificial results. However, it has the advantage that the results on this basis tend to be stable from valuation to valuation despite volatile investment conditions, because of the long-term nature of the assumptions made.
- 13.2 The alternative valuation method gives results that can be volatile from valuation to valuation. However it has the advantage of appearing “realistic” because the assets are taken at market value and the assumptions are based on investment conditions prevailing at the valuation date.
14. The purpose of providing the results of two valuations is to give the Committee of Management an indication of the sensitivity of the valuation results to the assumptions. In this report we have used the results of the DCF valuation, because of its relative stability, in order to determine the Fund’s liabilities. The results of the DMA valuation are shown so that the Committee are aware of the position if the Fund were to be discontinued and the liabilities bought out in the market at the prevailing interest rates.
15. We have been provided with information in respect of pensioners whose pensions have been suspended because the Fund has not received proof of existence. These pensions were valued on the assumption that the following proportion of the pensions would again become payable:
- | <b>Period since payments ceased</b> | <b>Proportion</b> |
|-------------------------------------|-------------------|
| 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       |
16. We have this year been provided with details of 489 cases where a spouse’s pension is possibly payable following the death of a member in the service or of a pensioner. We have allowed for an estimated pension per spouse of R 8 900 per annum where no data was available from the administrator. 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, so that an amount of R 44,9 million has been included in the Members’ liabilities. This matter will be monitored at each valuation and the figure of 50% adjusted appropriately.

### **Future service**

17. The Employers no longer permit members 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 the rate of contribution was determined on the "Attained Age" method. This 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.
18. If the valuation assumptions are realized, this level rate of contribution should remain sufficient despite an increase in the average age of members. This assumption may not be realised if there are significant unforeseen changes in the membership, for example, if a number of members transfer into the Fund or out of the Fund from the other Natal Joint funds. The position will be monitored at each valuation.
19. This basis is referred to as the Attained Age Method of Valuation and was used for the purpose of this interim valuation.

### **Risk Reserve**

20. The Fund self-insures its death and disability benefits and bears the longevity risk for its pensioners. It is prudent to maintain a "Risk Reserve" in order to give some protection against fluctuations in mortality and morbidity experience of the members, and against the longevity risk of pensioners. The Financial Services Board's Circular PF117 sets out a standard for determining such a reserve; based on the formulae set out in Circular PF117 a Risk Reserve of R 45,4 million is appropriate for the Fund and we recommend that such a Reserve be retained.

## **VALUATION ASSUMPTIONS**

### **Liabilities**

21. The expected future payments of benefits were projected using reasonable demographic assumptions regarding withdrawals, mortality, disability and retirement, and financial assumptions regarding the future salary increases until retirement and pension increases after retirement. The projected benefits were then discounted at the valuation rate of interest to determine the present value of the liabilities on the valuation date.
22. The statutory actuarial valuation as at 31 March 2000 disclosed that the Fund was in shortfall (the "2000 valuation shortfall"). As required by the Pension Funds Act, a "Scheme of Arrangement" was implemented so that the shortfall would be funded over the nine year period 1 July 2001 to 30 June 2010. The initial surcharge has been reviewed at each annual actuarial valuation and it has been found necessary to increase the level of the surcharge to the level of 17% of pensionable salaries with effect from 1 July 2007.

23. At each statutory triennial valuation the Fund's actual experience is compared to the valuation assumptions and where necessary, the assumptions are revised. That comparison is not usually made for interim valuations and the assumptions for the previous statutory valuation are applied. At the previous interim valuation, however, our investigation disclosed that the mortality assumption for pensioners was not in line with actual experience. This assumption was changed for that valuation. Other assumptions remained the same as were used for the last statutory valuation.
24. For this valuation we have retained the assumptions used in the previous interim valuation. Details are given in Appendix 4.
25. For the DMA method of valuation the assumptions were determined in the light of investment conditions prevailing at the valuation date. Details of the assumptions are given in Appendix 4.

### ASSETS

26. A comparison between the value of the assets and liabilities of the Fund can only be meaningful if the respective values were determined on a consistent basis.
- 26.1 For the DCF method of 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. On this basis the assets are valued at R1 608,9 million which is slightly in excess of the market value. We have decided to limit the value to market value. The actuarial value of the assets for this valuation is therefore taken to be R1 571,7 million.
- 26.2 For the DMA method of valuation, assets were taken at market value.
- 26.3 The value placed on the assets for purposes of the valuation are:

	DCF Method		DMA Method
	31.03.2006	31.03.2008	31.03.2008
	R'm	R'm	R'm
Assets at market value	1 147,7	1 571,7	1 571,7
Less: Investment Reserve	<u>(139,4)</u>	<u>-</u>	<u>-</u>
Actuarial value of assets	<u>1 008,3</u>	<u>1 571,7</u>	<u>1 571,7</u>

It is noted that, for the DCF valuation at 31 March 2008, the Investment Reserve has been taken at nil, so that assets have been taken at market value for this method of valuation.

- 26.4 The details of the basis used to value the assets, and the results thereof, are set out in Appendix 5.

## VALUATION RESULTS

### Service to the valuation date

27. Valuation results for this interim actuarial valuation are shown on two actuarial bases. The first result reflects the progression of the shortfall in the Fund based on the 2000 valuation basis. This enables the Committee to monitor the funding of the shortfall in comparison to the Scheme of Arrangement submitted to the FSB after the 31 March 2000 statutory actuarial valuation.
28. The second result reflects the position of the Fund on an updated valuation basis that corresponds to the Fund's actual experience over the last few years. This result shows the realistic position of the Fund going forward.
29. The valuation results based on the actuarial basis used in the previous statutory actuarial valuation of the Fund as at 31 March 2006 (consistent with the 2000 valuation basis) are as follows:

	<b>2006 valuation basis</b>	
	<b>DCF Method</b>	
	<b>31.03.2006</b>	<b>31.03.2008</b>
	<b>R'm</b>	<b>R'm</b>
<b><u>Total</u></b>		
Value of assets (Appendix 5)	1 008,3	1 571,7
Value of liabilities (Appendix 6)	(1 077,7)	(1 282,4)
Minimum pension Increase Reserve	(63,4)	(217,5)
Risk Reserve	(37,2)	(47,1)
Contribution Reserve	<u>(34,8)</u>	<u>(42,5)</u>
<b>Surplus (shortfall)</b>	<u>(204,8)</u>	<u>(17,8)</u>
Funding level	83,1%	98,9%

30. On the DCF method the funding level has improved and the overall shortfall has decreased. Based on the valuation assumptions used for the actuarial valuation in 2000, it is expected that the current surcharge of 17% (payable from 1 July 2007) will be sufficient to fund the shortfall by 30 June 2010 as was indicated in the Scheme of Arrangement submitted to the FSB after the 31 March 2000 statutory valuation.

31. As mentioned in paragraph 24, the 31 March 2007 interim actuarial valuation as well as this interim valuation was performed on revised assumptions in mortality for pensioners. The valuation results below reflect the position of the Fund on these revised assumptions.

	<b>Revised valuation assumptions*</b>		
	<b>DCF Method</b>		<b>DMA Method</b>
	<b>31.03.2006</b>	<b>31.03.2008</b>	<b>31.03.2008</b>
	<b>R'm</b>	<b>R'm</b>	<b>R'm</b>
<b><u>Total</u></b>			
Value of assets (Appendix 5)	1 008,3	1 571,7	1 571,7
Value of liabilities (Appendix 6)	(1 077,7)	(1 481,1)	(1 910,8)
Minimum pension Increase Reserve	(63,4)	(195,9)	(69,3)
Risk Reserve	(37,2)	(45,4)	(45,4)
Contribution Reserve	<u>(34,8)</u>	<u>(19,9)</u>	<u>(19,9)</u>
<b>Surplus (shortfall)</b>	<b><u>(204,8)</u></b>	<b><u>(170,6)</u></b>	<b><u>(473,7)</u></b>
Funding level	83,1%	90,2%	76,8%

\* Post retirement mortality assumption changed in interim valuation at 31 March 2007. Applied to 2007 and 2008 valuation results.

32. Even on the revised assumptions, the funding level has improved and the shortfall decreased. The difference in the two actuarial bases means that a continuation of the current 17% surcharge is required for 2 years after June 2010 to return the funding level to 100% on the revised assumptions.
33. The shortfall on the DMA method is higher than that under the DCF method, indicating the position that would apply if the Fund were to be discontinued and the liabilities bought out on the basis of interest rates at the valuation date. However, the Fund is an ongoing Fund with equity and other-inflation hedging assets which are expected to yield a higher return than fixed interest stock and hence the results the DCF method of valuation are used to determine the Fund's financial position for purposes of this report.
34. On the revised assumptions, the overall shortfall comprised of a surplus of R 195,9 million in respect of pensioners and a shortfall of R 170,6 million in respect of members, as reflected on the next page.



	DCF Method		DMA Method
	31.03.2006 R'm	31.03.2008 R'm	31.03.2008 R'm
<b><u>Memorandum Account (Pensioners)*</u></b>			
Assets	455,2	760,2	760,2
Liabilities	(380,9)	(550,6)	(677,2)
Risk Reserve	<u>(10,9)</u>	<u>(13,7)</u>	<u>(13,7)</u>
<b>Surplus (Shortfall)**</b>	<u><b>63,4</b></u>	<u><b>195,9</b></u>	<u><b>69,3</b></u>
Funding level	116,2%	134,7%	110,0%
<b><u>Members</u></b>			
Balance of assets	553,1	811,5	811,5
Balance of liabilities***	(696,8)	(930,5)	(1 233,6)
Risk Reserve	(26,3)	(31,7)	(31,7)
Contribution Reserve	<u>(34,8)</u>	<u>(19,9)</u>	<u>(19,9)</u>
<b>Surplus (Shortfall)</b>	<u><b>(204,8)</b></u>	<u><b>(170,6)</b></u>	<u><b>(473,7)</b></u>
Funding level	73,0%	82,6%	63,1%

\* The operation of the Memorandum Account is explained in detail in a separate report. The liabilities for the pensioners include an allowance for the pension increase on 1 July 2008.

\*\* This amount is retained in the Contingency Reserve to provide for minimum pension increases.

\*\*\* Including allowance for Death-in-service spouse's pension reserve.

35. Over the twenty-four months to 31 March 2008 the Fund earned good investment returns. The overall effect was that the financial condition of the Memorandum Account has improved from a funding level of 116,2% at 31 March 2006 to a funding level of 134,7% at 31 March 2008. The surplus is retained as a contingency reserve to provide for minimum pension increases as prescribed by legislation and incorporated in the Fund's Pension Increase Policy. The Memorandum Account also has a surplus on the DMA method of valuation, indicating that this Account is financially sound even if the underlying assets are invested in risk-free investments.
36. The funding level in respect of the Members' liabilities has improved from 73,0% to 82,6%. The primary reason is better than expected investment returns. These were partly offset by the increase in liabilities due to larger than expected salary increases.

37. There is a shortfall on the DMA method of valuation. The difference between the results of the DCF and DMA valuation quantifies the reliance being placed by the Committee of Management on investment returns on the Fund's investment portfolio being higher than are currently obtainable on risk-free investments.
38. We expect the current surcharge to be sufficient to fund the 2000 valuation shortfall by 30 June 2010. We also expect that an extension of this surcharge for another 2 years after 2010 will be required to bring the funding level of the Fund to 100% on the revised valuation basis that allows for improving pensioner mortality that corresponds to the actual experience of the Fund.
39. It must be borne in mind, however, that the surcharge may need to be increased if salary increases continue to exceed those affordable out of investment earnings.

### Contingency Reserves

40. The DCF method of valuation is based on best-estimate assumptions, including the assumption that the Fund's equity and property investments 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 could hold a "Solvency Reserve", determined according to Circular PF117 which was issued by the Financial Services Board in June 2004. The Solvency Reserve is the size of reserve needed to compensate the Fund for taking investment risk, because the DMA valuation adopts a "risk-free" approach to investment. In the case of the Fund the Solvency Reserve would amount to R 429,7 million, as reflected below:

	<b>R' million</b>
Liabilities per DMA method	1 910,8
Less: Liabilities per DCF method	(1 481,1)
Investment Reserve	<u>429,7</u>

41. In view of the shortfall in the Fund, it was deemed not appropriate to retain a Solvency Reserve at this stage. The Committee of Management should be aware of the risks that this entails, as discussed in paragraph 14.
42. 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 where benefits are not reinsured with an insurer but are paid directly from a Fund. A fund may hold a "Risk Reserve" equivalent to 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 45,4 million calculated in accordance with paragraph 4.4 of Circular PF117. It is prudent that the Fund retains a Risk Reserve in order to give protection against fluctuations in mortality and for that reason such a reserve was introduced in the last statutory valuation as at 31 March 2006. We recommend that this reserve be maintained and we have allowed for this Reserve, comprising R 13,7 million in respect of pensioners and R 31,7 million in respect of active members.

### Future service

43. Contributions payable to the Fund at the valuation date, including the surcharge, expressed as a percentage of the pensionable salaries, are:

	%	%
by members - basic	7,00	
- additional*	<u>1,65</u>	8,65
by the local authorities - basic	13,65	
- additional*	<u>15,35</u>	<u>29,00</u>
Total		<u>37,65</u>

44. The total required contribution rate for future service is 22,57% of pensionable salaries before taking account of the past service shortfall. This has been calculated on the DCF basis in order to arrive at a relatively stable long-term rate of contribution, using the Attained Age method of valuation.

45. Based on the DCF method of valuation, the contribution rate payable at the valuation date was less than the contribution rate required for future service by 1,92% of pensionable salaries, as reflected below:

	<b>31 March 2006</b>	<b>31 March 2008</b>
	%	%
Method of valuation	Attained Age	Attained Age
Contribution rate currently payable excluding surcharge	20,65	20,65
Contribution rate required for future service	<u>22,06</u>	<u>22,57</u>
Excess/(shortfall)	<u>(1,41)</u>	<u>(1,92)</u>
Total excess		

46. Thus, once the surcharge ceases, the underlying rate of contribution will not be sufficient to meet the cost of the benefits. It is necessary to set aside a reserve to hold assets equal to the expected shortfall. For this reason a "Contribution Reserve" was introduced in the last statutory valuation equal to the present value of the shortfall in terms of the Financial Services Board's Circular PF117 for the 4 years to 2012 when it is expected that the surcharge will cease. Note that, for purposes of this valuation, it is assumed that, once the surcharge ceases, Employer contributions will be fixed at 18%. Based on the latter level of Employer contribution, there is no need for a Contribution Reserve thereafter.

### Surcharge

47. The statutory actuarial valuation as at 31 March 2000 disclosed that the Fund was in shortfall (the "2000 valuation shortfall"). As required by the Pension Funds Act, a "Scheme of Arrangement" was implemented so that the shortfall would be funded over the nine year period 1 July 2001 to 30 June 2010. The initial surcharge has been reviewed at each annual actuarial valuation and it has been found necessary to increase the level of the surcharge, to the level of 17% of pensionable salaries that applied from 1 July 2007.

48. We expect that, at this level, the surcharge will be sufficient to eliminate the 2000 valuation shortfall by 30 June 2010.

## **OUTLOOK**

### **Investments**

49. Over the inter-valuation period, the Fund earned 16,25% per annum on its assets taken at market value, which has improved the Fund's financial position.
50. It is expected that the investment return of the Fund's assets will, over a reasonably long period, be greater than that required to meet the increase in liabilities as a result of reasonable salary increases. If it does occur that investment earnings continue to be lower than required to support the increase in liabilities as a result of salary increases, the local authorities might need to be called upon to further increase their contributions to the Fund.
51. Increases to pensions at the rate of about 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**

52. A primary reason for the Fund not being in a sound financial condition, and for the increase in the surcharge over the years, has been the excessive increases in pensionable salaries relative to inflation. For the valuation period the average salary increases were 9,6%.
53. The Regulations of the Fund have been amended so that the Committee of Management 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. This is effective from 1 July 2004.
54. The above step will assist in curbing the growth in the Fund's liabilities as a result of excessive salary increases.
55. If increases in pensionable salaries continue to be well in excess of inflation, a further surcharge might be required to fund the additional cost incurred.

### **Withdrawals**

56. Prior to promulgation of the Pension Funds Second Amendment Act, 2001, there were profits in the event that the number of actual withdrawals exceeded the number allowed for in the valuation assumptions. However, the introduction of the prescribed minimum benefits means that such profits will be immaterial in future.

**New members and transfers**

57. 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.

**AIDS**

58. A study was undertaken on 2002 of the expected impact that AIDS will have on the Fund. The results showed that, although the Fund is fairly well protected in relation to many other funds, AIDS is likely to result in an increase in the required rate of contribution of some 4% of pensionable salaries by 2010. The Fund has subsequently become closed to new members, which affects its exposure to AIDS, and is likely to reduce the impact of AIDS on the Fund in future. We, nevertheless, recommend that an AIDS investigation be repeated in order to determine the Fund's financial exposure to the risk of AIDS.

**CERTIFICATE**

59. I am satisfied that the asset composition on the valuation date is appropriate to the nature of the liabilities.
60. 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 the self-reinsurance arrangement is appropriate for the Fund.
61. At the valuation date:
- 61.1 The Memorandum Account was fully funded;
- 61.2 The Fund's liabilities for the Members exceeded the value of the assets. We expect that the surcharge of 17% of pensionable salaries will enable the 2000 valuation shortfall to be eliminated by 1 July 2010.
- 61.3 In order to allow for the improving pensioner mortality, an extension of the surcharge for another 2 years will be necessary.
62. The position will be reviewed at the next statutory valuation of the Fund as at 31 March 2009.

**A R E L S (FIA CFP)  
VALUATOR**

In my capacity as valuator to the Natal Joint Municipal Pension Fund (Retirement) and as an employee of Arthur Els & Associates.

25 November 2008

## ACCOUNTS

- 1.1 We have been advised that the breakdown of benefit payments shown on the audited financial statements is incorrect, and the Fund accountant provided us with a schedule giving the correct figures. Taking into account the revised figures, 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 2006 (market value)			1 147 657
<b>Income</b>			<b>323 883</b>
Contributions		211 529	
- Members	47 329		
- Local authorities	164 200		
Transfers in		156	
Unclaimed benefits		2 053	
Investment returns		110 145	
<b>Expenditure</b>			<b>(197 292)</b>
Lump sum benefits*		(85 834)	
- disability	Nil		
- withdrawal	3 626		
- retirement	(19 694)		
- retrenchment	(184)		
- death	(28 757)		
- transfer to other funds	(40 825)		
Pensions		(81 142)	
Other		(205)	
Investment managers' fees		(14 946)	
Administration expenses		(12 966)	
Tax		(2 199)	
Net adjustment to fair value of assets			297 455
<b>Amount of Fund as at 31 March 2008 (market value)</b>			<b><u>1 571 703</u></b>

## MEMBERSHIP STATISTICS

## A. MEMBERSHIP BUILD-UP

## 1. Active Members

Members at last statutory valuation date	5 737
New members	32
Exits	
Transfer to Superannuation	(162)
Transfer to KZN Pension Fund	(29)
Retirement	(220)
Ill-health	(98)
Death	(394)
Resignation	(62)
Dismissal	(34)
Retrenchment	(12)
Transfer to Provident	(99)
<b>Members at current valuation date</b>	<b><u>4 659</u></b>

## 2. Pensioners

	Former members	Spouses	Deferred	Total
Pensioners at previous valuation date	1 749	3 314	87	5 150
Adjustments and cessations	(1)	(175)	(13)	(189)
New pensioners	316	554	11	881
Deaths	(213)	(89)	(6)	(308)
<b>Pensioners at current valuation date</b>	<b><u>1 851</u></b>	<b><u>3 604</u></b>	<b><u>79</u></b>	<b><u>5 534</u></b>

## 3. Deferred Pensioners

The above summary includes 79 deferred pensioners (65 males and 14 females). By “deferred” is meant a pensioner whose pension is payable by the employing local authority until the pensioner attains the pension age.

## B. VALUATION DATA : ACTIVE MEMBERS

### 1. Analysis

Age last birthday	Number	Pensionable salaries R'000	Contributions without interest R'000	Average pensionable service Years
<=22	1	38 462	5 563	2
23 – 27	29	1 782 257	349 669	3
28 – 32	163	11 550 498	3 955 171	7
33 – 37	450	30 626 641	14 259 767	11
38 – 42	709	45 050 450	24 290 988	13
43 – 47	962	61 451 935	35 314 347	16
48 – 52	856	53 685 556	31 679 568	18
53 – 57	762	47 891 433	28 808 320	19
58 – 62	581	35 846 542	22 073 900	20
63+	146	8 960 118	5 523 512	19
	<b>4 659</b>	<b>296 883 892</b>	<b>166 260 805</b>	<b>17</b>

### 2. Statistics

		Current Valuation Date
(i)	<b>Females</b>	
	Number of members	640
	Average age (years)	46,3
	Annual pensionable salaries total (R'000)	37 060
	average (R )	57 906
(ii)	<b>Males</b>	
	Number of members	4 019
	Average age (years)	47,8
	Annual pensionable salaries total (R'000)	259 824
	average (R )	64 649



## C. VALUATION DATA : PENSIONERS

### 1. Summary

	<b>Current Valuation Date</b>
(iii) <b>Former members</b>	
Number of pensioners	1 851
Average age (years)	71
Annual pension	
total (R'000)	22 464
average (R )	12 136
(iv) <b>Spouses</b>	
Number of pensioners	3 604
Average age (years)	56
Annual pension	
total (R'000)	31 366
average (R )	8 703
(v) <b>Deferred pensioners</b>	
Number of pensioners	79
Average age (years)	58
Annual pension	
total (R'000)	787
average (R )	9 969

## 2. Further analysis

Age nearest birthday	Former Members		Spouses	
	Number	Annual Pension R	Number	Annual Pension R
<29	-	-	14	226 367
29 – 32	-	-	48	807 548
33 – 37	2	28 575	139	2 313 155
38 – 42	10	142 201	292	4 017 396
43 – 47	24	391 010	434	5 360 828
48 – 57	106	1 903 944	1019	9 225 203
58 – 67	520	10 322 374	955	6 296 147
68 – 72	393	5 908 387	317	1 535 028
73 – 77	273	2 236 389	197	755 058
78 – 82	300	1 140 955	128	539 865
83 – 87	162	282 456	39	149 174
88 – 92	47	62 601	20	133 285
93 – 97	11	40 235	1	6 333
>97	3	4 871	1	568
<b>Totals</b>	<b>1 851</b>	<b>22 463 998</b>	<b>3 604</b>	<b>31 365 955</b>

## 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.
- A concern in respect of the data is that about 20% of the pensioner liabilities relates to spouses where a spouse's pension is possibly payable following the death of a member in the service or of a pensioner (refer to paragraph 16 of the main report); and pensioners whose pensions have been suspended because the Fund has not received proof of existence (refer to paragraph 15 of the main report).

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

### BENEFITS AND CONDITIONS

3.1 The benefits of the Fund at the valuation date are briefly described below:

Member's contributions	7% of pensionable salaries, plus a surcharge of 1,65% of pensionable salaries in respect of members who were members at 30 June 2002
Pension age	65 years
Final average salaries	Average annual pensionable salaries during the last year of service
Pension on retirement at pension age	2,1% of final average salaries per year of continuous service
Lump sum on retirement at pension age	5,5% 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
Lump sum on retirement because of ill health (minimum ten years' continuous service)	Lump sum as for retirement at the pension age
Lump sum on retirement because of ill health (less than ten years' continuous service)	The greater of the resignation benefit or twice the member's contributions
Spouse's pension on death in service	1,05% of final average salaries per year of continuous service at date of death and 75% of potential service to the pension age
Spouse's pension on death of pensioner	1,05% (0,77% for pensioners who retired before 1 July 1999) of final average salaries per year of continuous service
Lump sum on death in service	Annual pensionable salaries

Withdrawal	Member's contributions plus $\frac{5}{12}\%$ 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 100% after 20 years of service; 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.

## VALUATION ASSUMPTIONS

### A. VALUATION BASIS

#### 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 Pension Fund and that of similar funds.

The actual long-term costs of the benefits depends 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 “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 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 the 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 into 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.

The assumptions are largely the same as were used for the last statutory valuation of the Fund with the exception of the post retirement mortality rate, as discussed 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 (9% p.a. previously).

The Fund is not subject to Retirement Funds Tax (with effect from 1 March 2007).

Allowing for the Fund's relatively large holdings of equities, it was assumed that:

- 5% of the assets generate cash returns of, say, 6,5% p.a.;
- 25% of the assets are invested in Fixed Interest stock yielding, say, 7,5% p.a.;
- 5% of the assets are invested in property earning 8,5% p.a.;
- 65% of the assets are invested in equities with an equity risk premium of 3% above the investment return on Fixed Interest stock so that earnings are 12% p.a.; and
- Expenses reduce the earnings by, say, 0,5%;

The calculated Expected Return on Assets is approximately 9,93% 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 6,5% (5,5% previously), as stated below.

We have therefore assumed that future investment returns will exceed future salary inflation by 3,5% p.a.. This is consistent with the previous statutory and interim actuarial valuations.

### 2.2 DMA Method

At the valuation date the yield on government stocks varied from 9,7% at the short-terms and 9,1% at longer terms. The liabilities of the Fund are predominantly long term and therefore it was decided to apply a rate of interest of 8,6%. 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 8,62% (9,1% 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 (5% 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 and interim actuarial valuations.

#### 3.2 DMA Method

At the valuation date the yield on long-term government stock was 9,1% and that on inflation-linked bonds was 2,4%. The difference of 6,7% (9,1% less 2,4%) is the inflation implied by the market at the valuation date. We have therefore assumed an underlying rate of inflation of 6,7% 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 6,5% pa (5,5% 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:

	<b>Merit increases per year</b>
	%
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 0,5% p.a. above the assumed rate of inflation of 6,7%, i.e. at 7,2% p.a.

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



## 5. Pension increases

It has been, and continues to be, the policy of the Committee of Management to increase pensions at the rate of inflation provided this is affordable, based on investment returns in excess of 5,5% a year. The increases are subject to a minimum of 75% and a maximum of 100% of Core inflation.

The post retirement interest rate was set at 5,5%. This rate is expected to allow for pension increases of 75% of inflation.

## 6. Mortality

The mortality assumptions used for the last statutory valuation were retained for all active members of the Fund. For pensioners, a lighter mortality assumption was used in this valuation compared to the statutory valuation, to reflect the actual experience in the Fund. Examples of the mortality rates used are as follows:

Age	<u>Active members</u>		Age	<u>Pensioners</u>	
	Males %	Females %		Males %	Females %
20	1,2	0,2	60	2,5	1,2
25	1,4	0,4	65	3,9	2,0
30	1,8	0,5	70	5,9	3,5
35	2,4	0,7	75	8,9	5,8
40	3,0	0,9	80	13,3	9,6
45	3,6	1,2	85	19,4	15,5
50	4,2	1,8	90	27,4	24,0
55	5,0	2,6			
60	6,2	3,9			
65	7,6	5,4			

## 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 Second Amendment Act. The outcome of these minimum benefits is that the Fund no longer makes material withdrawal profits in respect of members who leave the Fund prior to retirement.

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

<b>Age</b>	<b>Males</b> %	<b>Females</b> %
20		
25	10,0	10,0
30	6,0	6,0
35	4,0	4,0
40	3,0	3,0
45	2,0	2,0
50	1,0	1,0
55	0,5	0,5
60	-	-
	-	-

These rates are the same as used for the previous valuation.

## **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 follows:

<b>Age</b>	<b>Males</b> %	<b>Females</b> %
20	-	-
25	-	-
30	0,1	0,1
35	0,2	0,2
40	0,4	0,3
45	0,8	0,4
50	1,5	0,7
55	2,2	1,3
60	3,3	2,1
65	4,5	3,5

## **9. Family statistics**

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

## 10. 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.

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.

## 11. 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.

## 12. Prescribed minimum benefits

For each member the actuarial reserve was compared to the value of the minimum benefit that would be payable at the valuation 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:

- 12.1 The deferred pension is based on service to the valuation date.
- 12.2 The rate of discount is 2,67% (40% of ALSI Earnings Yield at the date of valuation).
- 12.3 The pension will be payable from the member's normal retirement age.
- 12.4 No decrements are applied in placing a value on the deferred pension, until retirement at the normal retirement age.
- 12.5 Post-retirement mortality and allowance for pension increases after retirement are set out in paragraphs 5 and 6 above.

## VALUATION OF ASSETS

### A. ASSET COMPOSITION

The total market value of the assets was R 1 571 702 000, comprised as follows:

	R'000
Equities	947 018
Interest bearing stock	223 526
Cash and deposit	246 263
International assets	218 175
Current assets	9 790
Current liabilities	<u>(73 070)</u>
<b>Total</b>	<b><u>1 571 702</u></b>

### B. ASSET VALUATION BASIS – DCF METHOD OF VALUATION

1. For the DCF 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. The book value and the current market value are only suitable for determining the financial position of a pension fund in exceptional circumstances.
2. We valued the assets by calculating the discounted value of the expected cash flow based on the valuation rate of interest of 10% p.a.
3. We assumed that the dividend yield on the Fund's equities was similar to that on the ALSI (2,6%). Our valuation rate of interest is 10% p.a. and we assumed future dividend growth to be in the order of inflation plus 1,5% in the long term. Equities were thus valued at 104% of market value.

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

Property was valued at 90% of market value.

Cash and net current assets are taken at face value.

4. It was assumed that the mix of investments in other assets was similar to the mix in the balance of the Fund.
5. The actuarial value of the assets amounted to R1 608,9 million at the valuation date, which was equal to 102,4% of market value. Given the small difference we have taken

the value of the assets used for the DCF method of valuation at the market value in the Fund.

## APPENDIX 6

### VALUATION OF LIABILITIES

#### A. TOTAL 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 1 481 074, as follows:

	DCF Method		DMA Method
	31 March 2006	31 March 2008	31 March 2008
	R'000	R'000	R'000
Members	696 841	930 426	1 233 524
Pensioners	133 082	196 501	232 986
Deferred pensioners	3 649	4 374	5 675
Spouses	198 506	277 076	349 682
Suspended/Pending Reserve	23 195	32 391	39 258
Increase in pensions*	9 462	25 501	31 395
Administration costs	<u>13 005</u>	<u>14 805</u>	<u>18 225</u>
<b>Past-service liabilities</b>	<u><b>1 077 740</b></u>	<u><b>1 481 074</b></u>	<u><b>1 910 745</b></u>

- \* From 1 July of year of valuation, pro-rata for pensions in payment for less than a year at the valuation date

##### 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	21,32
Administration expenses	<u>1,25</u>
	<u>22,57</u>

**B. DETAILS OF LIABILITIES****1. Past service – DCF Method**

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

	<b>DCF Method</b>	<b>DMA Method</b>
	<b>Total</b>	<b>Total</b>
	<b>R'000</b>	<b>R'000</b>
<b>Active members</b>		
Benefits on :		
retirement	305 789	425 032
death	331 630	458 750
ill-health	192 862	258 996
withdrawal	25 940	27 214
Minimum benefits	29 241	6 298
Pending pensioners	<u>44 964</u>	<u>57 234</u>
Subtotal	<u>930 426</u>	<u>1 233 524</u>
<b>Pensioners</b>		
Former members	196 501	232 986
Spouses	277 076	349 682
Pension payments ceased	32 391	39 258
Deferred pensioners	4 374	5 675
Pension increase	25 501	31 395
Administration fee	<u>14 805</u>	<u>18 225</u>
Subtotal	<u>550 648</u>	<u>677 221</u>
<b>Total liabilities</b>	<b><u>1 481 074</u></b>	<b><u>1 910 745</u></b>

**2. Future service**

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:

	<b>% of pensionable salaries</b>
Retirement	7,61
Disability	3,75
Death in service	9,19
Withdrawal	0,77
Administration costs	<u>1,25</u>
Total	22,57
Current contributions by members	(7,00)
<b>Required employer contribution rate</b>	<b><u>15,57</u></b>

## APPENDIX 6A

## LIABILITIES FOR MEMBERS FOR SERVICE TO VALUATION DATE

Age last birthday	Number	Pensionable salaries R	Liability
<b>Females</b>			
<=22	-	-	-
23 – 27	15	969 146	227 510
28 - 32	41	3 173 178	1 547 845
33 – 37	64	4 629 627	3 310 573
38 – 42	97	5 449 612	5 610 438
43 – 47	137	7 451 569	11 207 909
48 – 52	106	5 525 540	12 170 903
53 – 57	94	5 154 507	13 665 265
58 – 62	71	3 815 992	13 369 567
63+	15	890 983	3 200 454
<b>Total</b>	<b>640</b>	<b>37 060 154</b>	<b>64 310 464</b>
<b>Males</b>			
<=22	1	38 462	11 022
23 – 27	14	813 111	420 113
28 - 32	122	8 377 320	8 461 658
33 - 37	386	25 997 014	42 134 714
38 – 42	612	39 600 838	87 418 342
43 – 47	825	54 000 366	151 135 227
48 – 52	750	48 160 016	155 345 744
53 – 57	668	42 736 926	162 101 875
58 – 62	510	32 030 550	143 577 595
63+	131	8 069 135	41 305 424
<b>Total</b>	<b>4 019</b>	<b>259 823 738</b>	<b>791 911 714</b>
<b>Grand Total</b>	<b>4 659</b>	<b>296 883 892</b>	<b>856 222 178</b>

\* Excludes liabilities for Prescribed Minimum Benefits

## LIABILITIES FOR PENSIONERS

Age nearest birthday	Number of Pensioners	Annual Pension R	Value of Benefits R
<b>Females</b>			
< - 32	-	-	-
33 – 37	-	-	-
38 – 42	-	-	-
43 – 47	1	15 110	225 539
48 – 52	2	29 209	443 534
53 – 57	8	112 621	1 487 332
58 – 62	13	213 132	2 562 926
63+	176	2 016 620	17 569 522
<b>Total</b>	<b>200</b>	<b>2 386 692</b>	<b>22 288 854</b>
<b>Males</b>			
< 32	-	-	-
33 – 37	2	28 575	457 783
38 – 42	10	142 201	2 174 545
43 – 47	17	314 647	4 538 707
48 – 52	19	301 846	3 999 044
53 – 57	56	1 294 227	16 222 654
58 – 62	120	2 778 509	31 212 618
63+	858	13 195 353	115 606 860
<b>Total</b>	<b>1 082</b>	<b>18 055 358</b>	<b>174 212 212</b>
<b>Grand total</b>	<b>1 282</b>	<b>20 442 050</b>	<b>196 501 065</b>

The above summary excludes cases where pension payments have been ceased pending receipt of evidence of survival.



## LIABILITIES FOR DEFERRED PENSIONERS

Age nearest birthday	Number of Pensioners	Annual Pension R	Value of Benefits R
<b>Females</b>			
< 32	-	-	-
33 - 37	2	20 489	32 522
38 - 42	1	14 531	25 792
43 - 47	-	-	-
48 - 52	3	23 110	92 560
53 - 57	1	3 483	17 649
58 - 62	3	28 878	181 459
63+	2	15 550	106 863
<b>Total</b>	<b>12</b>	<b>106 041</b>	<b>456 844</b>
<b>Males</b>			
< 32	1	8 809	9 130
33 - 37	-	-	-
38 - 42	1	17 981	36 109
43 - 47	-	-	-
48 - 52	2	15 782	47 685
53 - 57	13	146 222	613 519
58 - 62	29	290 813	1 769 897
63+	11	163 305	1 440 601
<b>Total</b>	<b>57</b>	<b>642 912</b>	<b>3 916 942</b>
<b>Grand total</b>	<b>69</b>	<b>748 953</b>	<b>4 373 786</b>

The above summary excludes cases where the pension has been ceased pending receipt of evidence of survival.

## APPENDIX 6D

## LIABILITIES FOR SPOUSES

Age nearest birthday	Number of Pensioners	Annual Pension R	Value of Benefits R
<b>Females</b>			
< 22	-	-	-
23 – 27	8	109 219	1 860 616
28 - 32	40	629 553	10 473 095
33 – 37	104	1 562 709	25 120 822
38 – 42	212	2 828 310	43 688 148
43 – 47	316	3 493 183	50 857 626
48 - 52	323	3 234 978	43 784 716
53 - 57	362	3 159 324	38 996 109
58 - 62	402	2 748 186	30 219 153
63+	651	3 648 797	29 719 673
<b>Total</b>	<b>2 418</b>	<b>21 414 259</b>	<b>274 719 958</b>
<b>Males</b>			
< 37	-	-	-
38 - 42	1	8 048	111 610
43 - 47	3	58 540	790 996
48 - 52	2	20 086	241 809
53 - 57	5	50 446	525 344
58 - 62	4	35 869	343 143
63+	7	56 008	343 678
<b>Total</b>	<b>22</b>	<b>228 997</b>	<b>2 356 580</b>
<b>Grand total</b>	<b>2 440</b>	<b>21 643 256</b>	<b>277 076 538</b>

The above summary excludes pending spouse pensioners and cases where the pension has been ceased pending receipt of evidence of survival.

**LIMITATIONS TO USE OF REPORT**

This report has been prepared for the Committee of Management of the Natal Joint Municipal Pension Fund (Retirement). 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.

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