

**A Report on the  
Actuarial Valuation  
of the  
Saskatchewan Municipal Employees' Pension Plan  
as at December 31, 2004**

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April 12, 2005

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## **Section 1 Executive Summary**

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### **INTRODUCTION**

This report has been prepared at the request of the Saskatchewan Municipal Employees' Pension Commission to determine the actuarial present value of the plan's obligations as at September 30, 2004 on a going-concern basis, to determine the cost of future benefit accruals and to extrapolate the actuarial present value of the plan's obligations to December 31, 2004 and hence complete a valuation at that date. The previous valuation was effective December 31, 2001.

### **RESULTS**

The results of this valuation and the previous valuation are as follows:

	<u>(thousands of dollars)</u>	
	<u>2004</u>	<u>2001</u>
Assets At Market Value	\$1,110,386	\$921,657
Investment Reserve	<u>(80,925)</u>	<u>(77,972)</u>
For Valuation Purposes	1,029,461	843,685
Liabilities	963,037	778,144
Reserves	<u>57,130</u>	<u>65,278</u>
Total Liabilities	\$1,020,167	\$843,422
Surplus	\$ 9,294	\$263

### **FUTURE FUNDING REQUIREMENTS**

The current levels of contribution of 5.4% of salary for regular staff and 7.3% for emergency staff, matched by the employers, are somewhat less than the cost to provide the benefits particularly in the 15 months following the valuation date when a temporary higher accrual rate is in effect. We have allowed for this in our valuation by establishing a reserve to cover the excess cost of the benefit accruals for the next 3 years.

**PLAN EXPERIENCE**

Over the past 3 years, the plan experience has been fairly neutral. The investment return determined using “actuarial” value of assets in the 3 years average was about 8% rather than the 6.5% assumed. Retirement experience has been a little lighter than anticipated in the previous valuation but the early retirement window remains open until December 31, 2005 and, in this valuation, we have assumed that all those who, in 2005, are entitled to an unreduced pension will retire in that year – that is about 1,200 members.

**ASSUMPTIONS**

The only material change in assumptions was the strengthening of the mortality assumption. We anticipate making changes to the economic assumptions at the next valuation.

**NEXT VALUATION**

In view of the closure of the early retirement window on December 31, 2005, we recommend that the next valuation should be effective as at that date.

We look forward to discussing the contents of this report with you at your convenience.

Respectfully submitted,

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John Corp, FIA, FCIA

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K. Dawn Power, FSA, FCIA

April 12, 2005

## **Section 2 Valuation of Assets**

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### **1. Assets at December 31, 2004**

At December 31, 2004, the assets of the plan were as follows:

	(thousands of dollars)
	December 31
Investments	
Short Term	\$17,964
Bonds	339,980
Equities	335,959
Pooled Funds	395,378
Mortgages	628
Real Estate	<u>50,342</u>
	\$1,140,251
Cash	552
Accrued Income	3,294
Net Receivables	3,217
Assets attributable to annuity fund <sup>1</sup>	<u>(36,928)</u>
	\$1,110,386

<sup>1</sup> The fund assets include those which support self-insured annuities provided under the former municipal plan. The Canada Revenue Agency required that, with effect from January 1, 2002, these assets should be accounted for separately with annuities being charged to that account. In the period up to December 31, 2001, such annuities were paid from the fund. The amount attributable to the annuity fund at December 31, 2001 was determined by a report prepared by us and dated November 26, 2002, and this has been updated to the valuation date by adding interest and the purchase price of new annuities and debiting annuities paid and expenses.

## 2. Financial Statements

The following summarizes the audited financial statements for 2002 and 2003 and the unaudited statements prepared by the Public Employees Benefits Agency for 2004 (to September 30, 2004 and to December 31, 2004), with modifications for transfers to the annuity fund as described.

	<u>2002</u>	<u>2003</u>	<u>2004</u>	
			First 9 months	Last 3 months
At start	\$921,656	\$887,549	\$1,009,411	\$1,049,394
Employee contributions	14,278	14,917	11,392	4,553
Employer contributions	14,223	14,917	11,393	4,518
Transfers-in	752	650	478	8
Transfer to annuity fund <sup>1</sup>				(803)
Investment Income	36,142	40,921	22,565	23,623
Change in market value	(55,478)	89,350	29,107	39,135
Pensions Paid	(22,592)	(24,698)	(19,861)	(6,828)
Transfers, refunds etc.	(16,880)	(9,566)	(11,923)	(2,057)
Administration Cost	(2,549)	(2,396)	(1,344)	(638)
Investment & Custodial Fees	<u>(2,003)</u>	<u>(2,233)</u>	<u>(1,824)</u>	<u>(519)</u>
At end	\$887,549	\$1,009,411	\$1,049,394	\$1,110,386

### Notes:

1. In preparing the annuity fund valuation, we discovered that no transfers had been made to the annuity fund in respect of a number of annuities which had commenced since the previous valuation. We calculated these annuity considerations plus interest at the rate earned by the fund to be \$803,000 at October 1, 2004 and we assumed that that amount was transferred to the annuity fund on that date.

### 3. Actuarial value of assets at December 31, 2004

At the previous valuation, we used an approach which attempted to smooth out the fluctuations in the financial markets. We also established a special reserve to reflect the market fall in 2002. We have used the same smoothing approach for this valuation, but there is no special reserve.

The smoothing approach amortizes the “change in market value” of the assets in a year (i.e., the degree to which the value of the assets has changed in the year which is not accounted for by other factors such as contributions, investment income, benefit payments, expenses, etc.) over a period of 5 years.

Thus in 2004 the “change in market value” for the total fund was \$70,602,000 (for this exercise, we add back in the assets attributable to the annuities). We amortize this over 5 years starting in 2004 i.e. we recognize one-fifth (\$14,120,000) in 2004, which means that at the end of the year there is still \$56,482,000 unrecognized.

The actuarial value expressed as a percentage of market value for the total fund is therefore determined as follows

		<b>(thousands of dollars)</b>
Market value of total fund (inc. \$36,928,000 annuity fund)		\$1,147,314
2004 gains	\$70,602,000 Unrecognized (80%)	(56,482)
2003 gains	\$92,807,000 Unrecognized (60%)	(55,684)
2002 losses	\$57,902,000 Unrecognized (40%)	23,161
2001 losses	\$26,945,000 Unrecognized (20%)	<u>5,389</u>
Actuarial value of total fund (incl. annuity fund)		\$1,063,698
or		92.712% of the fund

Applying this percentage to the part of the fund other than that supporting the annuities, we have

Market value	\$1,110,386,000
Investment Reserve (7.288%)	<u>(80,925,000)</u>
Actuarial Value (92.712%)	\$1,029,461,000

#### 4. Rates of Return

The rates of return on the fund over the past 3 years, net of investment expenses, and assuming that all cash flows occur on July 1 are as follows:

	Market Value	Actuarial Value
2002	-2.33%	10.74%
2003	14.48%	6.45%
2004	11.16%	6.88 %
Average	7.47%	8.02%



## **Section 3 Actuarial Assumptions, Actuarial Methods and Reserves**

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### **1. Economic Assumptions**

The economic assumptions used in the valuation are as follows. They are the same as used in the previous valuation, except where noted:

- a) *Inflation = 3% per annum.*
- b) *Investment Return = 6.5%*
- c) *Rate of salary increase*

We have assumed that there will be a general salary increase of 4% per annum – equivalent to inflation plus 1%.

We have also allowed for promotional and merit increases as follows:

<u>Years of Service</u>	<u>Regular Employees</u>	<u>Emergency Employees</u>
1-5	2.0% per year	3.0% per year
6-10	1.5% per year	2.0% per year
11-15	1.0% per year	1.0% per year
16-20	0.5% per year	0.5% per year

- d) *Increase in CPP earnings ceiling and maximum pension.*

We assumed that the CPP earnings ceiling would increase from \$41,100 in 2005 by 4% per year (being inflation plus 1%). We have also assumed that the maximum pension per year of service permitted under the Income Tax Act would increase by 4% per year from \$2,000 starting in 2005. At the previous valuation, we assumed that the maximum pension in 2004 would be \$1,722.22 and it would increase by 4% per year thereafter which was in accordance with the Income Tax Act at that time.

e) *Administration Expenses*

We have established a target reserve for future expenses in 2 parts

- (i) 3.0% of accrued liabilities, plus
- (ii) \$1.15 million per year for the next 3 years

with a minimum reserve of the present value of expected expenses in the next 3 years.

The total administration expenses in the 3 year period were \$6.9 million or an average of \$2.3 million per year – about 6.0% of benefits paid. We have allocated the expenses as 50% in respect of current service and 50% in respect of past service so that our target expense reserve is 3.0% of accrued liabilities (excluding reserves) at December 31, 2004 or \$28.90 million plus \$3.14 million being the present value of \$1.15 million for the next three years for a total of \$32.04 million. The minimum reserve is the present value of the full expenses for the period to the next valuation date, or \$6.28 million. The reserve actually used in the valuation is the target reserve. At the previous valuation, the expense reserve was 3% of accrued liabilities plus the present value of \$1.1 million for 3 years, for a total of \$26.333 million.

## 2. **Demographic assumptions**

These are the same as used at the previous valuation, except where noted.

a) *Retirement*

The early retirement window continues until December 31, 2005. We believe that it is appropriate to recognize that the window is still open. Our special assumption for the window will be that everyone who becomes entitled to an unreduced pension (but not those entitled to a reduced pension) will retire at their last possible opportunity to do so ie, December 31, 2005. (In fact, our valuation software assumes that members retire in the middle of the year ie June 30, 2005.) For those regular staff who become entitled to an unreduced pension in any event after that date, we have assumed that 50% will retire on the date they become entitled to an unreduced pension and 50% will continue until 65. For the emergency staff, we have assumed that 100% will retire when they are first entitled to an unreduced pension.

a) *Terminations*

For the regular staff we have assumed terminations in accordance with a table of estimates of which are shown below.

	<u>This Valuation</u>
20	20.5%
25	15.5%
30	10.5%
35	6.5%
40	4.8%
45	4.3%
50	3.2%
55	1.2%

For the emergency staff, we have used an assumption of 75% of the termination rates for the regular staff to recognize their generally lower turnover rates.

c) *Mortality*

We have used the UP94@15 Mortality Table. At the previous valuation we used the 1994 Group Annuitant Mortality Table.

d) *Proportion married and age of spouse*

We have assumed that 90% of male members and 70% of female members will be married at retirement and the male spouse will be 4 years older

e) *Disability*

In this valuation, we have valued the disabled members separately – assumed that they will all stay disabled to their unreduced pension date and then retire at that date and that their imputed salary will increase at 4% per year. We have also provided them with full service credit from July 1, 1998, or the date of disability if later, to September 30, 2004.

We have not allowed for future disabilities.

### 3. Actuarial Method

For this valuation, we have used the unit credit method to determine the plan's financial position. Under this method, the actuarial value of the plan assets is compared with the actuarial present value of the pensions accrued in respect of service to the valuation date. If experience is as assumed, this method accumulates assets systematically to provide security for the benefits provided under the terms of the plan in respect of service that has already been rendered, without further recourse to the assets of the employers.

Under this method we take each individual, project his or her salary to retirement, determine the value of the pension and bridge benefit in respect of service to the valuation date and discount this back to the valuation date. We discount for interest but also for prior termination and death and the value of the termination and death benefits are determined in a manner consistent with the retirement benefit.

Also under this method, the current service cost is the value of the benefits which will be earned in respect of the year of service following the valuation date. This cost increases as the average age of the membership increases but as long as the average age remains stable, the cost will remain stable.

The value of the member's accrued benefits are compared with his or her contributions with interest. If the contributions with interest are greater than 50% of the value of the benefit, the liability is increased by the difference.

In this plan with its matching contribution structure, it is necessary to establish a reserve to cover any shortfall between the current service cost and the matching contributions, until the date of the next valuation.

This was the method used at the previous valuation.

### 4. Reserves

We have established a number of liability-related reserves as follows:

- a) *Excess accruals for next 3 years.*

As we indicated when discussing the actuarial method, our normal practice in a plan with fixed contributions would be to establish a reserve to cover any negative difference between the current service cost and the fixed contributions over the period to the next full valuation date – a 3-year period. At the previous valuation, the reserve was in respect of 4 years' accruals reflecting that the higher benefit accrual period ended 4 years from that valuation date.

b) *Future Accruals for disabled members.*

We have established a reserve to cover the future accruals of all the currently disabled members.

At the previous valuation, we established a reserve in respect of additional eligibility service which might be determined during a review of the data by PEBA which was being carried out at that time. That review has been completed and modifications made to the data so there is no further need for such a reserve. We also provided for a reserve to cover possible increases in pensions earned after 1998. We have not included such a reserve at this valuation, since we feel that no such increases should be provided pending the results of next year's valuation.

## **Section 4 Valuation Results**

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### **1. Actuarial present value of plan obligations on going-concern basis at September 30, 2004**

On the basis of the summary of plan provisions listed in Appendix A, the actuarial assumptions and methods for the going-concern valuation described in Section 3 and the membership information summarized in Appendix B the actuarial present value of plan obligations at September 30, 2004 is as follows:

	<u>(thousands of dollars)</u>
Liabilities	
Actives - Regular	\$ 512,632
- Emergency	40,561
Disabled	4,590
Pensioners	328,287
Deferreds	42,718
Pending	14,583
Former Plan Accumulations	33
Voluntary Contributions	<u>89</u>
	\$943,493
Liability Reserves	
Excess Accrual in next 39 months	
- Regular	25,824
- Emergency	1,396
Future LTD accruals	<u>1,421</u>
	\$28,641

## 2. Extrapolation of going-concern obligations to December 31, 2004

The accrual in the final quarter of 2004 is made up as follows:

	<u>(thousands of dollars)</u>
Employee Contribution	\$ 4,553
Employer Contributions	4,518
Transfers	8
Shortfall in Current Service Cost (87.5% of EE contributions)	<u>3,984</u>
	<u>\$13,063</u>

Thus the extrapolation of the obligations from September 30 to December 31 is as follows:

Liabilities at September 30, 2004	\$943,493
Accrual in Final Quarter	13,063
Benefits Paid in Final Quarter	(8,885)
Interest in Final Quarter at 6.5%	<u>15,366</u>
Liabilities at December 31, 2004	<u>\$963,037</u>

The amount paid from the liability reserves in the final quarter is the shortfall in the current service cost.

Liability Reserves at September 30, 2004	28,641
Amounts paid from reserve in final quarter	(3,984)
Interest in Final Quarter at 6.5%	<u>433</u>
Liability Reserves at December 31, 2004	<u>\$25,090</u>

## 3. Going-concern valuation results at December 31, 2004

Based on the asset information from Section 2, and the extrapolation from above, the results of the valuation at December 31, 2004 are as follows, with those for December 31, 2001 for comparison

	<u>(thousands of dollars)</u>	
	<u>2004</u>	<u>2001</u>
Assets at market value	\$1,110,386	\$921,657
Investment Reserve	<u>(80,925)</u>	<u>(77,972)</u>
Net assets	\$1,029,461	\$843,685
Liabilities	963,037	778,144
Liability Reserves	25,090	38,945
Expense Reserves	<u>32,040</u>	<u>26,333</u>
	\$1,020,167	\$843,422
Surplus	\$9,294	\$263

#### 4. Solvency Liabilities at September 30, 2004

A solvency valuation assumes that the plan is wound-up on the valuation date and benefits are settled through the purchase of annuities and the transfer-out of commuted values. In this case, our valuation at September 30, 2004 uses assumptions appropriate for a solvency valuation at December 31, 2004 and includes estimated pension accruals for the period October 1, 2004 to December 31, 2004.

For the solvency valuation, we do not employ a salary projection for the liabilities and no reserves are required, other than for the expenses required for plan wind-up.

We assume that all members not eligible to retire immediately would transfer the lump sum commuted value out of the Plan and that annuities would be purchased for all pensioners and all other members eligible to retire immediately. The lump sum commuted values would be calculated based on the Recommendations for the Computation of Transfer Values from Registered Pension Plans of the Canadian Institute of Actuaries (CIA) as they apply to transfers occurring in December 2004 (specifically using a discount rate of 5.5% for the first 15 years and 6% thereafter). The purchase price for annuities would be approximated by assuming mortality in accordance with the UP94@2015 mortality table and a discount rate of 5.25%. This is the basis recommended by the Canadian Institute of Actuaries for the valuation of immediate pensions in solvency valuations at December 31, 2004. The results of the solvency valuation are:

Regular Staff	\$528,959
Emergency Staff	46,828
Disabled Members	5,447
Pensioners	370,897
Deferred Pensioners	47,453
Pending	16,623
Former Plan Accumulations	33
Voluntary Contributions	89
	<u>\$1,016,329</u>

These liabilities split as follows

Immediate pensions (valued at 5.25%)	\$743,087	(73%)
Deferred pensions (valued at 5.50%/6.00%)	<u>273,242</u>	(27%)
	\$1,016,329	

Thus the weighted discount rate for the fourth quarter of 2004 is 5.3175%.



**5. Extrapolation of solvency liabilities to December 31, 2004**

Solvency liabilities at September 30, 2004	\$1,016,329
Benefits paid in final quarter	(8,885)
Interest at 5.3175%	<u>13,452</u>
Solvency Liabilities at December 31, 2004	\$1,020,896

**6. Solvency Valuation Results at December 31, 2004**

Assets at market value	\$1,110,386
Plan wind-up expenses	<u>(4,500)</u>
Net assets	1,105,886
Extrapolated Solvency Liabilities	<u>1,020,896</u>
Excess of solvency assets over solvency liabilities	\$84,990

**7. Future Funding Requirements**

Regular staff will contribute 5.4% and emergency staff 7.3% of earnings with employers matching these contributions.

As indicated, we established a reserve at September 30, 2004 of \$25,824,000 for the regular staff and \$1,396,000 for the emergency staff to cover the excess accruals for the next 3 years, 3 months. (i.e., the excess of the cost of benefits earned during the period over the total of the employee matching employer contributions). The cost of the accruals during this period is increased by the higher accrual rate and the early-retirement window which ends in 2005.

We have also determined the current service cost for the plan assuming that there is no early retirement window and that the accrual rate has reverted to its post-2005 level. This shows that there would still be some level of excess accrual, as follows:

	<u>% of Salary</u>		
	<b>Current Service Cost</b>	<b>Total Matching Contributions</b>	<b>Excess</b>
Regular	13.6	10.8	2.8
Emergency	18.7	14.6	4.1

If all those who are assumed to retire in 2005 actually do so, the average age of the remaining members will be lower, and this will reduce the current service cost. On the other hand, if not all of these members retire, the accrued liabilities will be less than they otherwise would. In recent years, with longer life expectancy and lower interest rates, pensions have become more expensive and the current contribution rates are lower than

for other similar plans so that we think that the most logical solution for this shortfall is an increase in contribution rates. Other solutions are a reduction in benefits or the continuation of the current situation where these future shortfalls are covered by past service surplus.

## 8. Reconciliation of Results

The reconciliation is as follows:

	\$000's
Surplus at the previous valuation	\$263
Interest on surplus at 6.50% for 3 years	55
Fund earning more than 6.5% <sup>1</sup>	43,534
Demographic experience <sup>2</sup>	1,127
Salary Gain <sup>3</sup>	5,077
Revised eligibility service <sup>4</sup>	(1,649)
Revised credited service <sup>5</sup>	(5,927)
Lower accruals than expected in 2002 through 2004 <sup>6</sup>	3,825
Pensioner mortality loss <sup>7</sup>	(1,387)
New entrants <sup>8</sup>	(2,096)
Release of reserve for pensioner increase <sup>9</sup>	785
Increase in expense allowance <sup>10</sup>	(7,891)
Establishment of accrual reserve for 2006 and 2007 <sup>11</sup>	(12,007)
Change in mortality assumption <sup>12</sup>	<u>(14,415)</u>
Surplus at this valuation	\$9,294

Notes:

1. In the 3 years since the previous valuation, the fund has earned, on the basis of the "actuarial" asset values used in the valuation, an average rate of return net of investment expenses of 8.02% compared with the 6.5% assumed in this valuation. This will have produced an investment gain of \$43,534,000.
2. We reran the previous valuation for the active members assuming that we had correctly forecast all the decrements. For those active members at the last valuation who were still active at December 31, 2004, we assumed that they would retire under the early retirement window in accordance with our current assumption i.e. all those who are entitled to an unreduced pension will retire in 2005. On that basis, we determined that the liabilities and reserve for four year accruals at the previous valuation were \$933,000 less than those reported in the valuation. With interest at 6.5% for 3 years this amounts to \$1,127,000 at December 31, 2004.
3. In the 2001 valuation, the annualized salaries projected for 2004 were more than those actually paid. Had the correct 2004 salaries been used in the 2001 valuation,

- the liabilities and reserve for accruals would have been \$4,203,000 less which with interest amounts to \$5,077,000 at December 31, 2004. However some or all of this gain is caused by the change in the treatment of 10 month employees as further discussed in 5 below.
4. Eligibility service was reviewed and modified for a number of members which, had the revised service been included in the previous valuation, would have increased the liabilities and reserve for accruals by \$3,365,000. We had established a reserve for this additional eligibility service of \$2 million so that the net difference at December 31, 2001 would be \$1,365,000 and, with interest, this amounts to \$1,649,000 at December 31, 2004.
  5. Since the previous valuation, the credited service for the 10 month employees has been increased by 20% i.e. they receive 12 months of service rather than 10 months as before. At the same time, their reported salary is what they actually receive – it has not been annualized, as previously. The effect of the additional credited service on the 2001 valuation would have been to increase the liabilities and reserve for accruals by \$4,906,000 which with interest amounts to \$5,927,000 at December 31, 2004, but this is offset to some extent by the salary gain described in 3 above.
  6. At the previous valuation, we made assumptions about the level of accruals during the next 4 years and, for the members common to both valuations, these have been too high. With interest, the gain amounts to \$3,825,000 at December 31, 2004.
  7. Fewer pensioners died in the period than projected and this has led to a loss of \$1,387,000 at December 31, 2004.
  8. New entrants in the period who are still active at the valuation date accrued greater benefits than the accumulated matching contributions. We estimate the shortfall to be \$2,096,000 at December 31, 2004.
  9. At the previous valuation, we set aside a reserve of \$650,000 to cover increases for the post-1998 pensions. This was not used and the release of this amount, with interest, amounts to \$785,000.
  10. At the previous valuation, we established a reserve for expenses of \$26.333 million. If we add interest to this at 6.5% and debit it by the expenses actually paid, the expected reserve at December 31, 2004 is \$24.149 million. But our reserve is actually \$32.040 million – an increase of \$7.891 million.

11. In the previous valuation, we provided for the shortfall in the contribution rate for the years 2001 to 2005. In the valuation, we have added accruals for 2006 and 2007 in the amount of \$12.007 million.
12. The effect of the change in the mortality assumption is to increase the liabilities and the reserve for the contribution shortfall by \$14.415 million.

## **Appendix A      Summary of Principal Plan Provisions**

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The following is a brief summary of the provisions of the plan which are of importance in determining the actuarial liabilities. This summary includes all plan amendments up to December 31, 2004.

### **Eligibility**

Permanent employees, who are employees employed on an ongoing basis (full-time, part-time and seasonal) and who are expected to work 700 hours or more in a year, join the plan on the date they become an employee.

Non-permanent employees may join the plan on the date of hire and must join the plan if the employee works at least 700 hours in two consecutive years. Once an employee has joined the plan, he/she remains a member even though the hours of work reduce to less than 700 hours in a year.

Plan members who move from one participating employer to another, must immediately participate with the second employer regardless of the terms of employment with the second employer.

### **Members' Contributions**

All active members who are not emergency personnel are required to contribute an amount equal to 5.4% of their earnings. Emergency personnel contribute 7.3% of their earnings. Earnings include regular remuneration and commissions, but excludes overtime pay and bonuses.

The interest rate credited on members' contributions is the net fund rate of return smoothed over a period of four years.

### **Employers' Contributions**

The plan provides that employers are obligated to contribute an amount equal to the required employee contributions.

### **Normal Retirement Date**

The normal retirement date for members other than emergency personnel is the first day of the month immediately following the attainment of age 65. The normal retirement date of emergency personnel is the first day of the month immediately following the attainment of age 60.

## **Early Retirement Date**

### *Non-emergency Members*

Members who are not emergency personnel can retire any time after satisfying the rule of 80 (age plus years of continuous service = 80) with an unreduced pension. They can also retire having attained age 55 with a minimum of 15 years of continuous service but in that event, the pension is reduced by 3% for each year prior to the date when the member would satisfy the rule of 80 assuming service had continued.

For the period January 1, 2001 to December 31, 2005, members who are not emergency personnel can retire on satisfying any of the age of 60, the rule of 80 or 30 years of continuous service with an unreduced pension. They can also retire on satisfying the age of 55, the rule of 75 or 25 years of continuous service but, in that event, the pension is reduced by 3% for each year prior to satisfying one of the age of 60, the rule of 80 or 30 years of continuous service, assuming that service had continued.

### *Emergency Members*

Emergency personnel can retire at any time after satisfying any of the age of 55, the rule of 75 or 25 years of continuous service with an unreduced pension. They can also retire on satisfying the rule of 70 but in that event, the pension in respect of service after 1991 is reduced by 3% for each year prior to satisfying the rule of 75 assuming that service had continued.

During the period January 1, 2001 to December 31, 2005, emergency personnel can retire after satisfying the age of 50, the rule of 70 or 20 years of service but in that event, the pension in respect of service after 1991 is reduced by 3% for each year prior to satisfying any of the age of 55, the rule of 75 or 25 years of service assuming the service had continued.

## **Retirement Income**

Upon retirement, a member is entitled to a retirement benefit based on the member's average highest salary and contributory service, where the average highest salary is the total salary of the member during the three years of highest salary divided by three, as follows:

1. For benefits payable before age 65:

All members are entitled to a pension of 2% of the average highest salary multiplied by the number of years of contributory service.

2. For benefits payable on and after age 65:
- a)* members who are not emergency personnel with a date of entry on or after January 1, 1993:
- are entitled to a pension of 1.5% of the average highest salary multiplied by the number of years of contributory service, excluding the years 2001 to 2005; plus
  - a pension of 1.8% of the average highest salary multiplied by the number of years of contributory service between January 1, 2001 and December 31, 2005.
- b)* emergency personnel with a date of entry on or after January 1, 1993:
- are entitled to a pension of 1.7% of the average highest salary multiplied by the number of years of contributory service excluding the years 2001 to 2005; plus
  - a pension of 2% of the average highest salary multiplied by the number of years of contributory service between January 1, 2001 and December 31, 2005.
- c)* members who are not emergency personnel, with a date of entry prior to January 1, 1993:
- with respect to service prior to January 1, 1990 and service between January 1, 2001 and December 31, 2005, are entitled to a pension for each year of contributory service equal to the greater of:
    - (a) 1.3% times the average highest salary not in excess of the three year average YMPE plus 2% times the average highest salary in excess of the three year average YMPE, and
    - (b) 1.8% times the average highest salary.
  - with respect to service on or after January 1, 1990, but excluding years 2001 to 2005, are entitled to a pension for each year of contributory service equal to the greater of:
    - (a) 1.3% times the average highest salary not in excess of the three year average YMPE plus 2% times the average highest salary in excess of the three year average YMPE, and
    - (b) 1.5% times the average highest salary.

- d) emergency personnel with a date of entry prior to January 1, 1993:
- with respect to service prior to January 1, 1990 and service between January 1, 2001 and December 31, 2005 are entitled to a pension for each year of contributory service equal to 2% times the average highest salary:
  - with respect to service on or after January 1, 1990, but excluding years 2001 to 2005, are entitled to a pension for each year of contributory service equal to the greater of:
    - (a) 1.3% times the average highest salary not in excess of the three year average YMPE plus 2% times the average highest salary in excess of the three year average YMPE, and
    - (b) 1.7% times the average highest salary.

#### **Death Benefits Before Retirement**

Upon the death of a member prior to retirement, an amount equal to the sum of the member's additional contribution account, the member's annuity and annuity surplus account, the employer additional contribution account and the employer annuity account, plus the commuted value of the defined benefit pension is paid to the member's spouse, beneficiary or estate.

#### **Death Benefits After Retirement**

If a retired member who has a spouse at retirement dies, 100% of the pension payable to the member is guaranteed to be paid for five years from the retired member's date of retirement. After the guaranteed payments are made, 60% of the pension to which the retired member was entitled shall be paid to the surviving spouse for life. In the event of the death of both the retired member and the retired member's spouse, the 60% allowance will be payable to the designated dependents (up to age 18).

If the member does not have a spouse at retirement, a single life annuity with a guarantee period of 15 years is payable.

Optional forms of pension are provided on an actuarial equivalent basis.



**Termination Benefits**

An employee who has been a member of the plan or employed by an employer participating in the plan for a continuous period of at least 2 years, on termination of employment prior to retirement, would receive an immediate or deferred pension. An employee may also receive a lump sum that does not exceed one half of the member's accumulated contributions with interest as at December 31, 1993.

Upon termination, the pension benefit may be commuted.

**Indexation Benefits**

For pensions in respect of service accrued before 1999, the plan has automatic future indexation equivalent to the lesser of 2% per year or the increase in the Consumer Price Index with the excess of 2% over the increases in the CPI carried forward on a cumulative basis. However, this indexing is only paid to the extent that funds permit. Indexing on post-1998 benefits may also be provided if funds permit, but this is a decision of the Commission and does not happen automatically.

**Disability**

A member who is totally and permanently disabled and who has been away from work for a 2 year period may, on application, continue to accrue credited service without employee or employer contribution. In this event, the salary on which the pension is based will be increased from the date of disability based on the increase in the average Canadian salaries and wages, and the member must retire on his or her unreduced retirement date.

## ***Appendix B      Membership Data Summary***

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Membership data were obtained from the Public Employees Benefits Agency, who administer the plan. The data were gathered and compiled as of September 30, 2004. They were reconciled and checked for consistency with the previous valuation data.

The data included pensionable salary and in-year credited service amounts for 2002, 2003 and 2004. We annualized the salary amounts by dividing the pensionable salary by the credited service in the year. If the 2004 salary was zero, we assumed that it should be \$20,000.

**1. Membership Reconciliation**
**A. ACTIVES**

	<u>Normal</u>	<u>LTD</u>	<u>Emergency</u>	<u>Total</u>
At December 31, 2001	10,610	52	214	10,876
Corrections to 2001 data	(2)			(2)
Retired	(407)	(4)	(10)	(421)
Deaths	(25)	(1)		(26)
Termination				
Deferred	(109)	(1)	(1)	(111)
Pending	(715)	(2)	(5)	(722)
Paid Out	(1,064)	(4)	(23)	(1,091)
Class Change				
Normal to LTD	(32)	32		0
Normal to Emergency	(1)		1	0
LTD to Normal	21	(21)		0
Members at September 30, 2004 who were active at December 31, 2001	8,276	51	176	8,503
New Members	3,143	3	46	3,192
Reinstatements				
From Deferred	1	1	0	2
From Pending	153	1	0	154
At September 30, 2004	11,573	56	222	11,851

**B. PENSIONERS**

At December 31, 2001	2,948
Survivors who should have been included in previous valuation	10
Deaths – with survivors	(146)
- with no further payments	(129)
New pensioners	
from normal	407
from LTD	4
from emergency	10
from deferred	86*
from pending	21
from marriage split	1
from new members	2
New survivors	<u>153**</u>
At September 30, 2004	3,367

\*\* A number of pensioners who died had designated more than one survivor.

**C. DEFERREDS**

At December 31, 2001	1,389
Adjustment	<u>5</u>
Revised at December 31, 2001	1,394
Retired	(90)*
Deaths	(8)
Termination – Paid-out	(97)
Transfer to LTD	(1)
Reinstated to normal	(1)
Transfer from normal	109
from LTD	1
from emergency	1
from pending	264
New members since previous valuation	<u>8</u>
At September 30, 2004	1,580

\* 4 of the retirees from deferreds also had active records so that the net new retirees from deferreds shown in the Pensioner reconciliation is 86.

D. **PENDING**

At December 31, 2001	1,202
Retired	(21)
Deaths	(16)
Terminated - Paid-out	(674)
- Deferred	(264)
Transfer to LTD	(1)
Transfer to active	(153)
Transfer from normal	715
from emergency	5
from LTD	2
New members	<u>417</u>
At September 30, 2004	1,212

## 2. Membership Summary - Males (except emergency)

Age	Service							TOTAL	
	0-5	5-10	10-15	15-20	20-25	25-30	30+		
16-24	No.	144	1	0	0	0	0	0	145
	Salary	3,986,361	60,266	0	0	0	0	0	4,046,627
	Average Sal	27,683	60,266	0	0	0	0	0	27,908
25-29	No.	167	26	2	0	0	0	0	195
	Salary	5,096,834	891,610	74,872	0	0	0	0	6,063,315
	Average Sal	30,520	34,293	37,436	0	0	0	0	31,094
30-34	No.	201	66	29	1	1	0	0	298
	Salary	6,516,973	2,302,939	1,179,090	30,056	29,699	0	0	10,058,760
	Average Sal	32,423	34,893	40,658	30,056	29,699	0	0	33,754
35-39	No.	199	88	61	36	5	0	0	389
	Salary	5,894,889	3,159,772	2,427,336	1,510,029	190,105	0	0	13,182,130
	Average Sal	29,623	35,907	39,792	41,945	38,021	0	0	33,887
40-44	No.	288	101	90	100	81	16	0	676
	Salary	8,649,389	3,397,455	3,220,699	4,057,921	3,259,988	655,948	0	23,241,410
	Average Sal	30,033	33,638	35,786	40,579	40,247	40,997	0	34,381
45-49	No.	310	125	117	119	92	71	6	840
	Salary	8,996,738	4,256,088	4,133,424	4,812,141	3,988,424	3,138,833	267,705	29,593,340
	Average Sal	29,022	34,049	35,328	40,438	43,352	44,209	44,618	35,230
50-54	No.	282	121	121	80	81	55	38	778
	Salary	8,631,776	4,037,117	4,291,014	3,217,990	3,238,823	2,396,736	1,980,925	27,794,380
	Average Sal	30,609	33,365	35,463	40,225	39,985	43,577	52,130	35,725
55-59	No.	226	68	83	62	68	56	39	602
	Salary	5,936,049	2,387,193	2,805,111	2,195,301	2,820,896	2,304,732	1,698,222	20,147,520
	Average Sal	26,266	35,106	33,797	35,408	41,484	41,156	43,544	33,468
60-69	No.	200	70	63	50	43	18	23	467
	Salary	4,921,076	2,289,962	1,988,054	1,784,081	1,587,463	860,164	727,491	14,158,280
	Average Sal	24,605	32,714	31,556	35,682	36,918	47,787	31,630	30,318
TOTAL	No.	2,017	666	566	448	371	216	106	4,390
	Salary	58,630,070	22,782,390	20,119,600	17,607,530	15,115,390	9,356,415	4,674,342	148,285,900
	Average Sal	29,068	34,208	35,547	39,303	40,742	43,317	44,098	33,778

## 3. Membership Summary - Females (except emergency)

Age		Service							TOTAL
		0-5	5-10	10-15	15-20	20-25	25-30	30+	
16-24	No.	212	0	0	0	0	0	0	212
	Salary	4,554,676	0	0	0	0	0	0	4,554,676
	Average Sal	21,484	0	0	0	0	0	0	21,484
25-29	No.	409	48	1	0	0	0	0	458
	Salary	9,855,088	1,405,732	33,342	0	0	0	0	11,294,160
	Average Sal	24,096	29,286	33,342	0	0	0	0	24,660
30-34	No.	462	109	14	1	0	0	0	586
	Salary	10,500,920	3,010,476	422,897	32,163	0	0	0	13,966,460
	Average Sal	22,729	27,619	30,207	32,163	0	0	0	23,834
35-39	No.	681	168	73	52	3	0	0	977
	Salary	15,237,920	4,719,233	2,152,232	1,706,915	90,761	0	0	23,907,080
	Average Sal	22,376	28,091	29,483	32,825	30,254	0	0	24,470
40-44	No.	897	285	172	105	52	2	0	1,513
	Salary	19,325,610	7,077,246	4,967,326	3,637,394	2,001,446	80,631	0	37,089,670
	Average Sal	21,545	24,832	28,880	34,642	38,489	40,315	0	24,514
45-49	No.	596	295	223	157	72	38	1	1,382
	Salary	13,090,200	7,470,044	5,971,449	4,902,637	2,582,179	1,344,576	28,041	35,389,110
	Average Sal	21,963	25,322	26,778	31,227	35,864	35,384	28,041	25,607
50-54	No.	407	173	205	183	92	32	11	1,103
	Salary	9,101,262	4,448,949	5,409,970	5,095,946	3,135,538	1,236,584	385,120	28,813,380
	Average Sal	22,362	25,716	26,390	27,847	34,082	38,643	35,011	26,123
55-59	No.	223	81	115	116	81	42	14	672
	Salary	4,873,329	2,171,241	2,856,472	3,249,938	2,315,622	1,233,430	486,073	17,186,100
	Average Sal	21,853	26,805	24,839	28,017	28,588	29,367	34,719	25,575
60-69	No.	89	23	54	50	27	21	16	280
	Salary	1,852,417	533,415	1,335,889	1,298,825	638,080	545,759	450,893	6,655,277
	Average Sal	20,814	23,192	24,739	25,976	23,633	25,989	28,181	23,769
TOTAL	No.	3,976	1,182	857	664	327	135	42	7,183
	Salary	88,391,460	30,836,330	23,149,590	19,923,810	10,763,630	4,440,980	1,350,126	178,855,900
	Average Sal	22,231	26,088	27,012	30,006	32,916	32,896	32,146	24,900

## 4. Membership Summary - Emergency Males

Age	Service								TOTAL
	0-5	5-10	10-15	15-20	20-25	25-30	30+		
16-24	No.	9	0	0	0	0	0	0	9
	Salary	356,588	0	0	0	0	0	0	356,588
	Average Sal	39,621	0	0	0	0	0	0	39,621
25-29	No.	24	5	0	0	0	0	0	29
	Salary	1,000,450	255,070	0	0	0	0	0	1,255,520
	Average Sal	41,685	51,014	0	0	0	0	0	43,294
30-34	No.	12	16	8	1	0	0	0	37
	Salary	545,754	894,710	465,794	60,473	0	0	0	1,966,731
	Average Sal	45,479	55,919	58,224	60,473	0	0	0	53,155
35-39	No.	6	10	10	3	0	0	0	29
	Salary	274,694	541,768	488,503	202,867	0	0	0	1,507,832
	Average Sal	45,782	54,177	48,850	67,622	0	0	0	51,994
40-44	No.	2	4	7	15	6	0	0	34
	Salary	83,182	201,013	375,146	986,495	415,077	0	0	2,060,913
	Average Sal	41,591	50,253	53,592	65,766	69,180	0	0	60,615
45-49	No.	1	1	5	4	11	10	1	33
	Salary	30,938	61,795	267,770	257,888	668,836	670,782	71,127	2,029,136
	Average Sal	30,938	61,795	53,554	64,472	60,803	67,078	71,127	61,489
50-54	No.	2	2	1	0	7	4	0	16
	Salary	86,953	113,078	47,580	0	419,772	278,743	0	946,127
	Average Sal	43,476	56,539	47,580	0	59,967	69,686	0	59,133
55-59	No.	2	1	1	3	3	2	2	14
	Salary	121,083	40,756	83,519	167,818	195,674	115,728	131,802	856,381
	Average Sal	60,541	40,756	83,519	55,939	65,225	57,864	65,901	61,170
60-69	No.	1	0	1	0	0	0	0	2
	Salary	23,574	0	60,864	0	0	0	0	84,438
	Average Sal	23,574	0	60,864	0	0	0	0	42,219
TOTAL	No.	59	39	33	26	27	16	3	203
	Salary	2,523,215	2,108,191	1,789,175	1,675,541	1,699,360	1,065,254	202,930	11,063,670
	Average Sal	42,766	54,056	54,217	64,444	62,939	66,578	67,643	54,501



## 5. Membership Summary – Emergency Females

		Service							
Age		0-5	5-10	10-15	15-20	20-25	25-30	30+	TOTAL
16-24	No.	1	0	0	0	0	0	0	1
	Salary	38,744	0	0	0	0	0	0	38,744
	Average Sal	38,744	0	0	0	0	0	0	38,744
25-29	No.	3	0	0	0	0	0	0	3
	Salary	97,949	0	0	0	0	0	0	97,949
	Average Sal	32,650	0	0	0	0	0	0	32,650
30-34	No.	1	2	0	0	0	0	0	3
	Salary	33,363	111,871	0	0	0	0	0	145,234
	Average Sal	33,363	55,936	0	0	0	0	0	48,411
35-39	No.	0	1	0	1	0	0	0	2
	Salary	0	60,137	0	63,157	0	0	0	123,294
	Average Sal	0	60,137	0	63,157	0	0	0	61,647
40-44	No.	1	0	1	1	1	1	0	5
	Salary	50,311	0	64,410	47,139	48,170	60,182	0	270,213
	Average Sal	50,311	0	64,410	47,139	48,170	60,182	0	54,043
45-49	No.	1	0	0	2	0	1	0	4
	Salary	50,511	0	0	110,717	0	78,338	0	239,566
	Average Sal	50,511	0	0	55,359	0	78,338	0	59,892
50-54	No.	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
	Average Sal	0	0	0	0	0	0	0	0
55-59	No.	1	0	0	0	0	0	0	1
	Salary	37,480	0	0	0	0	0	0	37,480
	Average Sal	37,480	0	0	0	0	0	0	37,480
60-69	No.	0	0	0	0	0	0	0	0
	Salary	0	0	0	0	0	0	0	0
	Average Sal	0	0	0	0	0	0	0	0
TOTAL	No.	8	3	1	4	1	2	0	19
	Salary	308,359	172,008	64,410	221,014	48,170	138,520	0	952,481
	Average Sal	38,545	57,336	64,410	55,253	48,170	69,260	0	50,131

**6. Disabled Members**

<u>Age</u>	<u>Males</u>			<u>Females</u>		
	<u>Number</u>	<u>Credited Service</u>	<u>Average Salary</u>	<u>Number</u>	<u>Credited Service</u>	<u>Average Salary</u>
25-29	0	0	0	0	0	0
30-35	0	0	0	0	0	0
35-39	1	1.99	29,413	0	0	0
40-44	4	20.13	27,692	1	4.82	21,720
45-49	4	60.69	37,474	2	17.64	23,770
50-54	9	64.79	26,154	7	69.09	28,666
55-59	3	37.45	40,119	3	21.62	21,828
60-64	11	161.74	32,787	8	154.55	31,285
65-69	<u>3</u>	<u>35.59</u>	<u>39,438</u>	<u>0</u>	<u>0</u>	<u>0</u>
	35	382.38	32,137	21	267.72	27,890

**7. Pensioners & Survivors**

<u>Age</u>	<u>Male</u>			<u>Female</u>		
	<u>Number</u>	<u>Monthly Pension</u>	<u>Monthly Bridge</u>	<u>Number</u>	<u>Monthly Pension</u>	<u>Monthly Bridge</u>
0-49	12	12,376	1,508	9	5,365	783
50-54	39	64,279	9,392	18	23,135	3,957
55-59	93	152,671	24,869	123	77,539	15,279
60-64	184	250,197	47,819	197	118,447	22,049
65-69	373	327,870	0	273	128,324	170
70-74	441	327,360	0	281	109,626	0
75-79	341	207,105	0	253	81,402	51
80-84	231	108,150	0	236	67,118	0
85-89	101	35,485	0	102	17,223	0
90-94	28	4,466	0	27	3,388	0
95 - 99	<u>0</u>	<u>0</u>	<u>0</u>	<u>5</u>	<u>542</u>	<u>0</u>
Total	1,843	1,489,958	83,588	1,524	632,110	42,289

**8.       Deferreds**

<u>Age</u>	<u>Male</u>			<u>Female</u>		
	<u>Number</u>	<u>Monthly Pension</u>	<u>Monthly Bridge</u>	<u>Number</u>	<u>Monthly Pension</u>	<u>Monthly Bridge</u>
0-24	1	0	0	1	9	0
25-29	21	2,252	0	17	940	0
30-34	20	2,887	0	48	4,738	0
35-39	71	10,642	68	87	11,681	293
40-44	114	25,196	883	126	19,411	564
45-49	149	41,267	3,250	166	33,725	2,780
50-54	134	45,003	3,899	150	29,860	1,590
55-59	125	33,984	1,183	127	23,005	1,088
60-64	87	21,269	292	85	15,461	450
65-69	<u>35</u>	<u>5,508</u>	<u>0</u>	<u>16</u>	<u>2,230</u>	<u>0</u>
Total	757	188,007	9,575	823	141,060	6,766

**9.       Pending**

<u>Age</u>	<u>Male</u>			<u>Female</u>		
	<u>Number</u>	<u>Annual Pension</u>	<u>Annual Bridge</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Annual Bridge</u>
0-24	37	439	0	60	917	0
25-29	48	2,775	85	136	6,215	3
30-34	53	6,116	0	127	9,744	0
35-39	47	9,361	716	124	11,090	253
40-44	59	11,660	357	117	11,043	1,117
45-49	47	10,447	1,053	110	14,175	866
50-54	48	16,177	1,910	77	11,608	579
55-59	41	5,925	397	34	6,085	839
60-64	23	6,918	1,486	12	1,302	309
65-69	<u>9</u>	<u>1,467</u>	<u>0</u>	<u>3</u>	<u>424</u>	<u>0</u>
Total	412	71,286	6,004	800	72,603	3,966

## **Appendix C Actuarial Opinion**

with respect to the Saskatchewan Municipal Employees Pension Plan forming part of the actuarial report dated April 12, 2005 on a valuation of the plan as at December 31, 2004.

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In my opinion:

- (a) the plan is fully funded at December 31, 2004 with a surplus of \$9,294,000.
- (b) the rule for computing the employer normal cost contribution for each year from January 1, 2005 to December 31, 2007 is that the employers should match the contributions made by the members. Estimated member contributions in 2005 are \$15.21 million. These contributions are not sufficient to meet the full costs of the benefits accruing in these years but a reserve has been established, and the financial position of the plan determined after the establishment of this reserve, to fund the shortfall for the 3 years from the valuation date.
- (c) the value of the plan assets would be greater than the actuarial liabilities if the plan were to be wound-up on the valuation date.
- (d) the plan has no solvency deficiency at the valuation date and the solvency ratio is not less than 1:1.
- (e) the next valuation must be prepared no later than December 31, 2007, but in view of the closing of the early retirement window at December 31, 2005, I believe that that may be a more appropriate date.

Notwithstanding the above, emerging experience which differs from the assumptions on which this opinion is based will result in gains or losses which will be revealed in future valuations.

In my opinion:

- (a) the data on which the valuation is based are sufficient and reliable for the purposes of the valuation.
- (b) the assumptions used are, in aggregate, appropriate for the purposes of the valuation, and
- (c) the methods employed in the valuation are appropriate for the purposes of this valuation.

This report has been prepared and my opinion given in accordance with accepted actuarial practice.

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Date

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John Corp,  
Fellow of the Institute of Actuaries  
Fellow of the Canadian Institutes of Actuaries

**Appendix D Administrator's Certification**

of the membership data submitted to Eckler Partners Ltd. in connection with the actuarial valuation of the Saskatchewan Municipal Employees' Pension Plan as at December 31, 2004.

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I hereby certify that to the best of my knowledge and belief the membership information provided in Appendix B is accurate and complete and is in accordance with our records as the plan administrator.

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Date

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Public Employees Benefits Agency  
Plan Administrator