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# The Contributory Pension Plan for Salaried Employees of McMaster University Including McMaster Divinity College

## Report on the Actuarial Valuation for Funding Purposes as at July 1, 2011

March 2012

MARSH & McLENNAN COMPANIES

## Note to reader regarding actuarial valuations:

This valuation report may not be relied upon for any purpose other than those explicitly noted in the Introduction, nor may it be relied upon by any party other than the parties noted in the Introduction. Mercer is not responsible for the consequences of any other use. A valuation report is a snapshot of a plan's estimated financial condition at a particular point in time; it does not predict a pension plan's future financial condition or its ability to pay benefits in the future. If maintained indefinitely, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the amount of plan expenses, and the amount earned on any assets invested to pay the benefits. These amounts and other variables are uncertain and unknowable at the valuation date.

To prepare the results in this report, actuarial assumptions are used to model a single scenario from a range of possibilities for each valuation basis. The results based on that single scenario are included in this report. However, the future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material. Different assumptions or scenarios within the range of possibilities may also be reasonable, and results based on those assumptions would be different. Furthermore, actuarial assumptions may be changed from one valuation to the next because of changes in regulatory and professional requirements, developments in case law, plan experience, changes in expectations about the future and other factors.

The valuation results shown in this report also illustrate the sensitivity to one of the key actuarial assumptions, the discount rate. We note that the results presented herein rely on many assumptions, all of which are subject to uncertainty, with a broad range of possible outcomes and the results are sensitive to all the assumptions used in the valuation.

Should the plan be wound-up, the going concern funded status and solvency financial position, if different from the wind-up financial position, become irrelevant. The hypothetical wind-up financial position estimates the financial position of the plan assuming it is wound-up on the valuation date. Emerging experience will affect the wind-up financial position of the plan assuming it is wound-up in the future. In fact, even if the plan were wound-up on the valuation date, the financial position would continue to fluctuate until the benefits are fully settled.

Because actual plan experience will differ from the assumptions used in this valuation, decisions about benefit changes, investment policy, funding amounts, benefit security and/or benefit-related issues should be made only after careful consideration of alternative future financial conditions and scenarios, and not solely on the basis of a valuation report or reports.

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# SUMMARY OF RESULTS

| | 01.07.2011 | 01.07.2010 |
|---|---|---|
| **Going Concern Financial Status** | | |
| Smoothed value of assets | $1,554,000 | $1,400,000 |
| Going concern funding target | $1,785,000 | $1,674,000 |
| Funding excess (shortfall) | $(231,000) | $(274,000) |
| **Hypothetical Wind-up Financial Position** | | |
| Wind-up assets (net of termination expenses) | $1,482,000 | $1,200,000 |
| Wind-up liability | $1,828,000 | $1,638,000 |
| Wind-up excess (shortfall) | $(346,000) | $(438,000) |
| **Solvency Financial Position** | | |
| Solvency assets (net of termination expenses) | $1,499,000 | $1,350,000 |
| Solvency liability | $1,691,000 | $1,499,000 |
| Solvency surplus (shortfall) | $(192,000) | $(149,000) |
| Present value of 5 years of existing special payments | $148,000 | $137,000 |
| Solvency excess (deficiency) created at valuation date | $(44,000) | $(12,000) |
| **Funding Requirements in the Year Following the Valuation**[1] | | |
| Total current service cost | $84,000 | $87,000 |
| Estimated member's required contributions | $(22,000) | $(19,000) |
| Estimated employer's current service cost | $62,000 | $68,000 |
| Expense allowance | $25,000 | $25,000 |
| Total | $87,000 | $93,000 |
| Employer's current service cost as a percentage of members' required contributions | 395% | 485% |
| Minimum special payments | $43,434 | $33,468 |
| Estimated minimum employer contribution | $130,434 | $126,468 |
| Estimated maximum eligible employer contribution | $433,000 | $531,000 |
| Next required valuation date | July 1, 2014 | July 1, 2011 |

[1] Provided for reference purposes only. Contributions must be remitted to the Plan in accordance with the Minimum Funding Requirements and Maximum Eligible Contributions sections of this report.

# 1

# Introduction

## To McMaster University

At the request of McMaster University, we have conducted an actuarial valuation of The Contributory Pension Plan for Salaried Employees of McMaster University Including McMaster Divinity College (the "Plan"), sponsored by McMaster University (the "University"), as at the valuation date, July 1, 2011. We are pleased to present the results of the valuation.

## Purpose

The purpose of this valuation is to determine:

- the funded status of the Plan as at July 1, 2011 on going concern, hypothetical wind-up and solvency bases,
- the minimum required funding contributions from July 1, 2011, in accordance with the Pension Benefits Act of Ontario; and
- the maximum permissible funding contributions from July 1, 2011, in accordance with the *Income Tax Act*.

The information contained in this report was prepared for the internal use of the University and for filing with the Financial Services Commission of Ontario and with the Canada Revenue Agency, in connection with our actuarial valuation of the Plan. This report will be filed with the Financial Services Commission of Ontario and with the Canada Revenue Agency. This report is not intended or suitable for any other purpose.

In accordance with pension benefits legislation, the next actuarial valuation of the Plan will be required as at a date not later than July 1, 2014, or as at the date of an earlier amendment to the Plan.

## Terms of Engagement

In accordance with our terms of engagement with the University, our actuarial valuation of the Plan is based on the following material terms:

- It has been prepared in accordance with applicable pension legislation and actuarial standards of practice in Canada;

- As instructed by the University, we have reflected a margin for adverse deviations in our going concern valuation by reducing the going concern discount rate by 0.40% per year; and
- We have reflected the University's decisions for determining the solvency funding requirements, summarized as follows:
  - The same plan wind-up scenarios were hypothesized for the hypothetical wind-up and solvency valuations;
  - Certain excludable benefits were excluded from the solvency liabilities; and
  - Solvency smoothing was used.

  See the Valuation Results – Solvency section of the report for more information.

## Events Since the Last Valuation at July 1, 2010

### *Pension Plan*

There have been no special events since the last valuation date.

This valuation reflects the provisions of the Plan as at July 1, 2011. The Plan has been amended since the date of the previous valuation, as follows:

- Effective July 2, 2011, the Plan was amended to introduce an increase to the employee contribution rate for members who are Faculty Members.

The Plan provisions are summarised in Appendix F.

## *Assumptions*

We have used the same going concern valuation assumptions and methods as were used for the previous valuation, except for the following:

| | Current valuation | Previous valuation |
|---|---|---|
| ITA limit / YMPE increases: | 3.00% | 4.25% |
| Pensionable earnings increases: | 4.75% (4.00% for Clinical Faculty Members) | 5.25% |
| Retirement rates: | 15% retire when first eligible for an unreduced pension, remainder retire at age 65 | 15% retire when first eligible for an unreduced pension, 10% retire at each age thereafter up to age 64, 20% retire at age 65, 50% retire at each of ages 66-69, remainder retire at age 70 |
| Mortality rates: | 85% of UP94 with future mortality improvements using Scale AA for males, 107% for females | UP94 with future mortality improvements using Scale AA |
| Eligible spouse at retirement: | Actual marital status | 85% |
| Spouse age difference: | Actual | Male 3 years older |

The hypothetical wind-up and solvency assumptions have been updated to reflect market conditions at the valuation date.

A summary of the going concern, and hypothetical wind-up and solvency methods and assumptions are provided in Appendices C and D, respectively.

## *Regulatory Environment and Actuarial Standards*

The Government of Ontario has announced its intentions to make changes to the funding requirements for pension plans registered in Ontario. Bill 120 has received Royal assent, however, the intended changes to the funding requirements which impact the funding of single-employer pension plans will be contained in regulations which have not yet been adopted.

Certain changes to the Canadian Institute of Actuaries Standard of Practice for determining pension commuted values (“CIA CV Standard”) became effective on February 1, 2011. The changes affect the mortality assumptions used to value the solvency and wind-up liabilities for benefits assumed to be settled through a lump sum transfer. The financial impact of the change in the CIA CV Standard has been reflected in this actuarial valuation.

A new Canadian actuarial Standard of Practice – *Practice Specific Standards of Practice for Pension Plans* became effective December 31, 2010 (the "CIA Pension Standards"). The requirements of the CIA Pension Standards have been reflected in this report.

## Subsequent Events

After checking with representatives of the University, to the best of our knowledge there have been no events subsequent to the valuation date which, in our opinion, would have a material impact on the results of the valuation. Our valuation reflects the financial position of the Plan as of the valuation date and does not take into account any experience after the valuation date.

## Impact of Case Law

This report has been prepared on the assumption that all of the assets in the pension fund are available to meet all of the claims on the Plan. We are not in a position to assess the impact that the Ontario Court of Appeal's decision in *Aegon Canada Inc. and Transamerica Life Canada versus ING Canada Inc.* or similar decisions in other jurisdictions might have on the validity of this assumption.

We have assumed that all the Plan's assets are available to cover the Plan's liabilities presented in this report.

# 2

# Valuation Results – Going Concern

## Financial Status

A going concern valuation compares the relationship between the value of Plan assets and the present value of expected future benefit cash flows in respect of accrued service, assuming the Plan will be maintained indefinitely.

The results of the current valuation, compared with those from the previous valuation, are summarized as follows:

| | 01.07.2011 | 01.07.2010 |
|---|---|---|
| **Assets** | | |
| Market value of assets | $1,499,000 | $1,240,000 |
| In-transits | $38,000 | $10,000 |
| Asset smoothing adjustment | $17,000 | $150,000 |
| Smoothed value of assets | $1,554,000 | $1,400,000 |
| | | |
| **Going concern funding target** | | |
| ▪ active members | $1,480,000 | $1,370,000 |
| ▪ pensioners and survivors | $22,000 | $22,000 |
| ▪ deferred pensioners | $283,000 | $282,000 |
| Total | $1,785,000 | $1,674,000 |
| Funding excess (shortfall) | $(231,000) | $(274,000) |

The going concern funding target includes a provision for adverse deviations.

## Reconciliation of Financial Status

| | | |
|---|---|---|
| Funding excess (shortfall) as at previous valuation | | $(274,000) |
| Interest on funding excess (funding shortfall) at 6.00% per year | | $(16,000) |
| Employer's special payments, with interest | | $74,000 |
| Expected funding excess (funding shortfall) | | $(216,000) |
| Net experience gains (losses) | | |
| ▪ Net investment return | $(25,000) | |
| ▪ Increases in pensionable earnings | $30,000 | |
| Total experience gains (losses) | $5,000 | $5,000 |
| | | |
| Total assumption changes impact | | $10,000 |
| Correction due to payment being made from wrong plan | | $(19,000) |
| Net impact of other elements of gains and losses | | $(11,000) |
| Funding excess (shortfall) as at current valuation | | $(231,000) |

## Current Service Cost

The current service cost is an estimate of the present value of the additional expected future benefit cash flows in respect of pensionable service that will accrue after the valuation date, assuming the Plan will be maintained indefinitely.

The current service cost during the year following the valuation date compared with the corresponding value determined in the previous valuation, is as follows:

| | **2011/2012** | **2010/2011** |
|---|---|---|
| Total current service cost | $84,000 | $87,000 |
| Estimated members' required contributions | $(22,000) | $(19,000) |
| Estimated employer's current service cost | $62,000 | $68,000 |
| Expense allowance | $25,000 | $25,000 |
| Total | $87,000 | $93,000 |
| Employer's current service cost expressed as a percentage of members' required contributions | 395% | 485% |

The key factors that have caused a change in the employer's current service cost excluding the expense allowance, since the previous valuation are summarized in the following table:

| | |
|---|---|
| Employer's current service cost as at previous valuation | 357% |
| Demographic changes | 6% |
| Plan amendments | (68%) |
| Changes in assumptions | (13%) |
| Employer's current service cost as at current valuation | 282% |

## Discount Rate Sensitivity

The following table summarises the effect on the going concern funding target shown in this report of using a discount rate which is 1.00% lower than that used in the valuation:

| **Scenario** | **Valuation basis** | **Reduce discount rate by 1%** |
|---|---|---|
| **Going concern funding target** | $1,785,000 | $1,893,000 |
| **Current service cost** | | |
| ▪ Total current service cost | $84,000 | $91,000 |
| ▪ Estimated members' required contributions | $(22,000) | $(22,000) |
| ▪ Estimated employer's current service cost | $62,000 | $69,000 |
| ▪ Expense allowance | $25,000 | $25,000 |
| Total | $87,000 | $94,000 |

# 3

# Valuation Results – Hypothetical Wind-up

## Financial Position

When conducting a hypothetical wind-up valuation, we determine the relationship between the respective values of the Plan's assets and its liabilities assuming the Plan is wound-up and settled on the valuation date, assuming benefits are settled in accordance with the Act and under circumstances producing the maximum wind-up liabilities on the valuation date. However, to the extent permitted by law, the actuary may disregard:

- benefits that would not be payable under the hypothesized scenario; and
- plan member earnings after the valuation date.

The hypothetical wind-up financial position as of the valuation date, compared with that at the previous valuation, is as follows:

| | **01.07.2011** | **01.07.2010** |
|---|---|---|
| **Assets** | | |
| Market value of assets | $1,499,000 | $1,240,000 |
| In-transits | $38,000 | $10,000 |
| Termination expense provision | $(55,000) | $(50,000) |
| Wind-up assets | $1,482,000 | $1,200,000 |
| | | |
| **Present value of accrued benefits for**: | | |
| ▪ active members | $1,515,000 | $1,327,000 |
| ▪ pensioners and survivors | $22,000 | $22,000 |
| ▪ deferred pensioners | $291,000 | $289,000 |
| Total wind-up liability | $1,828,000 | $1,638,000 |
| Wind-up excess (shortfall) | $(346,000) | $(438,000) |

## Wind-up Incremental Cost to July 1, 2014

The wind-up incremental cost is an estimate of the present value of the projected change in the hypothetical wind-up liabilities from the valuation date until the next scheduled valuation date, adjusted for the benefit payments expected to be made in that period.

The hypothetical wind-up incremental cost determined in this valuation, is as follows:

| | **01.07.2011** |
|---|---|
| Number of years covered by report | 3 years |
| Total hypothetical wind-up liabilities at the valuation date (A) | $1,829,000 |
| Present value of projected hypothetical wind-up liability at the next required valuation plus benefit payments until the next required valuation (B) | $2,098,000 |
| Hypothetical wind-up incremental cost (B – A) | $269,000 |

The incremental cost is not an appropriate measure of the contributions that would be required to maintain the financial position of the Plan on a hypothetical wind-up basis unchanged from the valuation date and the next required valuation date, if actual experience is exactly in accordance with the going concern valuation assumptions. This is because it does not reflect the fact that the expected return on plan assets (based on the going concern assumptions) is greater than the discount rate used to determine the hypothetical wind-up liabilities.

## Discount Rate Sensitivity

The following table summarises the effect on the hypothetical wind-up liabilities shown in this report of using a discount rate which is 1.00% lower than that used in the valuation:

| **Scenario** | **Valuation basis** | **Reduce discount rate by 1%** |
|---|---|---|
| Total hypothetical wind-up liability | $1,828,000 | $2,058,000 |

# 4

# Valuation Results – Solvency

## Overview

The Act also requires the financial position of the Plan to be determined on a solvency basis. The financial position on a solvency basis is determined in a similar manner to the Hypothetical Wind-up Basis, except for the following:

| Exceptions | Reflected in valuation based on the terms of engagement |
|---|---|
| The circumstance under which the Plan is assumed to be wound-up could differ for the solvency and hypothetical wind-up valuations. | The same circumstances were assumed for the solvency valuation as were assumed for the hypothetical wind-up. |
| Certain benefits can be excluded from the solvency financial position. These include:<br>(a) any escalated adjustment (e.g. indexing),<br>(b) certain plant closure benefits,<br>(c) certain permanent layoff benefits,<br>(d) special allowances other than funded special allowances,<br>(e) consent benefits other than funded consent benefits,<br>(f) prospective benefit increases,<br>(g) potential early retirement window benefit values, and<br>(h) pension benefits and ancillary benefits payable under a qualifying annuity contract. | Escalated adjustments were excluded from the solvency liabilities shown in this valuation. |
| The financial position on the solvency basis needs to be adjusted for any Prior Year Credit Balance. | Not applicable. |
| The solvency financial position can be determined by smoothing assets and the solvency discount rate over a period of up to 5 years. | Solvency assets and liabilities were smoothed over 5 years. |

| Exceptions | Reflected in valuation based on the terms of engagement |
| --- | --- |
| The benefit rate increases coming into effect after the valuation date can be reflected in the solvency valuation. | Not applicable. |

## Financial Position

The financial position on a solvency basis, compared with the corresponding figures from the previous valuation, is as follows:

| | 01.07.2011 | 01.07.2010 |
| --- | --- | --- |
| **Assets** | | |
| Market value of assets | $1,499,000 | $1,240,000 |
| In-transits | $38,000 | $10,000 |
| Termination expense provision | $(55,000) | $(50,000) |
| Net assets | $1,482,000 | $1,200,000 |
| **Liabilities** | | |
| Total hypothetical wind-up liabilities | $1,828,000 | $1,638,000 |
| Difference in circumstances of assumed wind-up | $0 | $0 |
| Value of excluded benefits | $(21,000) | $(28,000) |
| Liabilities on a solvency basis | $1,807,000 | $1,610,000 |
| Surplus (shortfall) on a market value basis | $(325,000) | $(410,000) |
| Solvency liability adjustment | $116,000 | $111,000 |
| Solvency asset adjustment | $165,000 | $287,000 |
| Surplus (shortfall) on a solvency basis | $(44,000) | $(12,000) |
| Transfer ratio | 0.81 | 0.73 |

# 5

## Minimum Funding Requirements

The Act prescribes the minimum contributions that McMaster University must make to the Plan. The minimum contributions in respect of a defined benefit component of a pension plan are comprised of going concern current service cost and special payments to fund any going concern or solvency shortfalls.

On the basis of the assumptions and methods described in this report, the rule for determining the minimum required employer monthly contributions, as well as an estimate of the employer contributions, from the valuation date until the next required valuation are as follows:

| | Employer's contribution rule | | | Estimated employer's contributions | |
|---|---|---|---|---|---|
| **Period beginning** | **Monthly current service cost** | **Explicit monthly expense allowance** | **Minimum monthly special payments** | **Monthly current service cost including expense allowance** | **Total minimum monthly contributions** |
| July 1, 2011 | $5,167 | $2,083 | $3,620 | $7,250 | $10,870 |
| July 1, 2012 | $5,167 | $2,083 | $3,620 | $7,250 | $10,870 |
| July 1, 2013 | $5,500 | $2,083 | $3,620 | $7,583 | $11,203 |

The estimated contribution amounts above are based on projected members' required contributions. Therefore the actual employer's current service cost will be different from the above estimates and, as such, the contribution requirements should be monitored closely to ensure contributions are made in accordance with the Act.

The development of the minimum special payments is summarized in Appendix A.

# Other Considerations

## *Differences between valuation bases*

There is no provision in the minimum funding requirements to fund the difference between the hypothetical wind-up and solvency shortfalls, if any.

In addition, although minimum funding requirements do include a requirement to fund the going concern current service cost, there is no requirement to fund the expected growth in the hypothetical wind-up or solvency liability after the valuation date, which could be greater than the going concern current service cost.

## *Timing of contributions*

Funding contributions are due on a monthly basis. Contributions for current service cost, including the expense allowance, must be made within 30 days following the month to which they apply. Special payment contributions must be made in the month to which they apply.

## *Retroactive contributions*

The University must contribute the excess, if any, of the minimum contribution recommended in this report over contributions actually made in respect of the period following the valuation date. This contribution, along with an allowance for interest, is due no later than 60 days following the date this report is filed.

## *Payment of benefits*

The Act imposes certain restrictions on the payment of lump sums from the Plan when the transfer ratio revealed in an actuarial valuation is less than one. If the transfer ratio shown in this report is less than one, the plan administrator should ensure that the monthly special payments are sufficient to meet the requirements of the Act to allow for the full payment of benefits, and otherwise should take the prescribed actions.

Additional restrictions are imposed when:

- The transfer ratio revealed in the most recently filed actuarial valuation is less than one and the administrator knows or ‘ought to know’ that the transfer ratio of the Plan has declined by 10% or more since the date the last valuation was filed.

- The transfer ratio revealed in the most recently filed actuarial valuation is greater than or equal to one and the administrator knows or ‘ought to know’ that the transfer ratio of the Plan has declined to less than 0.9 since the date the last valuation was filed.

As such, the administrator should monitor the transfer ratio of the Plan and, if necessary, take the prescribed actions.

# 6

# Maximum Eligible Contributions

The *Income Tax Act* (the "ITA") limits the amount of employer contributions that can be remitted to the defined benefit component of a registered pension plan. However, notwithstanding the limit imposed by the ITA, for plans which are not 'Designated' as defined in the ITA, in general, the minimum required contributions under the Act can be remitted.

In accordance with Section 147.2 of the ITA and *Income Tax Regulation* 8516, for a plan which is underfunded on either a going concern or on a hypothetical wind-up basis the maximum permitted contributions are equal to the employer's current service cost, including the explicit expense allowance if applicable, plus the greater of the going concern funding shortfall and hypothetical wind-up shortfall.

For a plan which is fully funded on both going concern and hypothetical wind-up bases, the employer can remit a contribution equal to the employer's current service cost, including the explicit expense allowance if applicable, as long as the surplus in the plan does not exceed a prescribed threshold. Specifically, in accordance with Section 147.2 of the ITA, for a plan which is fully funded on both going concern and hypothetical wind-up bases, the plan may not retain its registered status if the employer makes a contribution while the going concern funding excess exceeds 25% of the going concern funding target.

## Schedule of Maximum Contributions

The University is permitted to fully fund the greater of the going concern and hypothetical wind-up shortfalls; $346,000, as well as make current service cost contributions. The portion of this contribution representing the payment of the hypothetical wind-up shortfall can be increased with interest at 3.93% per year from the valuation date to the date the payment is made, and must be reduced by the amount of any deficit funding made from the valuation date to the date the payment is made.

Assuming the University contributes the greater of the going concern and hypothetical wind-up shortfall of $346,000 as of the valuation date, the rule for determining the estimated maximum eligible annual contributions, as well as an estimate of the maximum eligible contributions until the next valuation are as follows:

| Employer's contribution rule | | | | Estimated employer's contributions |
|---|---|---|---|---|
| **Year beginning** | **Monthly current service cost** | **Monthly expense allowance** | **Deficit Funding** | **Monthly current service cost including expense allowance** |
| July 1, 2011 | $5,167 | $2,083 | n/a | $7,250 |
| July 1, 2012 | $5,167 | $2,083 | n/a | $7,250 |
| July 1, 2013 | $5,500 | $2,083 | n/a | $7,583 |

The employer's current service cost in the above table was estimated based on projected members' required contributions. The actual employer's current service cost will be different from these estimates and, as such, the contribution requirements should be monitored closely to ensure compliance with the ITA.

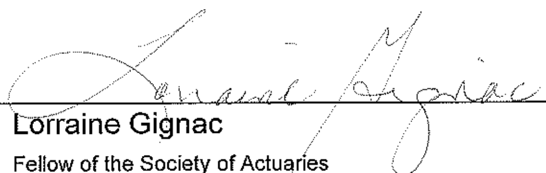
7

# Actuarial Opinion

In our opinion, for the purposes of the valuations,

- the membership data on which the valuation is based are sufficient and reliable,
- the assumptions are appropriate, and
- the methods employed in the valuation are appropriate.

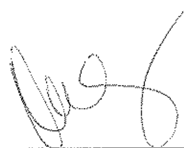
This report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada. It has also been prepared in accordance with the funding and solvency standards set by the Pension Benefits Act of Ontario.



Lorraine Gignac
Fellow of the Society of Actuaries
Fellow of the Canadian Institute of Actuaries

March 12, 2012

Date



Karen Tang
Fellow of the Society of Actuaries
Fellow of the Canadian Institute of Actuaries

March 12, 2012

Date

# Appendix A

## Prescribed Disclosure

### Definitions

The Act defines a number of terms as follows:

| **Defined Term** | **Description** | **Result** |
|---|---|---|
| Transfer Ratio | The ratio of:<br>(a) solvency assets minus the lesser of the Prior Year Credit Balance and the minimum required employer contributions until the next required valuation; to<br>(b) the sum of the solvency liabilities and liabilities for benefits, other than benefits payable under qualifying annuity contracts that were excluded in calculating the solvency liabilities. | 0.81 |
| Prior Year Credit Balance | Accumulated excess of contributions made to the pension plan in excess of the minimum required contributions (note: only applies if the University chooses to treat the excess contributions as a Prior Year Credit Balance). | $0 |
| Solvency Assets | Market value of assets including accrued or receivable income and excluding the value of any qualifying annuity contracts[2]. | $1,482,000 |
| Solvency Asset Adjustment | The sum of: | |
| | (a) the difference between smoothed value of assets and the market value of assets; | $17,000 |
| | (b) the present value of any going concern special payments (including those identified in this report) within 5 years following the valuation date; | $138,000 |
| | (c) the present value of any previously scheduled solvency special payments (excluding those identified in this report) | $10,000 |
| | | $165,000 |

[2] In accordance with accepted actuarial practice, for purposes of determining the financial position, the market value of plan assets was adjusted for any in-transit benefit payments, contributions, and other in-transit cash flows, and reduced by a provision for estimated termination expenses payable from the Plan's assets that may reasonably be expected to be incurred in terminating the Plan and to be charged to the Plan.

| Defined Term | Description | Result |
|---|---|---|
| Solvency Liabilities | Liabilities determined as if the plan had been wound-up on the valuation date, including liabilities for plant closure benefits or permanent layoff benefits that would be immediately payable if the employer's business were discontinued on the valuation date of the report, but, if elected by the plan sponsor, excluding liabilities for, | $1,807,000 |
| | (a) any escalated adjustment, | |
| | (b) excluded plant closure benefits, | |
| | (c) excluded permanent layoff benefits, | |
| | (d) special allowances other than funded special allowances, | |
| | (e) consent benefits other than funded consent benefits, | |
| | (f) prospective benefit increases, | |
| | (g) potential early retirement window benefit values, and | |
| | (h) pension benefits and ancillary benefits payable under a qualifying annuity contract. | |
| Solvency Liability Adjustment | The amount by which solvency liabilities are adjusted as a result of using a solvency valuation interest rate that is the average of market interest rates calculated over the period of time used in the determination of the smoothed value of assets. | $116,000 |
| Solvency Deficiency | The amount by which the sum of: | |
| | (a) the solvency liabilities | $1,807,000 |
| | (b) the solvency liability adjustment | $(116,000) |
| | (c) the prior year credit balance | $0 |
| | | $1,691,000 |
| | Exceeds the sum of | |
| | (d) the solvency assets | $1,482,000 |
| | (e) the solvency asset adjustment | $165,000 |
| | | $1,647,000 |
| | Solvency Deficiency | $44,000 |

## Timing of Next Required Valuation

In accordance with the Act the next valuation of the Plan would be required at an effective date within one year of the current valuation date if:

- The ratio of solvency assets to solvency liabilities is less than 80%;
- The ratio of solvency assets to solvency liabilities is less than 85% and solvency liabilities exceed solvency assets by $5 million or more; or,
- The employer elected to exclude plant closure or permanent lay-off benefits under Section 5(18) of the regulations, and has not rescinded that election.

Otherwise, the next valuation of the Plan would be required at an effective date no later than three years after the current valuation date.

Accordingly, the next valuation of the Plan will be required as of July 1, 2014.

## Special Payments

Based on the results of this valuation, the Plan is not fully funded. In accordance with the Act, any going concern deficits must be amortized over a period not exceeding 15 years and any solvency deficits must be amortized over a period not exceeding 5 years.

As such, special payments must be made as follows:

| | | | | Present Value | |
|---|---|---|---|---|---|
| **Type of payment** | **Start date** | **End date** | **Monthly Special Payment** | **Going Concern Basis[3]** | **Solvency Basis[4]** |
| Going concern | July 1, 2006 | June 30, 2016 | $456 | $24,000 | $25,000 |
| Going concern | July 1, 2009 | May 31, 2022 | $1,882 | $182,000 | $101,000 |
| Going concern | July 1, 2010 | March 31, 2025 | $225 | $25,000 | $12,000 |
| | | | | $231,000 | |
| Solvency | July 1, 2010 | June 30, 2015 | $226 | | $10,000 |
| | | | | | $148,000 |
| New solvency | July 1, 2011 | June 30, 2016 | $831 | | $44,000 |
| Total | | | $3,620 | | $192,000 |

[3] Calculation only considers going concern special payments and is based on a going-concern discount rate.

[4] Calculation considers both solvency and going concern special payments (five years only) and is based on the average solvency discount rate.

The present value of going concern special payments scheduled in the previous valuation exceeded the going concern shortfall. In accordance with the Act, the excess can be used to reduce the amount or the period of any going concern special payment schedule. Therefore, we have *reduced the amortization period of the going concern special payments established on July 1, 2009 and July 1, 2010.*

The present value of the revised going concern special payments (over the next 5 years) and previously scheduled solvency payments is lower than the solvency shortfall resulting in a solvency deficiency of $44,000. As a result, a new solvency special payment schedule had to be established.

## Pension Benefit Guarantee Fund (PBGF) Assessment

The PBGF assessment base and liabilities are derived as follows:

| | | |
|---|---|---|
| Market value of assets | $1,537,000 | (a) |
| PBGF liabilities | $1,807,000 | (b) |
| Solvency liabilities | $1,807,000 | (c) |
| Ontario asset ratio | 100.00% | (d) = (b) ÷ (c) |
| Ontario portion of the fund | $1,537,000 | (e) = (a) x (d) |
| PBGF assessment base | $270,000 | (f) = (b) – (e) |
| Amount of additional liability for plant closure and/or permanent layoff benefits which is not funded and subject to the 2% assessment pursuant to s.37(4) | $0 | (g) |

The PBGF assessment is calculated as follows:

| | | |
|---|---|---|
| $5 for each Ontario member | $210 | (h) |
| 0.5% of PBGF assessment base up to 10% of PBGF liabilities | $904 | (i) |
| 1.0% of PBGF assessment base between 10% and 20% of PBGF liabilities | $893 | (j) |
| 1.5% of PBGF assessment base over 20% of PBGF liabilities | $0 | (k) |
| Sum of (h), (i), (j) and (k) | $2,007 | (l) |
| $300 for each Ontario member | $12,600 | (m) |
| Lesser of (l) and (m) | $2,007 | (n) |
| 2.0% of additional liabilities ((g) x 2%) | $0 | (o) |
| Total Guarantee Fund Assessment ((n) + (o), no less than $250) (before applicable tax) | $2,007 | (p) |

# Appendix B

## Plan Assets

The pension fund is held by CIBC Mellon. In preparing this report, we have relied upon fund statements prepared by CIBC Mellon.

### Reconciliation of Market Value of Plan Assets

The pension fund transactions since the last valuation are summarized in the following table:

| | 2010/2011 |
|---|---|
| July 1 | $1,240,000 |
| PLUS | |
| Members' contributions | $21,000 |
| University's contributions | $132,000 |
| Investment income | $38,000 |
| Net capital gains (losses) | $159,000 |
| | $350,000 |
| LESS | |
| Pensions paid | $2,000 |
| Lump-sums paid | $18,000 |
| Administration fees | $71,000 |
| | $91,000 |
| June 30 | $1,499,000 |
| Gross rate of return[5] | 15.50% |
| Rate of return net of expenses[5] | 9.62% |

[5] Assuming mid-period cash flows.

The market value of assets shown in the above table is adjusted to reflect in-transit amounts as follows:

| | Current valuation | Previous valuation |
|---|---|---|
| Market value of invested assets | $1,499,000 | $1,240,000 |
| In-transit amounts | | |
| ▪ Members' contributions | $2,000 | $1,000 |
| ▪ University's contributions | $42,000 | $9,000 |
| ▪ Expenses | $(6,000) | $0 |
| ▪ Benefit payments | $0 | $0 |
| Market value of assets adjusted for in-transit amounts | $1,537,000 | $1,250,000 |

We have tested the pensions paid, the lump-sums paid and the contributions for consistency with the membership data for the Plan members who have received benefits or made contributions. The results of these tests were satisfactory.

## Investment Policy

The plan administrator adopted a statement of investment policy and procedures. This policy is intended to provide guidelines for the manager(s) as to the level of risk which is commensurate with the Plan's investment objectives. A significant component of this investment policy is the asset mix.

The constraints on the asset mix and the actual asset mix at the valuation date are provided for information purposes:

| | Investment Policy | | | Actual Asset Mix as at July 1, 2011 |
|---|---|---|---|---|
| | Minimum | Target | Maximum | |
| Canadian Equities | 8% | 13% | 18% | 14.7% |
| U.S. Equities | 21% | 26% | 31% | 24.9% |
| International Equities | 21% | 26% | 31% | 23.4% |
| Bonds | 25% | 35% | 45% | 36.3% |
| Cash | 0% | 0% | 0% | 0.7% |
| | | 100% | | 100.0% |

# Appendix C

## Methods and Assumptions – Going Concern

For this valuation, we have continued to use an adjusted market value method to determine the smoothed value of assets. Under this method, all investment gains/(losses) are spread over 5 years.

The asset values produced by this method are related to the market value of the assets, with the advantage that, over time, the market-related asset values will tend to be more stable than market values. To the extent that more capital gains than losses will arise over the long term, the smoothed value will tend to be lower than the market value.

The smoothed value of the assets at July 1, 2011, was derived as follows:

| | **2007/2008** | **2008/2009** | **2009/2010** | **2010/2011** |
|---|---|---|---|---|
| Market value of assets at July 1st | $1,179 | $1,166 | $1,074 | $1,240 |
| Payment into Plan | $59 | $59 | $145 | $153 |
| Payment out of Plan | $(25) | $(17) | $(48) | $(87) |
| Expected interest | $78 | $77 | $70 | $76 |
| Investment experience gains/(losses) | $(125) | $(211) | $(1) | $117 |
| Market value of assets at June 30th | $1,166 | $1,074 | $1,240 | $1,499 |

The smoothed value of the assets at July 1, 2011, was derived as follows:

| | | |
|---|---|---|
| Market value of assets | | $1,499,000 |
| LESS | | |
| Unrecognized capital gains | 2010/2011: $117,000 x 80% = | $94,000 |
| (Losses) realized or unrealized | 2009/2010: $(1,000) x 60% = | $(1,000) |
| | 2008/2009: $(211,000) x 40% = | $(85,000) |
| | 2007/2008: $(125,000) x 20% = | $(25,000) |
| | | $(17,000) |
| Smoothed value of assets | | $1,516,000 |

The smoothed value of assets shown in the above table is adjusted to reflect in-transit amounts as follows:

| | **Current valuation** | **Previous valuation** |
|---|---|---|
| Smoothed value of assets | $1,516,000 | $1,390,000 |
| In-transit amounts | | |
| ▪ Members' contributions | $2,000 | $1,000 |
| ▪ University's contributions | $42,000 | $9,000 |
| ▪ Expenses | $(6,000) | $0 |
| ▪ Benefit payments | $0 | $0 |
| Smoothed value of assets, adjusted for in-transit amounts | $1,554,000 | $1,400,000 |

## Going Concern Funding Target

Over time, the real cost to the employer of a pension plan is the excess of benefits and expenses over member contributions and investment earnings. The actuarial cost method allocates this cost to annual time periods.

For purposes of the going concern valuation, we have continued to use the projected unit credit actuarial cost method. Under this method, we determine the present value of benefit cash flows expected to be paid in respect of service accrued prior to the valuation date, based on projected final average earnings. This is referred to as the funding target.

The funding excess or funding shortfall, as the case may be, is the difference between the market or smoothed value of assets and the funding target. A funding excess on a market value basis indicates that the current market value of assets and expected investment earnings are expected to be sufficient to meet the cash flows in respect of benefits accrued to the valuation

date as well as expected expenses – assuming the plan is maintained indefinitely. A funding shortfall on a market value basis indicates the opposite – that the current market value of the assets is not expected to meet the plan's cash flow requirements in respect of accrued benefits and absent additional contributions.

As required under the Act, a funding shortfall will be amortized over no more than 15 years through special payments. A funding excess may, from an actuarial standpoint, be applied immediately to reduce required employer current service contributions unless precluded by the terms of the plan or by legislation.

The actuarial cost method used for the purposes of this valuation produces a reasonable matching of contributions with accruing benefits. Because benefits are recognized as they accrue, the actuarial cost method provides an effective funding target for a plan that is maintained indefinitely.

### *Current Service Cost*

The current service cost is the present value of projected benefits to be paid under the plan with respect to service expected to accrue during the period until the next valuation.

The employer's current service cost is the total current service cost reduced by the members' required contributions.

The employer's current service cost has been expressed as a percentage of the members' required contributions to provide an automatic adjustment in the event of fluctuations in membership and/or pensionable earnings.

Under the projected unit credit actuarial cost method, the current service cost for an individual member will increase each year as the member approaches retirement. However, the current service cost of the entire group, expressed as a percentage of the members' required contributions, can be expected to remain stable as long as the average age of the group remains constant.

## Actuarial Assumptions – Going Concern Basis

The present value of future benefit payment cash flows is based on economic and demographic assumptions. At each valuation we determine whether, in our opinion, the actuarial assumptions are still appropriate for the purposes of the valuation, and we revise them, if necessary. Emerging experience will result in gains or losses that will be revealed and considered in future actuarial valuations.

The table below shows the various assumptions used in the current valuation in comparison with those used in the previous valuation.

| Assumption | Current valuation | Previous valuation |
|---|---|---|
| Discount rate: | 6.00% | 6.00% |
| Explicit expenses: | $25,000 | $25,000 |
| Inflation: | 2.50% | 2.00% |
| ITA limit / YMPE increases: | 3.00% | 4.25% |
| Pensionable earnings increases: | 4.75% (4.00% for Clinical Faculty members) | 5.25% |
| Post retirement pension increases: | 1.50% | 1.50% |
| Interest on employee contributions: | 6.00% | 6.00% |
| Retirement rates: | 15% retire when first eligible for an unreduced pension, remainder retire at age 65 | 15% retire when first eligible for an unreduced pension, 10% retire at each age thereafter up to age 64, 20% retire at age 65, 50% retire at each of ages 66-69, remainder retire at age 70 |
| Termination rates: | None | None |
| Mortality rates: | 85% of the rates of the 1994 Uninsured Pensioner Mortality Table for males, 107% for females | 100% of the rates of the 1994 Uninsured Pensioner Mortality Table |
| Mortality improvements: | Fully generational using Scale AA | Fully generational using Scale AA |
| Disability rates: | None | None |
| Eligible spouse at retirement: | Actual marital status | 85% |
| Spousal age difference: | Actual | Male 3 years older |

The assumptions are best estimates with the exception that the discount rate includes a margin for adverse deviations, as shown below.

## *Pensionable Earnings*

The benefits ultimately paid will depend on each member's final average earnings. To calculate the pension benefits payable upon retirement, death or termination of employment, we have taken the rate of pay on July 1, 2011, and assumed that such pensionable earnings will increase at the assumed rate.

# Rationale for Assumptions

A rationale for each of the assumptions used in the current valuation is provided below.

**Discount rate**

We have discounted the expected benefit payment cash flows using the expected investment return on the market value of the fund. Other bases for discounting the expected benefit payment cash flows may be appropriate, particularly for purposes other than those specifically identified in this valuation report.

The discount rate is comprised of the following:

- Estimated returns for each major asset class consistent with market conditions on the valuation date and the target asset mix specified in the Plan's investment policy.
- Additional returns assumed to be achievable due to active equity management equal to the fees related to active equity management. Such fees were determined by the difference between the provision for total investment expenses and the hypothetical fees that would be incurred for passive management of all assets.
- Implicit provision for investment expenses determined as the average rate of investment expenses paid from the fund over the last 3 years.
- A margin for adverse deviations of 0.40%.

The discount rate was developed as follows:

| | |
|---|---|
| Assumed investment return | 6.60% |
| Additional returns for active management | 0.15% |
| Investment expense provision | (0.35%) |
| Margin for adverse deviation | (0.40%) |
| Net discount rate | 6.00% |

**Explicit Expenses**

The assumption has taken into consideration of the average amount of investment and administrative expenses over the last 3 years.

**Inflation**

The inflation assumption is based on market expectations of long-term inflation implied by the yields on nominal and real return bonds at the valuation date of 2.5%.

**Income Tax Act Pension Limit and Year's Maximum Pensionable Earnings**

The assumption is based on historical real economic growth and the underlying inflation assumption.

| **Pensionable earnings** |
| --- |
| The assumption is based on general wage growth assumptions increased by our best estimate of future merit and promotional increases over general wage growth considering University's expectations. |
| **Post retirement pension increases** |
| The assumption is based on the Plan formula and inflation assumption above. |

| **Retirement rates** |
| --- |
| The assumption is based on the experience over the Plan years 2002 to 2008. Subsequent experience has been consistent with these rates. |

| **Termination rates** |
| --- |
| Use of a different assumption would not have a material impact on the valuation. |

| **Mortality rates** |
| --- |
| The assumption is based on experience over the years 1997 to 2006. Subsequent experience indicates that these assumptions remain appropriate.<br>Based on the assumption used, the life expectancy of a member age 65 at the valuation date is 20.9 years for males and 21.5 years for females. |

| **Interest on employee contributions** |
| --- |
| The assumption is based on Plan terms and the underlying investment return assumption. |

| **Disability rates** |
| --- |
| Use of a different assumption would not have a material impact on the valuation. |

| **Eligible spouse** |
| --- |
| Due to the small size of the plan, actual marital status was used. |

| **Spousal age difference** |
| --- |
| Due to the small size of the plan, actual spousal age difference was used. |

# Appendix D

## Methods and Assumptions – Hypothetical Wind-up and Solvency

### Hypothetical Wind-up Basis

The Canadian Institute of Actuaries requires actuaries to report the financial position of a pension plan on the assumption that the plan is wound-up on the effective date of the valuation, with benefits determined on the assumption that the pension plan has neither a surplus nor a deficit. For the purposes of the hypothetical wind-up valuation, the plan wind-up is assumed to occur in circumstances that maximize the actuarial liability.

To determine the actuarial liability on the hypothetical wind-up basis, we have valued those benefits that would have been paid had the Plan been wound-up on the valuation date, including benefits that would be immediately payable if the employer's business were discontinued on the valuation date, with all members fully vested in their accrued benefits. No benefits payable on plan wind-up were excluded from our calculations.

Upon plan wind-up members are given options for the method of settling their benefit entitlements. The options vary by eligibility and by province of employment, but in general, involve either a lump sum transfer or an immediate or deferred pension.

The value of benefits assumed to be settled through a lump sum transfer is based on the assumptions described in Section 3500 – *Pension Commuted Values* of the Canadian Institute of Actuaries Standards of Practice applicable for July 1, 2011.

Benefits provided as an immediate or deferred pension are assumed to be settled through the purchase of annuities based on an estimate of the cost of purchasing annuities.

We have estimated the cost of settlement through purchase of annuities in accordance with the *Canadian Institute of Actuaries Educational Note: Assumptions for Hypothetical Wind-up and Solvency Valuations with Effective Dates Between December 31, 2010 and December 30, 2011.*

We have not included a provision for adverse deviation in the solvency and hypothetical wind-up valuations.

The assumptions are as follows:

| **Form of benefit settlement elected by member** | |
|---|---|
| Lump sum | 80% of active and deferred members under age 55 and 20% of active and deferred members over age 55 elect to receive their benefit entitlement in a lump sum |
| Annuity purchase | All remaining members are assumed to elect to receive their benefit entitlement in the form of a deferred or immediate pension. These benefits are assumed to be settled through the purchase of deferred or immediate annuities from a life insurance company. |
| **Basis for benefits assumed to be settled through a lump sum** | |
| Mortality rates: | UP94 Fully Generational (blending 50% / 50% male/female rates) |
| Interest rate: | 3.6% per year for 10 years, 4.9% per year thereafter (4.2% per year for 10 years, 5.3% per year thereafter, for solvency liability adjustment) |
| **Basis for benefits assumed to be settled through the purchase of an annuity** | |
| Mortality rates: | UP94 Fully Generational |
| Interest rate: | 4.19% (4.54% for deferred annuities, and 4.79% for immediate annuities, for solvency liability adjustment) per year |
| **Retirement age** | |
| Maximum value: | Members are assumed to retire at the age which maximizes the value of their entitlement from the Plan based on the eligibility requirements which have been met at the valuation date |
| Grow-in: | The benefit entitlement and assumed retirement age of Ontario members whose age plus service equals at least 55 at the valuation date, reflect their entitlement to grow into early retirement subsidies |
| **Other assumptions** | |
| Special payments | Discounted at the average interest rate of 4.52% per year |
| Final average earnings: | Based on actual pensionable earnings over the averaging period |
| Family composition: | Same as for going concern valuation |
| Maximum pension limit: | $2,552.22 increasing at 2.86% per year for 10 years, 3.77% per year thereafter |
| Termination expenses: | $55,000 |

To determine the hypothetical wind-up position of the Plan, a provision has been made for estimated termination expenses payable from the Plan's assets in respect of actuarial and administration expenses that may reasonably be expected to be incurred in terminating the Plan and to be charged to the Plan.

Because the settlement of all benefits on wind-up is assumed to occur on the valuation date and is assumed to be uncontested, the provision for termination expenses does not include custodial, investment management, auditing, consulting and legal expenses that would be incurred between the wind-up date and the settlement date or due to the terms of a wind-up being contested. Expenses associated with the distribution of any surplus assets that might arise on an actual wind-up are also not included in the estimated termination expense provisions.

In determining the provision for termination expenses payable from the Plan's assets, we have assumed that the plan sponsor would be solvent on the wind-up date. We have also assumed, without analysis, that the Plan's terms as well as applicable legislation and court decisions would permit the relevant expenses to be paid from the Plan.

Actual fees incurred on an actual plan wind-up may differ materially from the estimates disclosed in this report.

## Incremental Cost

In order to determine the incremental cost, we estimate the hypothetical wind-up liabilities at the next valuation date. We have assumed that the cost of settling benefits by way of a lump sum or purchasing annuities remains consistent with the assumptions described above. Since the projected hypothetical wind-up liabilities will depend on the membership in the Plan at the next valuation date, we must make assumptions about how the Plan membership will evolve over the period until the next valuation.

We have assumed that the Plan membership will evolve in a manner consistent with the going concern assumptions as follows:

- Members terminate, retire and die consistent with the termination, retirement and mortality rates used for the going concern valuation;
- Pensionable earnings, the *Income Tax Act* pension limit and the Year's Maximum Pensionable Earnings increase in accordance with the related going concern assumptions;
- Active members accrue pensionable service in accordance with the terms of the Plan;

## Solvency Basis

In determining the financial position of the Plan on the solvency basis, we have used the smoothed value of assets and the solvency discount rate that has been averaged over a 5 year period

In our determinations of the solvency asset adjustment, we have used the same adjusted market value method as used for going-concern funding purposes to determine the smoothed value of assets, as described in Appendix C of this report.

We have excluded the value of post-retirement indexing benefits provided under the Plan from the solvency liabilities. The solvency position is determined in accordance with the requirements of the Act.

# Appendix E

## Membership Data

### Analysis of Membership Data

The actuarial valuation is based on membership data as at July 1, 2011, provided by McMaster University.

We have applied tests for internal consistency, as well as for consistency with the data used for the previous valuation. These tests were applied to membership reconciliation, basic information (date of birth, date of hire, date of membership, gender, etc.), pensionable earnings, credited service, contributions accumulated with interest and pensions to retirees and other members entitled to a deferred pension. Contributions, lump sum payments and pensions to retirees were compared with corresponding amounts reported in financial statements. The results of these tests were satisfactory.

Plan membership data are summarized below. For comparison, we have also summarized corresponding data from the previous valuation.

| | 01.07.2011 | 01.07.2010 |
|---|---|---|
| **Active Members** | | |
| Number | 3 | 3 |
| Total pensionable earnings for the following year | $346,004 | $346,084 |
| Average pensionable earnings for the following year | $115,335 | $115,361 |
| Average years of pensionable service | 16.8 years | 15.8 years |
| Average age | 54.6 | 53.6 |
| Accumulated contributions with interest | $403,383 | $376,870 |
| **Deferred Pensioners** | | |
| Number | 38 | 38 |
| Total annual pension | $15,490 | $15,490 |
| Average annual pension | $408 | $408 |
| Average age | 52.1 | 51.1 |
| **Pensioners and Survivors** | | |
| Number | 1 | 1 |
| Total annual lifetime pension | * | * |
| Average annual lifetime pension | * | * |
| Average age | * | * |

*suppressed to preserve confidentiality

The membership movement for all categories of membership since the previous actuarial valuation is as follows:

| | Actives | Deferred Vested | Pensioners and Beneficiaries | Total |
|---|---|---|---|---|
| Total at 01.07.2010 | 3 | 38 | 1 | 42 |
| New entrants | | | | |
| Terminations: | | | | |
| ▪ not vested | | | | |
| ▪ transfers/lump sums | | | | |
| ▪ deferred pensions | | | | |
| Deaths | | | | |
| Retirements | | | | |
| Beneficiaries | | | | |
| Data adjustments | | | | |
| Total at 01.07.2011 | 3 | 38 | 1 | 42 |

The distribution of the active members by age and pensionable service as at 01.07.2011 is summarized as follows:

| | | | Years of Credited Service | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Age** | **0-4** | **5-9** | **10-14** | **15-19** | **20-24** | **25-29** | **30 +** | **Total** |
| Under 20 | | | | | | | | |
| 20 to 24 | | | | | | | | |
| 25 to 29 | | | | | | | | |
| 30 to 34 | | | | | | | | |
| 35 to 39 | | | | | | | | |
| 40 to 44 | | | | | | | | |
| 45 to 49 | | | 1 | | | | | 1 |
| 50 to 54 | | | | 1 | | | | 1 |
| 55 to 59 | | | | | | | | |
| 60 to 64 | | | | | 1 | | | 1 |
| 65 + | | | | | | | | |
| Total | | | 1 | 1 | 1 | | | 3 |

The distribution of the inactive members by age as at 01.07.2011 is summarized as follows:

| | Deferred Pensioners | | Pensioners and Survivors | |
|---|---|---|---|---|
| **Age** | **Number** | **Average Pension** | **Number** | **Average Pension** |
| < 35 | 4 | $167 | | |
| 35 – 39 | 4 | $379 | | |
| 40 – 44 | 4 | $211 | | |
| 45 – 49 | 6 | $723 | | |
| 50 – 54 | 5 | $431 | | |
| 55 – 59 | 6 | $420 | | |
| 60 – 64 | 4 | $506 | | |
| 65 – 69 | 2 | $63 | 1 | * |
| 70 – 74 | 1 | * | | |
| 75 – 79 | | | | |
| 80 – 84 | | | | |
| 85 – 89 | 1 | * | | |
| 90 – 94 | 1 | * | | |
| 95 + | | | | |
| Total | 38 | $408 | 1 | * |

*suppressed to preserve confidentiality

# Appendix F

## Summary of Plan Provisions

This valuation is based on the plan provisions in effect on July 1, 2011. It is not intended as a complete description of the Plan. Since the previous valuation, the Plan has been amended.

**Eligibility for membership**

Members who joined the Plan between January 1, 2001 and January 14, 2003 have been transferred to the Contributory Pension Plan for Salaried Employees of McMaster University Including McMaster Divinity College 2000 ("Plan 2000") following the approval of the asset transfer by the Financial Services Commission of Ontario.

No new entrants are permitted after January 14, 2003.

**Retirement**

Normal retirement is on the 1st of July next following the member's 65th birthday. However, a member may normally elect to retire immediately on attaining age 65.

A member whose age plus pensionable service equals or exceeds 80 points may retire early and receive an unreduced pension and a bridge benefit. Effective July 1, 2006 the number of points required to retire early and receive an unreduced pension and a bridge benefit is amended for Faculty Members. For these members, the number of points required is as follows:

| Retirement Date | Points Required |
|---|---|
| July 1, 2008 to December 31, 2011 | 80 |
| January 1, 2012 to December 31, 2012 | 81 |
| January 1, 2013 to December 31, 2013 | 82 |
| January 1, 2014 to December 31, 2014 | 83 |
| January 1, 2015 to December 31, 2015 | 84 |
| January 1, 2016 forward | 85 |

A member may retire early with a reduced pension at any time during the 10-year period preceding his normal retirement date. The reduction will be 0.5% for each month by which actual retirement precedes age 65.

A member may postpone his actual retirement and commencement of pension (with University consent prior to December 12, 2006), but in any event his pension shall commence no later than the 1st of December of the year of attainment of age 71. He will continue to make contributions and his benefits under the Plan will continue to accrue until such postponed retirement date.

**Employee Contributions**

Each member is required to contribute 3.5% of his regular annual earnings up to the Year's Maximum Pensionable Earnings under the Canada Pension Plan and 5% of his regular annual earnings in excess of the Year's Maximum Pensionable Earnings. Effective at the dates and for the periods shown in the table below member required contribution rates for specific member groups as follows:

| Contribution Rate below/above YMPE | Faculty Members |
| --- | --- |
| 4.25% / 5.75% | July 1, 2006 to June 30, 2007 |
| 5.0% / 6.5% | July 1, 2007 to July 1, 2011 |
| 5.75% / 7.65% | July 2, 2011 to June 30, 2012 |
| 6.5% / 8.75% | July 1, 2012 forward |

| Contribution Rate below/above YMPE | Non Faculty Members |
| --- | --- |
| 3.5% / 5.0% | July 1, 2006 to June 30, 2009 |
| 5.5% / 7.0% | July 1, 2009 forward |

Effective July 1, 1997, member required contributions will be limited to the lesser of:

(a) the maximum amount permitted under the Income Tax Act in that calendar year; and

(b) 250% of the maximum annual pension payable under the Plan.

Effective July 1, 2006, member required contributions will be limited to the lesser of:

(a) the maximum amount permitted under the Income Tax Act in that year; and

(b) the contribution arising when the applicable employee contribution rate is applied to the Maximum Annual Salary under the Plan.

The Maximum Annual Salary is the salary rate that produces an annual pension amount equal to the maximum pension limit under the *Income Tax Act* for that year. The Maximum Annual Salary for 2011 is $142,101.

| **Pension Benefits** | The amount of annual pension payable to a member at his unreduced retirement age will be:<br>(a) 1.4% of Best Average Salary up to the Average Year's Maximum Pensionable Earnings times years of pensionable service, plus<br>(b) 2.0% of Best Average Salary in excess of the Average Year's Maximum Pensionable Earnings times years of pensionable service.<br>Best Average Salary means the annualized average of the 48 highest months of earnings while a Plan participant. Average Year's Maximum Pensionable Earnings means the pro-rated average Yearly Maximum Pensionable Earnings, in the same 48 months as are used to calculate Best Average Salary.<br>Pensions in payment will be increased from January 1st each year on a pro-rated basis (using the number of months the pensioner has been retired in the twelve months) by the excess over 4.5% of the average annual rate of return earned on the assets of the Plan over the previous five Plan Years, subject to a maximum of that year's rate of increase in the Consumer Price Index. Effective July 1, 1997, if there is any year where the percentage calculated under the excess interest formula exceeds the rate of increase in the Consumer Price Index, the excess will be used to provide a supplementary increase to the pensions in pay for which the annual pension increase in any of the three previous years was based on the excess interest formula, provided that the supplementary increase will be limited to 100% of CPI increases in each of the three preceding years.<br>In addition, members on LTD will have their salary adjusted each July 1st by the percentage increase applied to pensions in payment. This increase will be applied from the later of July 1, 1990 or the July 1st following disability. |
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| **Bridge Benefits** | Faculty members who first attain 80 points between July 1, 1996 and December 31, 1996 and who elect to retire on December 31, 1996, will receive a bridge benefit equal to the greater of $7,500 or $249.29 per year of credited service. The bridge benefit is payable from the member's early retirement date and ceases at age 65 or death, if earlier.<br><br>Faculty members who first attain 80 points prior to July 1, 1996 and who elect to retire between July 1, 1996 and June 30, 1997 or who first attain 80 points between July 1, 1996 and December 31, 1996 and who elect to retire between January 1, 1997 and June 30, 1997, will receive a bridge benefit equal to $249.29 per year of credited service. The bridge benefit is payable from the member's early retirement date and ceases at age 65 or death if earlier.<br><br>Staff members who retire at the request of the University between June 30, 1996 and December 31, 1996 and who have attained 80 points will receive a bridge benefit equal to $249.29 per year of credited service. The bridge benefit is payable from the member's early retirement date and ceases at age 65 or death, if earlier.<br><br>Effective July 1, 1997, members who retire early and have attained 80 points will receive a bridge benefit equal to $19.00 per month per year of credited service accrued to June 30, 1996 to a maximum of 20 years of service. The bridge benefit is payable from the later of the member's early retirement date and age 60 and ceases payment on attainment of age 65 or death, if earlier. |
| **Minimum Benefits** | If the member's total Required Contributions plus net interest are greater than 50% of the commuted value of a member's retirement and bridge pensions, the excess amount will be refunded to the member as a lump sum payment. In addition, the member will receive a refund of his voluntary contributions with interest, if any. |
| **Maximum Benefits** | The total annual pension payable from the Plan upon retirement, death or termination of employment cannot exceed the member's pensionable service multiplied by the lesser of:<br><br>(a) $2,552.22 or such other maximum prescribed for this purpose under the Income tax Act; and<br><br>(b) 2.0% of the average of the best three consecutive years of regular annual salary. |

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| **Survivor Benefits** | **Death Before Retirement:**<br>On the death of a member prior to retirement, his beneficiary or estate is entitled to receive a death benefit equal to his required contributions accrued to December 31, 1986 accumulated with net interest on the fund, and his beneficiary or estate shall receive the commuted value of the member's pension accrued after December 31, 1986, plus any required contributions made after December 31, 1986, accumulated with net interest on the fund, in excess of 50% of the commuted value.<br>In addition, his beneficiary or estate will receive a refund of his voluntary contributions with interest, if any.<br>**Death After Retirement:**<br>The benefit is payable for life, but guaranteed for seven years in any event. In the case of a member with a spouse, 50% of the benefit is continued to the spouse for life and at least the remainder of the guaranteed seven years' payments will be made. There is no required adjustment in respect of this surviving spouse's benefit.<br>Prior to July 1, 1997, the normal form of benefit was as described above with a five-year guarantee in place of the seven-year guarantee.<br>Alternative forms of pension are available in actuarial equivalent amounts and for members who have a spouse and who retire after December 31, 1987, the automatic form of pension will be an actuarially reduced benefit which continues 60% of the pension to a surviving spouse for life. |
| **Termination Benefits** | If a Member terminates employment prior to retirement, he may elect to receive one of the following:<br>a) A refund of his required contributions, with Net Interest on the Fund.<br>b) A transfer of the greater of twice his Required Contributions plus Net Interest and the commuted value of his deferred pension to another locked-in registered pension vehicle.<br>c) A deferred pension, payable at Normal Retirement Date, equal to the pension earned to the date of termination.<br>A Member who has met the minimum locking-in criteria under the *Pension Benefits Act of Ontario*, determined separately for service and benefits before and after January 1, 1987, may elect only (b) or (c). Such member may, however, receive a return of Required Contributions with Net Interest prior to January 1, 1965 subject to a 5% withdrawal charge.<br>In addition, a member is entitled to a refund of the excess of his Required Contributions plus Net Interest over 50% of the commuted value of the deferred pension described in (c) above. The excess is measured separately for required contributions with interest and pension benefits accrued before and after January 1, 1987.<br>In addition, a member is entitled to a refund of his voluntary contributions with Net Interest, if any. |

# Appendix G

## Employer Certification

With respect to the Report on the Actuarial Valuation for Funding Purposes as at July 1, 2011, of The Contributory Pension Plan for Salaried Employees of McMaster University Including McMaster Divinity College, I hereby certify that, to the best of my knowledge and belief:

- the valuation reflects the terms of the University's engagement with the actuary, particularly the requirement to include a margin of 0.40% in the discount rate used to perform the going concern valuation,
- the valuation reflects the University's decisions in regards to determining the solvency funding requirements,
- a copy of the official plan documents and of all amendments made up to July 1, 2011, were provided to the actuary and is reflected appropriately in the summary of plan provisions contained herein,
- the asset information summarised in Appendix B is reflective of the Plan's assets,
- the membership data provided to the actuary included a complete and accurate description of every person who is entitled to benefits under the terms of the Plan for service up to July 1, 2011, and
- all events subsequent to July 1, 2011 that may have an impact on the Plan have been communicated to the actuary.

March 8, 2012

Date

Signed

Roger Couldrey

Name

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