

Office of the Chief Actuary

Bureau du surintendant des institutions financières Canada

Bureau de l'actuaire en chef

# **ACTUARIAL REPORT**

on the Pension Plan for the

## FEDERALLY APPOINTED JUDGES

as at 31 March 2013



### Office of the Chief Actuary

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Cat. No. IN3-16/7-2013 ISSN 2292-1281

### Pension Plan for the FEDERALLY APPOINTED JUDGES

as at 31 March 2013



18 December 2013

The Honourable Tony Clement, P.C., M.P. President of the Treasury Board Ottawa, Canada K1A 0R5

### Dear President:

Pursuant to section 6 of the *Public Pensions Reporting Act*, I am pleased to submit this report on the actuarial review as at 31 March 2013 of the pension plan established under the *Judges Act*.

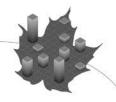
Yours sincerely,

Jean-Claude Ménard, F.S.A., F.C.I.A.

Jean-Claude Menard

Chief Actuary





### TABLE OF CONTENTS

		$\mathbf{P}_{i}$	age
I.	Execu A. B. C.	Purpose of the Report	7 7
II.	Projec	eted Benefits and Contributions	8
III.	Actua A. B. C.	rial Review of Pension Plan	. 10 . 10
IV.	Actuari	ial Opinion	. 13
		APPENDICES	
App	oendix 1	1 – Summary of Plan Provisions	. 14
App	endix 2	2 – Supplementary Retirement Benefits Account	. 19
App	endix 3	3 – Membership Data	. 20
App	oendix 4	4 – Methodology	. 22
App	endix 5	5 – Economic Assumptions	. 24
App	oendix 6	6 – Demographic Assumptions	. 26
App	oendix 7	7 – Detailed Information on Membership Data	. 31
App	endix 8	8 – Pensioner Mortality Rates for Division of Pension	. 34
App	endix 9	9 – Acknowledgements	. 35

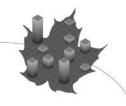


## Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### **TABLES**

		Page
Table 1	Projected CRF Benefits and Contributions	8
Table 2	SRB Account Contributions	
Table 3	Account and Actuarial Liabilities	10
Table 4	Projection of Current Service Costs	10
Table 5	Reconciliation of Results	
Table 6	Experience Gains and Losses	12
Table 7	Revision of Valuation Assumptions	12
Table 8	Reconciliation of Balances in the SRB Account	
Table 9	Summary of Membership Data	20
Table 10	Reconciliation of Membership	21
Table 11	Reconciliation of Judges	21
Table 12	Reconciliation of Retirement Pensioners	21
Table 13	Reconciliation of Disability Pensioners	21
Table 14	Summary of Economic Assumptions	24
Table 15	Rates of Pensionable Disability	
Table 16	Rates of Pensionable Retirement	27
Table 17	Rates of Mortality	27
Table 18	Mortality Improvement Factors	
Table 19	Life Expectancy of Judges	
Table 20	Assumptions for Survivor Benefits	
Table 21	Number of Male Judges	
Table 22	Number of Female Judges	31
Table 23	Male Pensioners	
Table 24	Female Pensioners	
Table 25	Eligible Survivors	
Table 26	Pensioner Mortality Rates for Division of Pension	

as at 31 March 2013



### I. Executive Summary

This actuarial report on the pension plan for the Federally Appointed Judges, established under the *Judges Act*, was made as at 31 March 2013 pursuant to the *Public Pensions Reporting Act* (PPRA). The plan is financed through the Consolidated Revenue Fund (CRF) on a pay-as-you-go basis rather than being financed on a funding basis¹ as are the pension fund accounts in other major pension plans sponsored by the Federal Government. The previous review was made as at 31 March 2010. The date of the next review is scheduled to occur no later than 31 March 2016.

### A. Purpose of the Report

The purpose of this actuarial report is to show estimates as at the valuation date of plan benefits and contributions in accordance with the financing arrangement in effect.

As well, the PPRA requires that a cost certificate be prepared showing the estimated cost of benefits in respect of service. Accordingly, this report shows theoretical estimates of the liabilities and projected current service costs.

### **B.** Changes since the Last Valuation

The previous valuation report was based on the plan provisions as they stood as at 31 March 2010. There have been no changes to the plan provisions since the previous valuation. This valuation report is based on the plan provisions shown in Appendix 1.

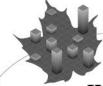
The methodology and most of the assumptions were revised for this valuation. These changes are discussed in Appendices 4, 5 and 6.

### C. Main Findings

- The plan benefits are estimated to be \$126.1 million and the judges' contributions are estimated to be \$17.3 million in the 2014 plan year<sup>2</sup>. In accordance with the financing agreement in effect, the government cost is estimated to be \$108.8 million, which corresponds to the difference between the plan benefits and the judges contributions for plan year 2014. Plan benefits are estimated to be \$131.9 million in plan year 2015 and \$139.2 million in plan year 2016.
- Based on the data, methodology and assumptions described in this report, if the plan cost would be valued on an accrual basis the current service cost would be 37.8% of payroll for plan year 2014, 37.4% for plan year 2015 and 37.2% for plan year 2016. The actuarial liability would be \$2,619 million as at 31 March 2013.

A pension plan is said to be *funded* if the contributions are made well in advance of the benefit payments they are intended to cover. A funded pension plan has a funding vehicle, i.e. a pension fund is established to earn investment returns.

Any reference to a given *plan year* in this report should be taken as the 12-month period ending 31 March of the given year.



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### **II. Projected Benefits and Contributions**

The government finances the plan through the Consolidated Revenue Fund (CRF) on a pay-as-you-go basis as there is no fund to accept contributions or pay the plan benefits other than the minor Supplementary Retirement Benefits (SRB) Account. The prescribed contributions¹ credited to the SRB Account would normally finance a material portion of the cost of the benefit indexation provision but in practice are effectively locked in the Account by a legislative anomaly². Judges contribute 1 % of salary to the SRB Account and contribute 6% of salary to the CRF if not eligible for an immediate (unreduced) annuity. In practice, all judges' contributions including their prescribed contribution to the SRB Account are made to the CRF and all benefits are paid from the CRF.

The following table shows the projected benefits of the plan with the corresponding judges' contributions to the CRF (including the judges recorded contributions to the SRB Account).

Table 1 Projected CRF Benefits and Contributions

Plan Year	Benefits (\$ millions)	Judges Contributions (\$ millions)	Net CRF Cost (\$ millions)	Benefits (% of payroll)	Judges Contributions (% of payroll)	Net CRF Cost (% of payroll)
	(A)	(B)	(A - B)	(70 of payron)	(70 or payron)	(70 or payron)
2014	126.1	17.3	108.8	38.4%	5.3%	33.1%
2015	131.9	17.6	114.3	38.9%	5.2%	33.7%
2016	139.2	18.2	121.0	39.6%	5.2%	34.4%
2017	146.6	19.0	127.6	40.2%	5.2%	35.0%
2018	154.4	19.7	134.7	40.8%	5.2%	35.6%
2023	202.7	25.1	177.6	43.6%	5.4%	38.2%
2028	271.5	33.2	238.3	47.3%	5.8%	41.5%

The following table shows the projected judges' contributions and the corresponding government matching contributions to be recorded to the SRB Account.

**Table 2 SRB Account Contributions** 

Plan Year	Judges (\$ millions)	Government (\$ millions)	Total (\$ millions)
1 cai	(\$ IIIIIIOIIs)	(\$ IIIIIIOIIS)	(\$ IIIIIIOIIS)
2014	3.3	3.3	6.6
2015	3.4	3.4	6.8
2016	3.5	3.5	7.0
2017	3.6	3.6	7.2
2018	3.8	3.8	7.6
2023	4.6	4.6	9.2
2028	5.7	5.7	11.4

Judges contribute 1% of payroll and the government matches those contributions.

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Practically the only events to trigger a debit from the Account are the death (with no survivor) or nonvested termination of a judge. Moreover, when such a death or termination occurs, only the judge's own accumulated contributions are returned, leaving the government's matching contributions in the Account.

### Pension Plan for the FEDERALLY APPOINTED JUDGES

s at 31 March 2013



### III. Actuarial Review of Pension Plan

The PPRA requires that a cost certificate be prepared showing the estimated cost of benefits in respect of service for the major pension plans sponsored by the Federal Government as well as for the pension plan for the Federally Appointed Judges. However, the judges' plan differs significantly from the major public sector pension plans as it is financed in practice on a pay-as you-go basis and the plan benefits generally do not vary by length of service.

To conduct this actuarial review on an accrual basis, it was necessary to express each judge's projected benefit in unit credit terms, for each type of benefit. The projected accrued benefit actuarial cost method (used in the actuarial valuations of the major federal public sector pension plans) was used for valuation purposes. The method is fully described in Appendix 4. Based on this methodology, the actuarial liability is deemed to be the government's obligation in respect of all service rendered as at the valuation date and the current service cost is deemed to be the future government's obligation in regards of all future payable benefits considered to accrue in respect of a given year. The valuation discount rate is deemed to be the government's borrowing cost. In the previous valuation, it was assumed that a pension fund would be established and credited with the plan's notional assets and current service cost contributions that would be invested in long-term government bonds.

The following actuarial liabilities and current service costs required by the *Public Pensions Reporting Act* are purely hypothetical. They were computed using the data described in Appendix 3, the methodology described in Appendix 4, and the assumptions described in Appendices 5 and 6.



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### A. Account and Actuarial Liabilities

**Table 3 Account and Actuarial Liabilities** (\$ millions)

	As at <u>31 March 2013</u>	As at 31 March 2010
Balance in SRB Account	187	159
Actuarial Liabilities		
For benefits accrued by, and in respect of, judges	1,314	1,152
For benefits payable to, and in respect of:		
• Retirement pensioners	1,006	800
Disability pensioners	77	73
Surviving dependants	222	200
Total Liabilities	2,619	2,225

### **B.** Cost Certificate

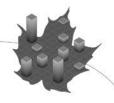
**Table 4 Projection of Current Service Costs** 

Plan	Judges Contributions	Government Current Service Cost	Total Curren	t Service Cost
Year	(\$ millions)	(\$ millions)	(\$ millions)	(% of payroll)
2014	17	107	124	37.8%
2015	18	109	127	37.4%
2016	18	113	131	37.2%
2017	19	117	136	37.2%
2018	20	121	141	37.2%
2023	25	151	176	37.9%
2028	33	187	220	38.4%

### C. Reconciliation of Results with Previous Report

This section reconciles the actuarial liability and current service cost with the corresponding items of the previous valuation. The items shown in the following table are explained herein afterward.

as at 31 March 2013



**Table 5 Reconciliation of Results** 

	Actuarial Liability (\$ millions)	Current Service Cost (% of payroll)
As at 31 March 2010	2,225	39.4
Data corrections	(1)	-
Expected Current Service Costs	367	
Expected Benefit Payments	(343)	
Interest	317	
Expected current service cost change		0.1
Expected as at 31 March 2013	2,565	39.5
Experience gains and losses	7	0.1
Revision of valuation assumptions	47	(1.8)
As at 31 March 2013	2,619	37.8

#### 1. Data corrections

The correction of data, upon which the 2010 report was based, resulted in a decrease of the actuarial liability of \$1 million.

### 2. Expected Current Service Costs

In accordance with the previous Cost Certificate, the expected current service costs of \$118, \$122 and \$127 million for the intervaluation period increases the actuarial liability by \$367 million.

### 3. Expected Benefit Payments

In accordance with the previous valuation report, the expected benefit payments of \$108, \$114 and \$121 million for the intervaluation period decreases the actuarial liability by \$343 million.

#### 4. Interest

The net interest to 31 March 2013 on the corrected actuarial liability as at 31 March 2010, the expected current service costs and the expected benefit payments amounted to \$317 million, based on the interest rates assumed in the previous report for the three-year intervaluation period.

### 5. Expected Current Service Cost Change

The gradual increase in the current service cost projected in the previous report (for plan years 2011 to 2014) mainly reflected a partial transition from the current to the ultimate economic assumptions and, to a minor degree, the expected changes in the demographic characteristics of the judges' population.

### 6. Experience Gains and Losses

Since the previous valuation, experience gains or losses have increased the actuarial liability by \$7 million and increased the current service cost by 0.1% of payroll. The main items are shown in the following table.



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

**Table 6 Experience Gains and Losses** 

	Impact on Actuarial Liability (\$ millions)	Impact on Current Service Cost (% of payroll)
Pensionable disabilities	(22)	-
Mortality	13	(0.1)
Pensionable retirements	6	-
Proportion Married	(4)	-
Salary increases	4	-
New entrants	2	0.2
Nonvested terminations	2	-
Age of spouse	1	-
Pension indexing	1	-
Miscellaneous	4	-
Net impact	7	0.1

### 7. Revision of Valuation Assumptions

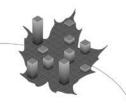
Actuarial assumptions were revised based on economic trends and demographic experience as described in Appendices 5 and 6. The revision of the assumptions increased the actuarial liability by \$47 million and decreased the current service cost by 1.8% of payroll.

**Table 7 Revision of Valuation Assumptions** 

	Impact on Actuarial Liability (\$ millions)	Impact on Current Service Cost (% of payroll)
Pensionable disabilities	(27)	(2.2)
Mortality projection factors	27	0.5
Mortality of survivors	27	0.3
Economic assumptions	11	(0.8)
Mortality of healthy members	5	0.1
Mortality of disabled members	4	0.2
New entrants and nonvested terminations	-	0.1
Net impact of revision	47	(1.8)

### Pension Plan for the FEDERALLY APPOINTED JUDGES

as at 31 March 2013



### IV. Actuarial Opinion

In our opinion, considering that this report was prepared pursuant to the *Public Pensions Reporting Act* which requires that the plan be valued on an accrual basis, and that the purpose of this actuarial report is to show estimates of plan contributions in accordance with the financing arrangement (pay-as-you-go basis) in effect,

- the data on which the valuation is based are sufficient and reliable for the purposes of the valuation;
- the assumptions are, in aggregate, appropriate for the purposes of the valuation;
- the methods employed in the valuation are appropriate for the purposes of the valuation; and
- this report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada.

In particular, this report was prepared in accordance with the Standards of Practice - General Standards and the Practice – Specific Standards for Pension Plans published by the Canadian Institute of Actuaries.

To the best of our knowledge, there were no subsequent events between the valuation date and the date of this report.

Jean-Claude Ménard, F.S.A., F.C.I.A.

Jean-Claude Menard

Chief Actuary

Mario Mercier, F.S.A., F.C.I.A.

Actuary

Michel Rapin, F.S.A., F.C.I.A.

Michel Ropin

Senior Actuary

Ottawa, Canada 18 December 2013



### Appendix 1 – Summary of Plan Provisions

This summary describes the provisions in force as at 31 March 2013 of the pension plan established under the *Judges Act* ("Act") and modified under the *Supplementary Retirement Benefits Act*. The first federal statute dealing with pensions for judges was enacted in 1868, with many subsequent amendments. However, the Act shall prevail if there is a discrepancy between the summary and the Act.

### A. Membership

Membership in the plan is compulsory for all judges appointed to federal or provincial courts by the Government of Canada.

#### **B.** Contributions

### 1. Judges

Judges contribute 1% of salary to the Supplementary Retirement Benefits (SRB) Account, and if not eligible for a full annuity, 6% of salary to the CRF.

#### 2. Government

The government deemed contributions are the excess of the plan benefits paid from the CRF over the contributions by judges thereto. Government contributions of 1% of salary are also credited to the SRB Account.

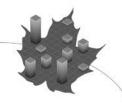
### **C.** Summary Description of Benefits

The judges' pension plan mainly aims at providing an earnings-related lifetime retirement pension to eligible members of the judiciary. The plan also provides pensions to judges in case of disability and to their spouses and children in case of death.

All annuities are indexed annually to the Consumer Price Index (CPI). They are payable in equal monthly instalments in arrears until the end of the month in which the pensioner or the survivor dies. If applicable, either a survivor annuity (Note 9) or a residual benefit (Note 10) is payable upon the death of the pensioner, and a residual benefit may be payable to the estate upon the death of the last survivor.

### Pension Plan for the **FEDERALLY APPOINTED JUDGES**

as at 31 March 2013



The explanatory notes referred to in this summary description are given in section D.

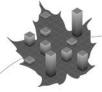
### 1. Judges

Type of Termination	Benefit
Normal pensionable retirement (Note 1)	Immediate annuity, reduced pro-rata if under 10 years of service at normal retirement age
Early pensionable retirement (Note 2)	Deferred annuity, or Reduced immediate annuity
Pensionable disability	Immediate annuity
Nonvested termination (Note 4)	Return of contributions (Note 5)
Death leaving no eligible survivor(s) (Notes 6 and 7)	Return of contributions, and Lump sum (Note 8)
Death leaving eligible survivor(s)	Annuity to eligible survivor(s) (Note 9), and Lump sum

### 2. Pensioners

Type of Termination	Benefit
Death leaving no eligible survivor(s)	Residual benefit (Note 10), if applicable
Death leaving eligible survivor(s)	Annuity to eligible survivor(s)

Appendix 1 | 15



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### D. Explanatory Notes

### 1. Normal Pensionable Retirement

Normal pensionable retirement means ceasing to hold judicial office on reaching normal retirement age of 75 years (70 years for certain judges appointed prior to 1 March 1987) or by satisfying the requirement that the sum of age and service (minimum of 15 years) be at least 80 years or, in respect only of a judge of the Supreme Court of Canada, that service be ten years or more.

An immediate annuity is payable upon retirement, except when a judge who has attained the normal retirement age has held judicial office for less than 10 years, in which case a pro-rated portion of the immediate annuity is payable.

### **Immediate Annuity**

*Immediate annuity* means an annuity that becomes payable immediately upon a normal pensionable retirement or a disability retirement. The initial annual amount of the annuity is equal to two-thirds of the judge's annual salary at the time of ceasing to hold office, or in the case of a supernumerary judge of the then current salary applicable to a higher judicial office, if such higher office was formerly held.

### 2. Early Pensionable Retirement

Early pensionable retirement means ceasing to hold judicial office and becoming entitled to a deferred annuity or a reduced immediate annuity before normal pensionable retirement by satisfying the requirement that age be at least 55 years with service of 10 years or more.

### i) Deferred Annuity

*Deferred annuity* means an annuity that becomes payable to a former judge who reaches age 60.

The amount of the deferred annuity is calculated by multiplying two thirds of the amount of the salary annexed to the judge's office at the time of the election multiplied by a fraction of which

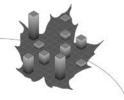
- (a) the numerator is the number of years, to the nearest one tenth of a year, during which the judge has continued in judicial office, and
- (b) the denominator is the number of years, to the nearest one tenth of a year, during which the judge would have been required to continue in judicial office in order to be eligible for an unreduced pension.

### ii) Reduced Immediate Annuity

Reduced immediate annuity means a reduced annuity that becomes payable immediately upon early pensionable retirement. The initial annual amount of the annuity is equal to the amount of deferred annuity but is reduced by 5% for every year that the annuity commences in advance of age 60.

### Pension Plan for the FEDERALLY APPOINTED JUDGES

as at 31 March 2013



#### 3. Service

Service means holding the office of judge of a superior or county court or of the Tax Court of Canada, and includes the office of a person who is a deputy judge by virtue of section 60 of the Federal Court Act. Superior court is interpreted to include the Supreme Court of Canada; county court includes any district court.

#### 4. Nonvested Terminations

*Nonvested termination* means ceasing to hold judicial office under any circumstance other than pensionable retirement, pensionable disability, or death.

#### 5. Return of Contributions

Return of contributions means the payment of an amount equal to the accumulated contributions paid into the plan by a judge. Interest is credited at the specified rate each 31 December on the accumulated contributions as at the preceding 31 December. The specified rate is the one applied under the *Income Tax Act* in respect of refunds of overpayments of tax.

### 6. Eligible Surviving Spouse

A person who was married to the judge at the time of the judge's death or who establishes that he or she was cohabiting with the judge in a conjugal relationship at the time of the judge's death and had so cohabited for a period of at least one year is eligible for a survivor annuity when the judge dies. An annuity may also be granted to a survivor who became a spouse or began to cohabit with the judge in a conjugal relationship after the judge ceased to hold office if the former judge elects to reduce his annuity so that an annuity may be paid to that person.

### 7. Eligible Surviving Children

*Eligible surviving children* of a judge or pensioner include each child under age 18 and any child under age 25 who is in full-time attendance at a school or university, having been in attendance substantially without interruption since reaching 18 or, if more recent, since the death of the judge or pensioner.

### 8. Lump Sum

If a judge dies, a lump sum equal to one-sixth of the yearly salary of the judge is paid to the surviving spouse or, if there is no survivor, to the estate or succession of the judge.

### 9. Annuities to Eligible Survivor(s)

Annuities to the eligible surviving spouse and children of a judge or pensioner become payable immediately upon the death of that judge (pensioner). The annuity to the eligible surviving spouse is equal to one-third of the annual salary of the judge or to one-half of the pensioner's annuity, as applicable at the time of death. An eligible child receives an annuity equal to 20% of the surviving spouse's annuity, subject to reduction if there are more than four eligible children in the same family. The annuity otherwise payable to an eligible child is doubled if that child is an orphan.

A pensioner can elect an enhanced surviving spouse benefit with a maximum of 75% of his pension as actuarially reduced to fund the enhancement.

Appendix 1 | 17



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

#### 10. Residual Benefit

Residual benefit is equal to the amount, if any, by which the return of contributions exceeds the aggregate of all amounts paid to and in respect of a pensioner until the death of the pensioner, or, if applicable, until the subsequent death or loss of eligibility of the last survivor entitled to an annuity.

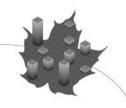
#### 11. Indexation

All annuities payable under the plan are adjusted every January to the extent warranted by the increase, as at 30 September of the previous year, in the 12-month average CPI. If the indicated adjustment is negative, annuities are not decreased for that year; however, the next following positive adjustment is diminished accordingly. Moreover, the first annual adjustment is prorated to reflect the number of whole months since the date of termination of service.

### 12. Division of Pension with Former Spouse

Upon the breakdown of a spousal union (including common-law), a lump sum could be transferred by court order or by mutual consent to the credit of the former spouse of a judge or pensioner. The maximum transferable amount would be half of the actuarial value, calculated as at the transfer date, of the retirement pension deemed accrued by the judge or pensioner during the period of cohabitation.

as at 31 March 2013



### **Appendix 2 – Supplementary Retirement Benefits Account**

The SRB Account was established by the government to track its pension benefit obligation with respect to the indexation provision of the plan. Judges contribute 1% of payroll and the government matches those contributions. These credits would normally track a material portion of the cost of the benefit indexation provision but in practice are effectively locked in the Account by a legislative anomaly. Practically the only events to trigger a debit from the Account are the death (with no survivor) or nonvested termination of a judge. Moreover, when such a death or termination occurs, only the judge's own accumulated contributions are returned, leaving the government's matching contributions in the Account. In practice, all judges contributions are made to the CRF and all benefits under the plan are borne by the CRF when they become due.

The SRB Account, which forms part of the Public Accounts of Canada, tracks individual balances held in respect of judges. Each such balance is the cumulative excess of the prescribed interest credits and SRB contributions over the benefits charged to the SRB Account in respect of the given judge. No formal debt instrument is issued to the Account by the government in recognition of the amounts therein. Interest is credited quarterly on the minimum monthly balances in the SRB Account at the monthly rate corresponding to the effective annual yield, reduced by 0.125%, available at the end of the month on 5-year Government of Canada bonds.

**Table 8** Reconciliation of Balances in the SRB Account (\$ Millions)

Plan Year	<u>2011</u>	<u>2012</u>	2013
Account Opening Balance	158.7	168.6	178.1
Judges contributions	3.0	3.1	3.2
Government contributions	3.0	3.1	3.2
Interest credits	3.9	3.3	2.4
Account Closing Balance	168.6	178.1	186.9

The rates of return on the Account in plan years 2011, 2012 and 2013 were 2.4%, 1.9% and 1.3% respectively. They were calculated based on the assumption that contributions were made in the middle of the year.

Appendix 2



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### Appendix 3 – Membership Data

### A. Sources and Validation of Membership Data

The Office of the Commissioner of Federal Judicial Affairs provided relevant valuation input data on judges and on the corresponding pensioners and survivors.

We performed certain tests of consistency with the data used in the previous valuation, with respect to membership reconciliation, basic information (date of birth, date of hire, date of termination, sex, etc.), salary levels, and pensions to survivors and pensioners. Based on the omissions and discrepancies identified by these and other tests, appropriate adjustments were made to the basic data after consulting with the data providers.

### **B.** Summary of Membership Data

A summary of the valuation data as at 31 March 2013 and the reconciliation of judges, pensioners, and survivors during the period from April 2010 to March 2013 inclusive are shown in this section. Relevant detailed statistics on judges, pensioners and survivors are shown in Appendix 7.

**Table 9** Summary of Membership Data

	As at 31 March 2013	As at 31 March 2010
Judges		
· Number	1,101	1,091
· Average Salary	\$289,500	\$268,600
· Average Age	61.6	60.9
· Average Service	11.5	11.2
Retirement Pensioners		
· Number	524	479
· Average Pension	\$177,200	\$160,400
· Average Age	79.1	79.2
Disability Pensioners		
· Number	41	44
· Average Pension	\$165,300	\$149,100
· Average Age	74.8	74.4
Surviving Spouses		
· Number	297	296
· Average Pension	\$78,400	\$72,300
· Average Age	81.0	80.0
Surviving Children		
· Number	6	9
· Average Pension	\$21,300	\$20,100

as at 31 March 2013

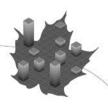


Table 10 Reconciliation of Membership

	Judges	Retirement Pensioners	Disability Pensioners	Surviving Spouses	Surviving Children
At 31 March 2010	1,091	479	44	296	9
Data updates		(3)		2	1
New entrants	148				
Pensionable retirements	(127)	127			
Pensionable disabilities	(5)		5		
Nonvested terminations	(1)				
New survivors				50	
Deaths	(5)	(79)	(8)	(51)	
Loss of eligibility					(4)
At 31 March 2013	1,101	524	41	297	6

**Table 11 Reconciliation of Judges** 

	Male	Female	Total
At 31 March 2010	742	349	1,091
New entrants	106	42	148
Pensionable retirements	(101)	(26)	(127)
Pensionable disabilities	(5)	-	(5)
Nonvested terminations	(1)	-	(1)
Deaths	(4)	(1)	(5)
At 31 March 2013	737	364	1,101

**Table 12** Reconciliation of Retirement Pensioners

	Male	Female	Total
At 31 March 2010	443	36	479
Data updates	(2)	(1)	(3)
New pensioners	101	26	127
Deaths	(78)	(1)	(79)
At 31 March 2013	464	60	524

 Table 13
 Reconciliation of Disability Pensioners

	Male	Female	Total
At 31 March 2010	33	11	44
New pensioners	5	-	5
Deaths	(7)	(1)	(8)
At 31 March 2013	31	10	41

Appendix 3 | 21



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### Appendix 4 – Methodology

#### A. Actuarial Cost Method

Although the plan provides benefits that do not vary by length of service, the projected accrued benefit actuarial cost method (also known as the projected unit credit) was used, as in the previous valuation, to compute current service costs and actuarial liabilities.

To allow use of the projected accrued benefit actuarial cost method, it was necessary to express each judge's projected benefit in unit credit terms, for each type of benefit. To do so, the benefit projected in respect of a given judge was considered to have accrued uniformly from the date of the judge's appointment to the commencement date of that benefit. For example, a retirement pension commencing at age 75 was deemed to accrue at the following rates, expressed as a percentage of salary throughout a judge's career.

### **Assumed Annual Accrual Rates**

Age at	Annual
Appointment	Accrual
40	1.9%
45	2.2
50	2.7
55	3.3
60	4.4
65	6.7

Consistent with this cost method, earnings are projected up to retirement using the assumed annual increases in average earnings.

### 1. Current Service Cost

Under the projected accrued benefit actuarial cost method, the current service cost, also called normal cost, computed in respect of a given year is the sum of the value, discounted in accordance with the actuarial assumptions, of all future payable benefits considered to accrue in respect of that year's service.

All other things being equal, the current service cost for the total population, expressed as a percentage of total payroll, can be expected to remain stable as long as the average age and service of the total population remains constant.

### 2. Actuarial Liability

The actuarial liability with respect to contributors corresponds to the value, discounted in accordance with the actuarial assumptions, of all future payable benefits accrued as at the valuation date in respect of all previous service. For pensioners and survivors, the actuarial liability corresponds to the value, discounted in accordance with the actuarial assumptions, of future payable benefits.

#### Pension Plan for the FEDERALLY APPOINTED JUDGES

s at 31 March 2013



### 3. Balancing Item

Under the projected accrued benefit actuarial cost method, a balancing item that corresponds to the difference between the assets and liabilities would normally be calculated to estimate the necessary adjustments. As the plan is financed on a pay-as-you-go basis, actuarial deficits and amortization payments are not required and hence not presented in this report.

### **B.** Assumed Discount Rates

The methodology to determine the assumed discount rates for valuation purposes was changed in this valuation. The government's obligation in respect of all service rendered (actuarial liability) as at the valuation date and future service government's obligations (current service costs) are discounted at the deemed government's cost of borrowing. In the previous valuation, hypothetical assets were deemed to be invested in long-term government bonds. The derived discount rates are described in Appendix 5.

### C. Membership Data

The membership data shown in Appendix 7 were provided as at 31 March 2013. Individual data on each member were used.

Appendix 4 23

Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### **Appendix 5 – Economic Assumptions**

A summary of the economic assumptions required for valuation purposes is shown in the following table. These values were derived from the key assumptions. Key and derived assumptions are explained herein afterward.

Table 14 Summary of Economic Assumptions<sup>1</sup>

	Inflation (%)		Employment Ear	rnings Increase (%)	Interest (%)
Plan Year	CPI Increase	Pension Indexing <sup>2</sup>	Industrial Aggregate	Judicial Salaries <sup>3</sup>	Valuation Rate
2014	1.5	0.9	2.7	2.6	2.7
2015	2.0	1.8	2.8	2.8	3.4
2016	2.0	2.0	2.9	2.9	4.1
2017	2.0	2.0	3.0	3.0	4.6
2018	2.0	2.0	3.1	3.1	5.0
2019	2.0	2.0	3.2	3.2	5.1
2020	2.1	2.0	3.3	3.3	5.2
2021	2.2	2.1	3.4	3.4	5.3
2022+	2.2	2.2	3.4	3.4	5.3

### A. Key Economic Assumptions

The following key economic assumptions are required for valuation purposes.

#### 1. Level of Inflation

Price increases, as measured by changes in the Consumer Price Index (CPI), tend to fluctuate from year to year. In 2012, the Bank of Canada and the Government renewed their commitment to keep inflation between 1% and 3% until the end of 2016. Therefore, a price increase rate of 2.0% is assumed for plan years 2015 to 2019. For plan years 2020 and 2021, the CPI is assumed to increase from 2.0% to 2.2% and to remain at 2.2% thereafter. The ultimate rate of 2.2% is 0.2% lower than the assumed rate in the previous valuation.

### 2. Average Canadian Wage Increase

The ultimate productivity rate (i.e. increase in average employment earnings in excess of inflation) was assumed at 1.2% per annum as in the previous valuation. Real increases in average earnings are assumed to rise from 0.8% in plan year 2015 to reach the ultimate 1.2% per annum in 2019.

### 3. Government Real<sup>4</sup> Cost of Borrowing

In the previous valuation, it was assumed that a pension fund would be established and credited with the plan's notional assets and that current service cost contributions would be invested in long-term government bonds.

Bold figures denote actual experience.

Assumed to be effective as at 1 January.

Assumed to be effective as at 1 April.

Note that all of the real rates referred to in this report are actually real differentials. This differs from the technical definition of a real rate of interest, which, in the case of the real cost of borrowing assumption, would be 3.03% (derived from 1.053/1.022).

### Pension Plan for the **FEDERALLY APPOINTED JUDGES**

as at 31 March 2013

For this valuation we recognized that the judges' plan differs significantly from the major public sector pension plans as it is financed in practice on a pay-as you-go basis. However, the *Public Pensions Reporting Act* requires that a cost certificate be prepared showing the estimated cost of benefits in respect of service for the major pension plans sponsored by the Federal Government as well as for the pension plan for the Federally Appointed Judges.

The government ultimate real cost of borrowing was assumed at 3.1% (the ultimate nominal rate being 5.3%). In the previous valuation, the hypothetical Pension Fund was assumed to be holding long-term government bonds and the ultimate real rate of return assumption was 2.8%. The government real cost of borrowing is assumed to rise from 1.2% in plan year 2014 to reach the ultimate rate of 3.1% per annum in 2019.

For the period ending December 2012, the following table was prepared based on the Canadian Institute of Actuaries Report on Canadian Economic Statistics 1924-2012.

Period of Years Ending December 2012	15	25	50
Level of Inflation	2.0%	2.2%	4.1%
Real Increases in Average Earnings	0.6%	0.4%	1.0%

### **B.** Derived Economic Assumptions

As the key assumptions were changed, it follows that all derived assumptions are also changed for this valuation.

### 1. Projected Valuation Discount Rates

These rates are required for the computation of present values of benefits to determine the plan's actuarial liabilities and current service costs and they are derived from the assumed future level of inflation and the expected future government's real cost of borrowing. The assumed rate of 2.7% per annum for plan year 2014 is expected to increase gradually to the ultimate rate of 5.3% per annum by plan year 2021. In the previous valuation, the hypothetical Pension Fund was assumed to be holding long-term government bonds and the ultimate projected yield was assumed to be 5.2%.

### 2. Judicial Salary Increase

The judicial salary increase is a key assumption in determining the estimated initial amount of annuity payable to a pensioner or survivor. Judicial salaries are expected to follow the same pattern of increase as the Industrial Aggregate (see foregoing discussion of average Canadian wage increase assumption) to which they are indexed, with a lag of a few months. As in previous valuations, a promotional salary increase scale was not included because elevation to a higher court or to such positions as Chief Justice or Associate Chief Justice occurs only rarely.

### 3. Increase in Pension Indexing Factor

The year's pension indexing factor is involved in the valuation process by virtue of its role in the pension inflation adjustments. It was derived by applying the indexation formula described in Note 11 of Appendix 1, which relates to the assumed CPI increases over successive 12-month periods ending on 30 September.

Appendix 5



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### **Appendix 6 – Demographic Assumptions**

Except where otherwise noted, all demographic assumptions were determined from the plan's own experience as was done in the past. Assumptions of the previous valuation were updated to reflect past experience to the extent that it was deemed credible.

#### A. New Entrants

The assumptions in respect of new entrants were changed from the previous valuation. The total number of judges is assumed to increase by 0.8% per annum (was 1% in the previous valuation) and it is assumed that there will be an equal number of male and female judges by 2035 (was 2027 in the previous valuation). The number of male judges is assumed to decrease by 0.5% per annum from 2014 to 2035 and the number of female judges is assumed to rise by 3% in plan year 2014, with smaller increases thereafter until the ultimate increase of 0.8% is first attained in 2035. By 2035, both the number of male and female judges is assumed to increase by 0.8 % per annum.

For each sex, the age distribution of the future new judges was based on that of the actual new judges in the April 2010 to March 2013 period. The initial salary of new judges was assumed to be \$295,500 for plan year 2014, with increases in future plan years in accordance with the assumption for judges' salary increases.

### **B.** Nonvested Termination

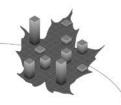
There was only one nonvested termination, during the three years ended 31 March 2013, which is 30% of the 3.4 expected. Rates of nonvested termination are changed. They are 3 per 1,000 judges for the first year, 2 per 1,000 judges for the second year and 1 per 1,000 judges up to 9 years on the bench. Nonvested terminations rates are assumed to be nil after 10 years on the bench. Over the first 4 years on the bench, rates of nonvested terminations are 50% lower than those used in the previous valuation.

### C. Disability Retirement

During the three years ended 31 March 2013, the 5 reported disabilities amounted to 30% of the 16.8 expected. The disability incidence rates for both males and females were changed significantly from the previous valuation; they are on average 33% of those used in the previous valuation.

**Table 15** Rates of Pensionable Disability (per 1,000 judges)

Age Last Birthday	Male	Female
40	0.2	0.4
50	0.7	1.0
60	2.0	3.1
70	6.4	10.1
74	10.3	16.1



#### **D.** Pensionable Retirement

During the three years ended 31 March 2013, the 127 reported pensionable retirements amounted to 105% of the 120.9 expected. Assumed pensionable retirement rates are unchanged from the previous valuation.

**Table 16** Rates of Pensionable Retirement (per 1,000 judges)

Age Last		Completed Years of Service										
Birthday	9-13	14	15	16	17	18	19	20	21	22	23	24+
55	5	5	5	5	5	5	5	5	5	5	150	150
60	5	5	5	5	5	110	130	10	10	20	20	20
65	5	60	30	30	40	40	50	50	50	50	60	60
70	5	120	40	80	80	80	80	80	80	80	80	80
74 <sup>1</sup>	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

### E. Mortality

Notwithstanding the relatively small size of the judges and former judges' population, advanced age at entry and expected retirement past age 70 were deemed to be selective criteria that will have an impact on the mortality of this population. Therefore, the plan's own experience was used, as in previous valuations, to determine the mortality assumption for judges. Mortality rates for male judges are not significantly changed from those projected in the previous valuation; mortality rates for female judges are on average 1% lower than those projected in the previous valuation.

Mortality rates for surviving spouses and disabled pensioners were updated for this valuation. They are the same as those from the most recent actuarial report (31 March 2011) on the pension plan for the Public Service of Canada applicable to plan year 2014. Given the size of the population of the pension plan for the Public Service of Canada, it was deemed to be a more appropriate model to determine the mortality assumptions for these groups. Mortality rates for surviving spouses are on average 10% lower than those projected in the previous valuation for plan year 2014. Mortality rates for disabled pensioners are on average 20% lower up to age 85 and on average 25% higher at advanced ages.

**Table 17 Rates of Mortality** For 2014 Plan Year (per 1,000 individuals)

Age Last	Judges (and Pensioners)		<u>Judges (and Pensioners)</u> <u>Disability Pensioners</u>			Pensioners	Surviving Spouses		
Birthday	Male	Female	Male	Female	Male	Female			
40	0.7	0.4	12.0	6.8	2.5	0.9			
50	1.8	1.3	15.0	8.8	4.3	2.5			
60	5.1	3.8	21.9	13.5	7.9	5.2			
70	15.0	10.4	39.3	23.3	19.8	12.4			
80	48.4	32.7	86.7	61.5	60.2	34.4			
90	140.9	106.6	192.5	165.9	152.6	108.6			
100	308.4	273.1	464.9	454.8	350.9	316.7			
110	500.0	500.0	500.0	500.0	500.0	500.0			

Retirement becomes compulsory on the 75<sup>th</sup> birthday.

Appendix 6



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

As shown in the 25<sup>th</sup> Actuarial Report on the Canada Pension Plan, life expectancy in Canada has been increasing constantly over the years. Mortality rates are reduced in the future in accordance with the same longevity improvement assumption used in the 25<sup>th</sup> Actuarial Report on the Canada Pension Plan. For both males and females, the longevity improvement factors are higher than those used in the previous valuation except at advanced ages. Factors shown in the 25<sup>th</sup> Actuarial Report of the Canada Pension Plan are based on calendar years. These factors have been interpolated to obtained plan year longevity improvement factors.

The ultimate longevity improvement factors for plan years 2031 and thereafter were established by analysing the trend by age and sex of the Canadian experience over the period 1921 to 2006. Improvement factors for plan year 2012 are assumed to be those experienced on average over the 15-year period 1991 to 2006. After plan year 2012, the factors are assumed to reduce gradually to their ultimate level by plan year 2031.

**Table 18** Mortality Improvement Factors

_	Initial and	l Ultimate Plan Ye	ar Mortality Redu	ctions <sup>1</sup> (%)
Age Last	M	ale	Fe	male
Birthday	2014	2031+	2014	2031+
40	1.97	0.80	1.26	0.80
50	1.72	0.80	1.21	0.80
60	2.14	0.80	1.31	0.80
70	2.31	0.80	1.39	0.80
80	1.87	0.70	1.37	0.70
90	1.08	0.44	0.66	0.44
100	0.34	0.30	0.13	0.30
110+	0.05	0.30	0.05	0.30

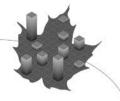
The following table shows the calculated life expectancy for judges based on the mortality assumptions described in this section.

**Table 19 Life Expectancy of Judges** (Years)

	As at 31 N	March 2013	As at 31 N	March 2030
Age	Male	Female	Male	Female
60	26.4	28.7	27.4	29.7
65	21.7	24.0	22.8	24.9
70	17.3	19.5	18.3	20.4
75	13.3	15.3	14.2	16.1
80	9.8	11.5	10.6	12.2
85	7.0	8.3	7.6	8.8
90	4.8	5.9	5.2	6.2

The mortality rate reduction applicable during any plan year within the 17-year select period is found by linear interpolation between the figures for plan years 2014 and 2031.

as at 31 March 2013



### F. Family Composition

Assumptions for the proportion of members leaving, upon death, a spouse eligible for a survivor pension and the age of the survivor spouse are unchanged from the previous valuation. The number of new widows and widowers (50) was 88% of expected during the three years ended 31 March 2013; their age was as expected.

Assumptions with respect to the number of eligible children and their age are unchanged from the previous valuation. As in the previous valuation, to determine the value of pensions payable to eligible children, the rates of pension termination were assumed to be zero prior to age 17 and 15% per annum thereafter until expiry of the benefit on the 25<sup>th</sup> birthday.

Assumptions for survivor benefits in respect of judges or pensioners are summarized in the following table.

**Table 20 Assumptions for Survivor Benefits** 

	Male					Fema	le	
Age Last Birthday	Eligible	Spouse Age	Eligible	e Children	Eligible Surviving	Spouse Age	Eligible	Children
at Death	Surviving Spouse	Difference <sup>1</sup>	Number	Avg. Age	Spouse	Difference <sup>2</sup>	Number	Avg. Age
40	0.90	(2)	3.07	12	0.90	3	1.54	14
50	0.95	(3)	1.98	18	0.90	3	0.74	20
60	0.98	(3)	0.47	20	0.83	3	0.07	22
70	0.88	(3)	0.03	21	0.61	2	-	-
80	0.74	(5)	-	-	0.35	0	-	-
90	0.47	(6)	-	-	0.14	(2)	-	-
100	0.17	(9)	-	-	0.02	(7)	-	

### **Other Assumptions**

#### 1. Reversals and Recoveries

It is assumed that no pensioners will return to the bench.

#### 2. Minimum Death Benefit

This valuation does not take into account the minimum death benefit in respect of deaths occurring after retirement. The resulting understatement of accrued liability and current service cost is immaterial because relatively few pensioners in the early years of retirement die without leaving an eligible survivor.

### 3. Special Retirement Provisions

Plan provisions allow certain judges to retire on a full pension before satisfying the normal requirement that the sum of age and service (minimum of 15 years) be at least 80 years. These provisions have been ignored in the valuation because only a handful of judges will retire thereunder.

### 4. Early Retirement Provisions

It is assumed that judges retiring under the early retirement provisions will choose a reduced immediate annuity.

Appendix 6 29

Age of surviving spouse less age of judge or pensioner, both calculated at death of judge or pensioner.

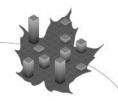


**5.** Pension Benefits Division / Optional Survivor Benefit / Enhanced Survivor Benefit No future pension benefits divisions were assumed in estimating current service costs and liabilities. Actual pension benefit divisions that occurred before 1 April 2013 were fully reflected in liabilities.

Two other provisions, namely the optional survivor benefit and the enhanced survivor benefit, were also treated like pension benefits divisions. Past elections were fully reflected in liabilities.

### 6. Sex of Surviving Spouses

Each eligible surviving spouse is assumed to be of the opposite sex to that of the member.



## **Appendix 7 – Detailed Information on Membership Data**

**Table 21 Number of Male Judges** 

As at 31 March 2013

Age Last			Co	mpleted Ye	ears of Serv	rice			
Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	Total
35-39	1								1
40-44	4								4
45-49	16	4							20
50-54	41	20	4						65
55-59	56	38	23	7					124
60-64	61	65	49	43	8	3			229
65-69	13	32	45	46	34	13	1		184
70-74	1	8	17	27	30	18	8	1	110
All Ages	193	167	138	123	72	34	9	1	737

Average age: 63.0 years Average service: 11.5 years Average salary: \$289,600<sup>1</sup> Total payroll: \$213,464,100

**Table 22 Number of Female Judges** 

As at 31 March 2013

Age Last			Co	mpleted Ye	ears of Serv	rice		
Birthday	0-4	5-9	10-14	15-19	20-24	25-29	30-34	Total
40-44	7							7
45-49	22	8						30
50-54	22	24	4					50
55-59	18	28	41	19	2			108
60-64	6	18	32	38	21	2		117
65-69	0	4	15	7	7	5	3	41
70-74	1	1	0	2	4	2	1	11
All Ages	76	83	92	66	34	9	4	364

Average age: 58.9 years
Average service: 11.6 years
Average salary: \$289,200<sup>1</sup>
Total payroll: \$105,282,400

The average salary and total payroll both exclude the salary increase effective 1 April 2013.

Appendix 7

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Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

**Table 23 Male Pensioners** 

As at 31 March 2013

	R	etirement Pensio	D	isability Pension	ers		
Age Last		Annual	Pension		Annual Pension		
Birthday	Number	Average (\$)	Total (\$)	Number	Average (\$)	Total (\$)	
Less than 60	-	-	-	1	191,300	191,300	
60-64	4	167,000	667,800	2	187,900	375,800	
65-69	23	188,300	4,331,900	2	165,800	331,500	
70-74	45	182,500	8,214,400	6	174,100	1,044,400	
75-79	159	185,200	29,453,700	10	161,500	1,614,600	
80-84	140	175,400	24,553,800	6	156,600	939,600	
85-89	66	161,300	10,644,900	3	146,500	439,600	
90-94	21	147,600	3,099,600	1	123,800	123,800	
95-99	6	152,800	916,600	-	-	-	
All Ages	464	176,500	81,882,700	31	163,200	5,060,600	

### **Retirement Pensioners**

### Average age at 31 March 2013: 80.2 years Average age at retirement: 72.2 years

### **Disability Pensioners**

Average age at 31 March 2013: 76.4 years Average age at disability: 62.3 years

**Table 24 Female Pensioners** As at 31 March 2013

	R	etirement Pensior	Di	sability Pensione	ers	
Age Last		Annual	Pension		Annual F	Pension
Birthday	Number	Average (\$)	Total (\$)	Number	Average (\$)	Total (\$)
60-64	19	179,500	3,409,600	4	182,400	729,700
65-69	14	194,000	2,716,200	3	183,800	551,400
70-74	10	184,400	1,844,300	-	-	_
75-79	7	185,700	1,299,900	1	144,700	144,700
80-84	4	180,700	722,800	1	142,300	142,300
85-89	4	171,700	686,800	1	149,500	149,500
90-84	2	154,800	309,600	-	-	-
All Ages	60	178,000	10,679,600	10	171,800	1,717,600

### **Retirement Pensioners**

Average age at 31 March 2013: 71.0 years Average age at retirement: 66.0 years

### **Disability Pensioners**

Average age at 31 March 2013: 69.9 years Average age at disability: 60.9 years

as at 31 March 2013



 Table 25
 Eligible Survivors

As at 31 March 2013

Age Last		Annualize	ed Amount
Birthday	Number	Average (\$)	Total (\$)
45-49	1	94,600	94,600
50-54	1	85,400	85,400
55-59	5	87,300	436,400
60-64	14	83,300	1,166,200
65-69	26	85,800	2,230,800
70-74	24	85,600	2,053,300
75-79	50	81,900	4,095,100
80-84	62	78,200	4,846,400
85-89	69	74,000	5,104,800
90-94	27	71,000	1,916,200
95-99	15	71,200	1,068,300
100-104	3	66,100	198,300
Widows <sup>1</sup>	297	78,400	23,295,800
Children	6	21,300	127,900

### Average age of spouses:

At 31 March 2013: 81.0 years
At death of member: 65.8 years

<sup>1</sup> All but seven surviving spouses are females.

Appendix 7



Pension Plan for the **FEDERALLY APPOINTED JUDGES** as at 31 March 2013

### **Appendix 8 – Pensioner Mortality Rates for Division of Pension**

The following pensioner mortality rates are to be used when a division of pension is requested upon the breakdown of a spousal union. These mortality rates apply to both retirement and disability pensioners. Plan year 2014 mortality rates shown below are projected in accordance with the assumed mortality improvement factors in Appendix 6-E.

Table 26 Pensioner Mortality Rates for Division of Pension For plan year 2014

(per 1,000 individuals)

Age Last	<u>Pensioners</u>				
Birthday	Male	Female			
40	1.4	1.3			
50	2.6	2.4			
60	6.2	5.2			
70	16.5	12.2			
80	50.8	36.8			
90	144.1	115.1			
100	318.2	299.1			
110+	500.0	500.0			

### Pension Plan for the FEDERALLY APPOINTED JUDGES

as at 31 March 2013



### Appendix 9 – Acknowledgements

The Office of the Comptroller General of Canada provided the SRB Account balance as at 31 March 2013.

The Office of the Commissioner for Federal Judicial Affairs provided relevant valuation input data for all federally appointed judges and for the corresponding pensioners and survivors.

The co-operation and able assistance received from the above mentioned data provider deserve to be acknowledged.

The following individuals assisted in the preparation of this report:

Laurence Frappier, F.S.A., F.C.I.A. Lyse Lacourse

Appendix 9 | 35