



 Segal Consulting

**NORTH DAKOTA  
PUBLIC EMPLOYEES  
RETIREMENT SYSTEM**

**ACTUARIAL VALUATION AND REVIEW  
AS OF JULY 1, 2013**

October 29, 2013

**DRAFT**



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October 29, 2013

Board Members  
North Dakota Public Employees Retirement System  
Bismarck, North Dakota

Members of the Board:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2013 for the North Dakota Public Employees Retirement System (PERS). It summarizes the actuarial data used in the valuation, establishes the actuarially determined contribution requirements for the 2013-2014 plan year, and analyzes the preceding year's experience.

The census and financial information on which our calculations are based was provided by the Retirement Office staff. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Tammy F. Dixon, FSA, MAAA, Enrolled Actuary.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We are members of the American Academy of Actuaries, and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

We look forward to meeting with you to review this report and to answering any questions you may have.

Sincerely,

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Brad Ramirez, FSA, MAAA, FCA, EA  
Consulting Actuary

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Tammy F. Dixon, FSA, MAAA, EA  
Vice President & Actuary

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Laura L. Mitchell, MAAA, EA  
Vice President & Associate Actuary

cc: Sparb Collins

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# Introduction

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This report has been prepared by Segal Consulting to present a valuation of the North Dakota Public Employees' Retirement System as of July 1, 2013. The valuation was performed to determine whether the assets and statutory contributions are anticipated to be sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

1. The present provisions of the North Dakota Public Employees Retirement System;
2. The characteristics of covered active members, inactive non-retired members, pensioners and beneficiaries as of July 1, 2013;
3. The assets of the System as of June 30, 2013; and
4. Economic assumptions regarding future salary increases and investment earnings and demographic assumptions regarding rates of termination, retirement, disability, death, etc.

The purpose of the actuarial valuation is to determine the contribution sufficient to meet the long-term obligations to the members covered by the North Dakota Public Employees Retirement System in accordance with the benefit provisions of the System.

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

# Highlights

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- For the combined PERS Fund (Main System, Judges, National Guard, and Law Enforcement), the present rate of contributions is not sufficient to meet the actuarially determined requirement for 2013-2014, based upon the actuarial assumptions and financing objectives approved by the Board, even after taking into account scheduled increases in the statutory rate through 2014. If unchanged, this difference will further increase the actuarial contribution requirement in future valuations.
- The PERS Board should continue to review these results and projected future performance to determine appropriate measures to mitigate the difference between the actuarial and statutory (or approved) contribution rates.
- The employer actuarial contribution requirements for 2013-2014 are as follows:

	Amount	Percentage of Payroll	Statutory/ Approved Rate*
Main System	\$105,092,504	12.14%	6.12%-7.12%
Judges	1,099,249	16.66	16.52-17.52
National Guard	153,417	9.07	6.50-7.00
Law Enforcement with prior Main System service	1,296,041	11.07	9.31-9.81**
Law Enforcement without prior Main System service	210,115	8.11	7.43-7.93

\* The statutory rates are scheduled to increase in January 2014.

\*\* Bureau of Criminal Investigation rates are 10.31-11.31%.

- A comparison of this year's actuarial contribution rates to last year's rates as a percent of payroll follows:

	2013-2014	2012-2013
Main System	12.14%	12.24%
Judges	16.66	16.33
National Guard	9.07	7.40
Law Enforcement with prior Main System service	11.07	10.69
Law Enforcement without prior Main System service	8.11	7.33

- The employer actuarial contribution requirement for the Main System for 2013-2014 is \$105,092,504, or 12.14% of payroll. The statutory rate was 6.12% of payroll as of the valuation date, but is scheduled to increase to 7.12% of payroll on January 1, 2014. A scheduled increase in the member contribution rate of 1% of payroll on January 1, 2014 will also act to decrease the employer actuarial contribution requirement. If the scheduled statutory contribution rate increase were in effect on the valuation date, the employer contribution requirement would be 11.64% of payroll, or 4.52% more than the ultimate statutory rate of 7.12% of payroll. Last year, the actuarially determined rate of 11.74% was 5.62% greater than the ultimate statutory rate of 6.12% of payroll.
- The return on the market value of assets for 2013-2014 for the PERS Fund was 13.40%, compared to -0.20% for the preceding year.
- The return on the actuarial value of assets for 2013-2014 for the PERS Fund was 3.92% compared to the investment return assumption of 8.00%. As a result, the PERS Fund experienced an investment loss on an actuarial value basis of approximately \$66.2 million.
- The ratio of the actuarial value of assets to the market value of assets for the PERS Fund is 86.0%. Last year, this ratio was 93.9%.
- A comparison of this year’s funded ratio for PERS to the prior year is as follows:

	July 1, 2013	July 1, 2012
Actuarial Value of Assets	\$1,682,958,527	\$1,627,395,636
Actuarial Accrued Liability	\$2,716,494,799	\$2,501,331,473
Funded Ratio	62.0%	65.1%

- The unrecognized appreciation represents about 14.0% of the PERS Fund market value of assets. A property of the asset smoothing method used by PERS is that the actuarial value of assets will tend to lag behind the market value of assets. This unrecognized appreciation will be recognized over the next five years. The potential impact may be illustrated as follows:
  - If the unrecognized appreciation were recognized immediately in the actuarial value assets, the funded percentage would increase from 62.0% to 72.1%.
  - If the unrecognized appreciation were recognized immediately in the actuarial value of assets, the actuarial contribution requirement would decrease as follows:

	2013-2014 Actuarial Contribution Rate	2013-2014 Rate Reflecting Unrecognized Appreciation
Main System	12.14%	9.99%
Judges	16.66	11.02
National Guard	9.07	7.51
Law Enforcement with prior Main System service	11.07	9.78
Law Enforcement without prior Main System service	8.11	7.67

- The Governmental Accounting Standards Boards (GASB) recently approved two new Statements. Statement 67 replaces Statement 25 and is for plan reporting. Statement 68 replaces Statement 27 and is for employer reporting. It is important to note that the new GASB rules only redefine pension expense for financial reporting purposes, and do not apply to contribution amounts for actual pension funding purposes. Employers and plans can still develop and adopt funding policies under current practices. While these new Statements are applicable for preparing the 2014 calendar year financial statement for the Plan's reporting and for the 2014/2015 fiscal year financial statement for the employer's reporting, the actual preparation of schedules in compliance with those Statements will depend on GASB's detailed implementation guides for the Plan (issued June 2013) and the employer (anticipated to be issued around January 2014). As a result, we have continued to use Statements 25 and 27 in preparing the financial reporting information in this report.
- The actuarial valuation report as of July 1, 2013 is based on financial and demographic information as of that date. Changes subsequent to that date are not reflected and could affect future actuarial costs of the Plan. We are prepared to work with the Board to analyze the effects of any subsequent developments.
- Table 7 details actuarial gains and losses in the Main System for many of the measured demographic assumptions. The gain/(loss) by source is measured each year, and a detailed analysis of the System's demographic assumptions is reviewed every fourth or fifth year by the completion of an experience study. The most recent experience study was completed in 2010.

# Member Characteristics

## Active Members

The age, service, compensation and contribution account balance information based on data provided by the Retirement Office for active members as of July 1, 2012 and July 1, 2013 is summarized below:

Category	Year Beginning July 1		Change From Prior Year
	2013	2012	
<b>Main:</b>			
Number	21,201	20,738	2.2%
Average age	47.1	47.1	N/A
Average service credit	10.4	10.5	N/A
Total compensation	\$865,868,265	\$781,619,798	10.8%
Average compensation	40,841	37,690	8.4%
Contribution account balance	674,447,937	614,009,333	7.7%
<b>Judges:</b>			
Number	49	49	0.0%
Average age	58.6	58.1	N/A
Average service credit	18.3	17.6	N/A
Total compensation	\$6,598,981	\$6,107,616	8.0%
Average compensation	134,673	124,645	8.0%
Contribution account balance	6,936,518	6,213,222	11.6%
<b>National Guard:</b>			
Number	39	32	21.9%
Average age	36.5	36.2	N/A
Average service credit	5.5	5.4	N/A
Total compensation	\$1,691,014	\$1,305,436	29.5%
Average compensation	43,359	40,795	6.3%
Contribution account balance	567,302	395,298	43.5%
<b>Law Enforcement with prior Main System service:</b>			
Number	229	207	10.6%
Average age	38.5	39.7	N/A
Average service credit	7.3	8.0	N/A
Total compensation	\$11,703,913	\$9,467,445	23.6%
Average compensation	51,109	45,736	11.7%
Contribution account balance	5,534,559	5,289,674	4.6%
<b>Law Enforcement without prior Main System service:</b>			
Number	70	65	7.7%
Average age	37.5	38.0	N/A
Average service credit	3.3	3.3	N/A
Total compensation	\$2,589,887	\$2,378,196	8.9%
Average compensation	36,998	36,588	1.1%
Contribution account balance	408,861	341,518	19.7%
<b>All active members:</b>			
Number	21,588	21,091	2.4%
Average age	47.0	47.0	N/A
Average service credit	10.4	10.3	N/A
Total compensation	\$888,452,060	\$800,878,490	10.9%
Average compensation	41,155	37,973	8.4%
Contribution account balance	687,895,177	626,249,095	9.8%



Distributions of the active members by sex, age, and service are presented in Tables 9-A, 9-B and 9-C of the Appendix. Tables 10-A, 10-B and 10-C present a distribution of these same members by sex, age, and salary. The table below shows a breakdown of the active members who are currently eligible for benefits, as well as those who have not yet met the vesting requirements.

The following table shows the number of active participants eligible for retirement:

Active Members Eligible for:	Main System	Judges	National Guard	Law Enforcement with prior Main System Service	Law Enforcement without prior Main System Service	Total
Retirement:						
Normal	-	-	-	-	-	-
Rule of 85	-	-	-	-	-	-
Early Retirement	-	-	-	-	-	-
Total Retirement	-	-	-	-	-	-
Deferred Retirement	-	-	-	-	-	-
Total vested	15,491	44	23	137	23	15,718
Nonvested	<u>5,710</u>	<u>5</u>	<u>16</u>	<u>92</u>	<u>47</u>	<u>5,870</u>
Total	21,201	49	39	229	70	21,588

### ***Transfers***

Some active members earned a portion of their service in a different system than they are currently in. Liabilities for these members are carried in each system based on their service in that system. The following table summarizes these members:

Original System	Current System						Total
	Main System	Judges	National Guard	Law Enforcement with prior Main System Service	Law Enforcement without prior Main System Service	Highway Patrol	
Main System	-	24	2	68	21	29	144
Judges	2	-	-	-	-	-	2
National Guard	2	-	-	-	-	-	2
Law Enforcement with prior Main System service	19	-	-	2*	2	1	24
Law Enforcement without prior Main System service	9	-	-	3	-	-	12
Highway Patrol	<u>9</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>10</u>
Total	41	24	2	74	23	30	194

\*2 with both BCI and Law Enforcement with prior Main System service.

### ***Inactive Members***

There were 4,258 inactive members (including 1 from Judges, 12 from National Guard, 28 from Law Enforcement with prior Main System service, and 8 from Law Enforcement without prior Main System service) as of July 1, 2013 with vested rights to deferred retirement benefits. The average deferred monthly benefit for this group was \$437. There were also 31 members from the Main System, 1 from Law Enforcement without prior Main System service, and 3 members from National Guard on leave of absence. For these groups, a liability is carried for their deferred retirement benefits.

There were 3,470 inactive members that are due refunds (including 14 from National Guard, 15 from Law Enforcement with prior Main System service, and 14 from Law Enforcement without prior Main System service).

### ***Retired Members***

There were 7,926 pensioners and 795 beneficiaries receiving average monthly benefits of \$1,004 as of July 1, 2013. During the year ended June 30, 2013, 651 members were awarded a pension. Tables 11-A through 12-C present the average monthly amounts and ages by type of pension for pensions awarded during the year ended June 30, 2013. Tables 13-A through 14-C present the same information for all pensions in pay status as of June 30, 2013.

# Benefit Experience

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## *New Awards*

During the fiscal year ended in June 2013, 651 pensions became effective. The average monthly benefit for these pensioners was \$1,350 and their average age at retirement was 63.3. Last year, the average benefit among new pensioners was \$1,479. The new pensioners are presented in Tables 11-A, 11-B, 11-C, 12-A, 12-B and 12-C in Appendix B by sex, type of pension, monthly benefit, and age on retirement date.

A breakdown of the new pension awards by type compared to last year is as follows:

	<u>July 1, 2013</u>	<u>July 1, 2012</u>
Normal	273	243
Rule of 85	223	244
Early	133	174
Disability	<u>22</u>	<u>23</u>
Total	651	684

## *Pensioners*

Since benefits became payable under the current retirement program, a total of 11,320 retirement pensions have been awarded, of which 7,926 remained on the June 2013 rolls (including 27 retired Judges and 55 retired members of the National Guard/Law Enforcement). In addition, 21 pensions were in suspended status as of June 30, 2013. Distributions of the pensioners are presented in Tables 13-A, 13-B, 13-C, 14-A, 14-B and 14-C in Appendix B by sex, type of pension, monthly benefit amount, and current age.

For the pensions in force on July 1, 2013, the average monthly benefit was \$1,040, an increase of \$27 from \$1,013 a year earlier. The average age of these pensioners on the valuation date was 72.1 years.

## *Beneficiaries*

As of July 1, 2013, monthly benefit payments were being made to 795 beneficiaries, including 9 beneficiaries of Judges and 2 beneficiaries of National Guard/Law Enforcement. The monthly payments to beneficiaries in payment status total \$508,592.

## *Prior Service Pensioners*

As of July 1, 2013, there were 9 pensioners receiving monthly benefits totaling \$309 under the Special Prior Service Pension provisions of the System. The current average age of Prior Service pensioners was 99.4 years, and the average monthly benefit was \$34. Because of the relatively high average age and low benefits, the liability for the Special Prior Service Pensioners represented less than 0.01% of the total actuarial accrued liability for the System. Tables 15 and 16 in Appendix B provide a breakdown of these pensioners by sex, type of pension, monthly benefit amount, and current age.

# Assets

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## *Market Value of Assets*

As shown in the draft financial statements as of June 30, 2013, the combined market value of net assets of the North Dakota Public Employees Retirement System (PERS) and Highway Patrolmen's Retirement System (HPRS) was \$2,014,714,110, an increase of \$229.5 million compared to \$1,785,190,368 a year earlier. This year's combined market value represents an increase of 12.9% from the market value one year earlier.

Based on schedules provided by the Retirement Office, the breakdown of the market value of net assets allocated to North Dakota PERS follows:

	<u>July 1, 2013</u>	<u>July 1, 2012</u>
Main System	\$1,899,458,667	\$1,683,377,253
Judges	36,525,294	32,217,585
National Guard	2,695,283	2,355,363
Law Enforcement with prior Main System service	17,820,673	15,219,249
Law Enforcement without prior Main System service	<u>1,170,109</u>	<u>777,803</u>
Total	\$1,957,670,026	\$1,733,947,253

The rate of return on the market value basis for the PERS Fund was 13.40% for the year ended June 30, 2013.

## *Actuarial Value of Assets*

The actuarial value of assets is determined as follows:

Market appreciation and depreciation are spread over five years beginning with the year of occurrence. Interest and dividends are recognized immediately. This procedure results in recognition of all changes in market value over five years. A characteristic of this asset valuation method is that, over time, it is more likely than not to produce an actuarial value of assets that is less than the market value of assets, if the investment return attributable to net interest and dividends is less than the assumed rate of return.

The above procedure is applied to the combined assets of PERS and HPRS Retirement Income Funds to determine the combined actuarial value of the Systems. The combined actuarial value was \$1,731,997,858 as of June 30, 2013. The determination of the combined actuarial asset value is shown in Table 1. This table shows that there is approximately \$283 million of appreciation that will be recognized in future years.

Table 2 summarizes the combined investment results over the previous ten-year period. Over this period, the earnings of \$705,205,300 on an actuarial value basis represented an average annual return of 4.73%. For the 2012-2013 year, the actuarial rate of return on the combined assets was 3.93%.

The total actuarial value of assets is allocated to PERS (Main System, Judges, National Guard and Law Enforcement) and HPRS in proportion to the reported market value of assets. This allocation is illustrated in Table 3 and summarized below for the PERS Fund alone.

	<u>July 1, 2013</u>	<u>July 1, 2012</u>
Main System	\$1,632,915,720	\$1,579,933,179
Judges	31,399,855	30,237,804
National Guard	2,317,065	2,210,625
Law Enforcement with prior Main System service	15,319,974	14,284,021
Law Enforcement without prior Main System service	<u>1,005,913</u>	<u>730,007</u>
Total	\$1,682,958,527	\$1,627,395,636

Chart 1 on page 14 shows the historical asset values for the PERS Fund on both an actuarial and market value basis. This graph shows that the market value of assets is currently larger than the actuarial value.

Income and disbursements for 2013 and 2012 on an actuarial value basis are summarized in Table 4, and a summary statement of assets is shown in Table 5 for the PERS Fund. The progress of the PERS Fund for the last ten years is provided in Table 6. It shows that assets have generally increased from year to year, although the amount of the increase has varied with fluctuations in investment income. Benefit payments have also increased consistently over the period.

A picture of the financial development of the PERS Fund over the last ten years is provided in Chart 2 on page 18. It shows that benefit payments and expenses continue to exceed contributions. However, over the past ten years, the investment income has offset this deficit and served to increase the assets of the System.

Investment results on an actuarial value basis are used to determine whether investment experience is meeting the System's actuarially assumed return. They do not, however, necessarily indicate the relative success of the System's investment program. Comparisons of performance with benchmarks and market indices are generally based on rates of return that recognize market changes in full.

### ***Investment Return***

For your information the investment returns on market value and on an actuarial basis for the last ten years for the combined PERS and HPRS fund are shown below. The assumed rate of return is expected to be earned over the long term, as the obligations of pension plans are expected to continue for the lifetime of its active and inactive participants.

<b><u>Year Ending June 30</u></b>	<b><u>Market Value</u></b>	<b><u>Actuarial Value</u></b>
2004	16.65%	3.16%
2005	14.17	4.36
2006	12.04	7.79
2007	19.63	15.84
2008	(5.21)	8.51
2009	(24.05)	1.72
2010	13.25	1.48
2011	21.09	3.31
2012	(0.20)	(0.15)
2013	13.41	3.93

It is desirable to have a level and predictable pension plan cost from one year to the next. Under the asset valuation method, the full value of market fluctuations is not recognized in a single year, and, as a result, the asset value and the contribution requirements are more stable. Chart 3 on page 19 illustrates the smoothing effect that results from using an actuarial value of assets.

**TABLE 1*****Determination of Actuarial Value of Assets  
(for PERS and HPRS) as of June 30, 2013 and 2012***

<u>Year Ending</u>	<u>Market Value Appreciation (Depreciation)*</u>	<u>June 30, 2013</u>		<u>June 30, 2012</u>	
		<u>Percent Deferred</u>	<u>Amount Deferred</u>	<u>Percent Deferred</u>	<u>Amount Deferred</u>
June 30, 2009	\$(463,523,678)	0%	\$0	20%	\$(92,704,735)
June 30, 2010	153,004,660	20%	30,600,932	40%	61,201,864
June 30, 2011	288,857,273	40%	115,542,909	60%	173,314,364
June 30, 2012	(40,138,712)	60%	(24,083,227)	80%	(32,110,970)
June 30, 2013	200,819,548	80%	<u>160,655,638</u>	N/A	<u>0</u>
Total Deferred as of Valuation Date			\$282,716,252		\$109,700,523
(a)	Total Appreciation (Depreciation) for last five Plan Years		139,019,091		(195,103,907)
(b)	Write-Up/(Down) Amount for the year - equals 20% of (a)		27,803,818		(39,020,781)
			<u>June 30, 2013</u>		<u>June 30, 2012</u>
Market Value of Assets			\$2,014,714,110		\$1,785,190,368
Less: Deferred Appreciation (Depreciation)			<u>282,716,252</u>		<u>109,700,523</u>
Actuarial value of assets			\$1,731,997,858		\$1,675,489,845
Actuarial Value as a Percent of Market Value			86.0%		93.9%

\* Interest and dividends are recognized immediately. Realized and unrealized appreciation (depreciation) is spread over five years.

**TABLE 2*****Summary of Combined Investment Results for PERS and HPRS on Actuarial Value of Assets***

Year Ended June 30	Net Interest and Dividend Income*		Other Income**		Total Net Investment Income	
	Amount	Yield	Amount	Yield	Amount	Yield
2004	\$30,464,800	2.54%	\$ 7,398,200	0.62%	\$ 37,863,000	3.16%
2005	29,115,600	2.38	24,276,800	1.98	53,392,400	4.36
2006	24,410,600	1.93	73,910,900	5.86	98,321,500	7.79
2007	34,727,000	2.58	178,771,700	13.26	213,498,700	15.84
2008	32,819,700	2.13	98,332,000	6.38	131,151,700	8.51
2009	29,260,400	1.77	(964,400)	(0.05)	28,296,000	1.72
2010	25,938,200	1.57	(1,337,500)	(0.09)	24,600,700	1.48
2011	28,830,100	1.74	26,013,200	1.57	54,843,300	3.31
2012	36,570,500	2.17	(39,020,800)	(2.32)	(2,450,300)	(0.15)
2013	37,884,500	2.27	27,803,800	1.66	65,688,300	3.93
Total for Last Ten Years	\$310,021,400		\$395,183,900		\$705,205,300	
Average Yield for last Ten Years						4.73%

\* Net of investment expenses.

\*\* Includes write-up (down).



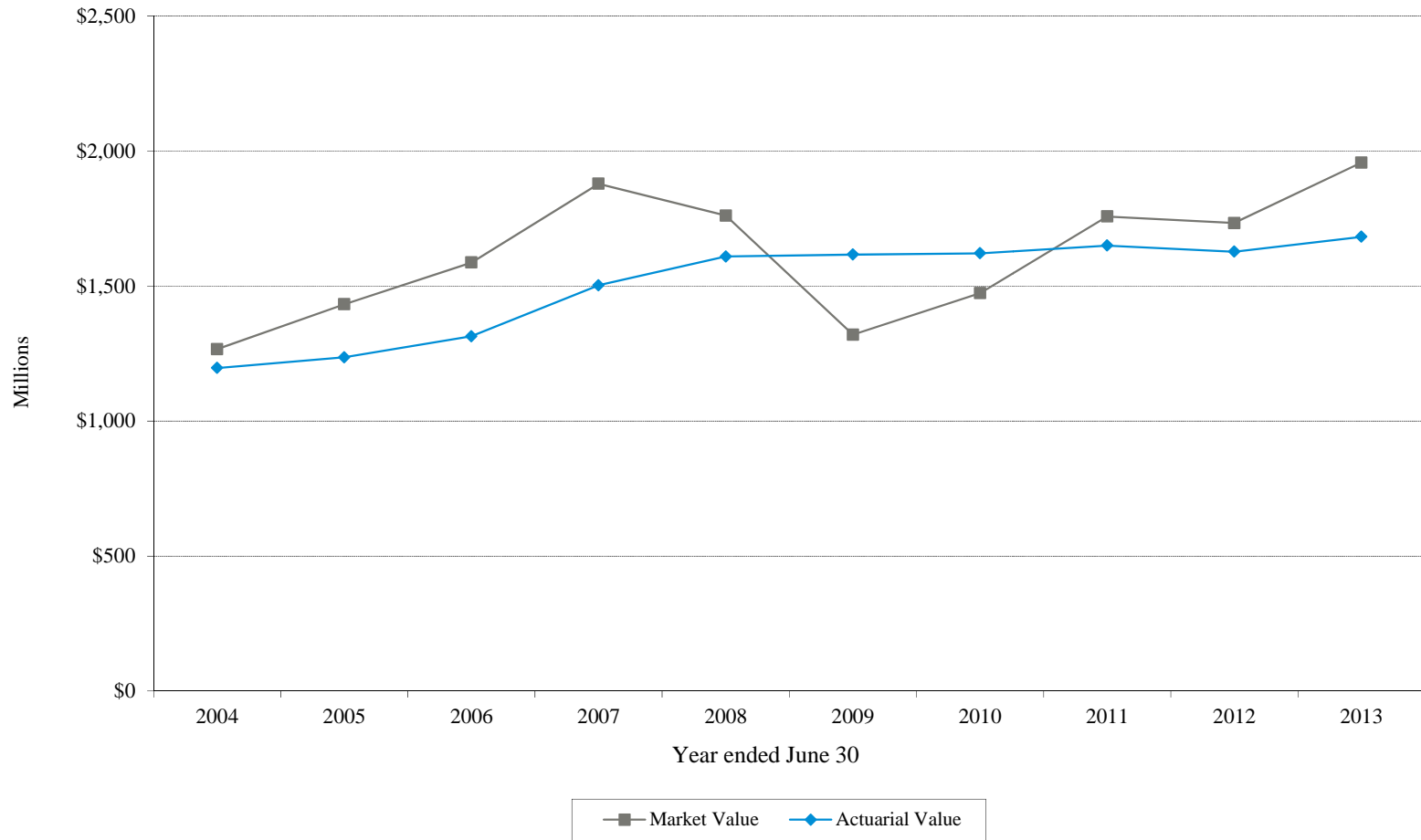
**TABLE 3***Allocation of Combined (PERS and HPRS) Actuarial Value of Assets*

	July 1, 2013		July 1, 2012	
	<u>Market Value</u>	<u>Actuarial Value</u>	<u>Market Value</u>	<u>Actuarial Value</u>
PERS Main System	\$1,899,458,667	\$ 1,632,915,720	\$1,683,377,253	\$1,579,933,179
PERS Judges	36,525,294	31,399,855	32,217,585	30,237,804
PERS National Guard	2,695,283	2,317,065	2,355,363	2,210,625
PERS Law Enforcement with prior Main System service	17,820,673	15,319,974	15,219,249	14,284,021
PERS Law Enforcement without prior Main System service	<u>1,170,109</u>	<u>1,005,913</u>	<u>777,803</u>	<u>730,007</u>
PERS Combined	\$1,957,670,026	\$ 1,682,958,527	\$1,733,947,253	\$1,627,395,636
Highway Patrol	<u>57,044,084</u>	<u>49,039,331</u>	<u>51,243,115</u>	<u>48,094,209</u>
Total	\$2,014,714,110	\$ 1,731,997,858	\$1,785,190,368	\$1,675,489,845

*Note: Allocation of the actuarial value of assets is in proportion to the market value of assets.*

### CHART 1

#### Market Value of Assets vs. Actuarial Value of Assets for PERS



**TABLE 4**  
**Summary Statement of Income and Disbursements for PERS**  
**on an Actuarial Value Basis**

	Year Ended June 30, 2013	Year Ended June 30, 2012
<b>Contribution Income:</b>		
Employer Contributions	\$48,846,796	\$38,005,854
Member Contributions	46,815,060	36,095,927
Service Credit Repurchases	<u>7,470,218</u>	<u>6,491,339</u>
Total Contribution Income	\$103,132,074	\$80,593,120
Less: Administrative Expenses	<u>(2,059,315)</u>	<u>(1,856,915)</u>
Net Contribution Income	\$101,072,759	\$78,736,205
<b>Investment Income:</b>		
Interest and Dividends	\$43,509,791	\$41,845,593
Miscellaneous Income	0	20,004
Less: Investment Expenses	<u>(6,713,127)</u>	<u>(6,359,713)</u>
Net Interest and Dividends	\$36,796,664	\$35,505,884
Write-up/(down) of Assets	<u>26,985,569</u>	<u>(37,928,609)</u>
Net Investment Income	<u>\$63,782,233</u>	<u>\$(2,422,725)</u>
Total Income Available for Benefit Payments and Reserves	<u>\$164,854,992</u>	<u>\$76,313,480</u>
<b>Benefit Payments:</b>		
Pension Benefits	\$(103,295,777)	\$(94,163,517)
Transfers to Other Plans	(212,500)	(412,993)
Refunds	<u>(5,783,824)</u>	<u>(4,805,045)</u>
Total Benefit Payments	<u>\$(109,292,101)</u>	<u>\$(99,381,555)</u>
Addition to Reserve for Future Benefit Payments	\$55,562,891	\$(23,068,075)
Actuarial Value of Assets, Start of Year	<u>1,627,395,636</u>	<u>1,650,463,711</u>
Actuarial Value of Assets, End of Year	<u>\$1,682,958,527</u>	<u>\$1,627,395,636</u>

**TABLE 5**

***Summary Statement of Assets for PERS  
(based on unaudited financial statements)***

	Year Ended June 30, 2013	Year Ended June 30, 2012
Cash	\$5,552,040	\$3,703,624
Receivables:		
Contribution receivable	\$8,338,059	\$6,493,953
Interest receivable	3,488,652	2,618,666
Due from fiduciary funds	104,387	239,522
Due from proprietary funds	0	671
Due from other state agencies	<u>1,180</u>	<u>42,455</u>
Total receivables	11,932,278	9,395,267
Investments:		
Domestic equities	\$430,105,553	\$574,705,859
International equities	591,307,961	290,235,153
International fixed income	91,424,799	88,232,357
Domestic fixed income	337,477,792	304,882,279
Real estate	364,354,225	334,476,268
Alternative investments	99,995,649	100,252,385
Invested cash	<u>25,694,768</u>	<u>27,671,620</u>
Total investments	1,940,360,747	1,720,455,921
Equipment	1,582	707
Software (not in production)	0	102,025
Software (net of amortization)	<u>2,810,501</u>	<u>3,038,443</u>
Total assets	1,960,657,148	1,736,695,987
Liabilities:		
Salaries payable	\$(79,609)	\$(71,568)
Accounts payable	(2,726,522)	(2,444,324)
Due to fiduciary funds	(69,042)	(126,782)
Due to proprietary funds	(6,160)	0
Due to other state agencies	(16,511)	(22,268)
Benefits payable	0	0
Securities lending collateral	0	0
Accrued compensated absences	<u>(89,278)</u>	<u>(83,792)</u>
Total liabilities	(2,987,122)	(2,748,734)
Net assets at market value	<u>\$1,957,670,026</u>	<u>\$1,733,947,253</u>
Net assets at actuarial value	<u>\$1,682,958,527</u>	<u>\$1,627,395,636</u>

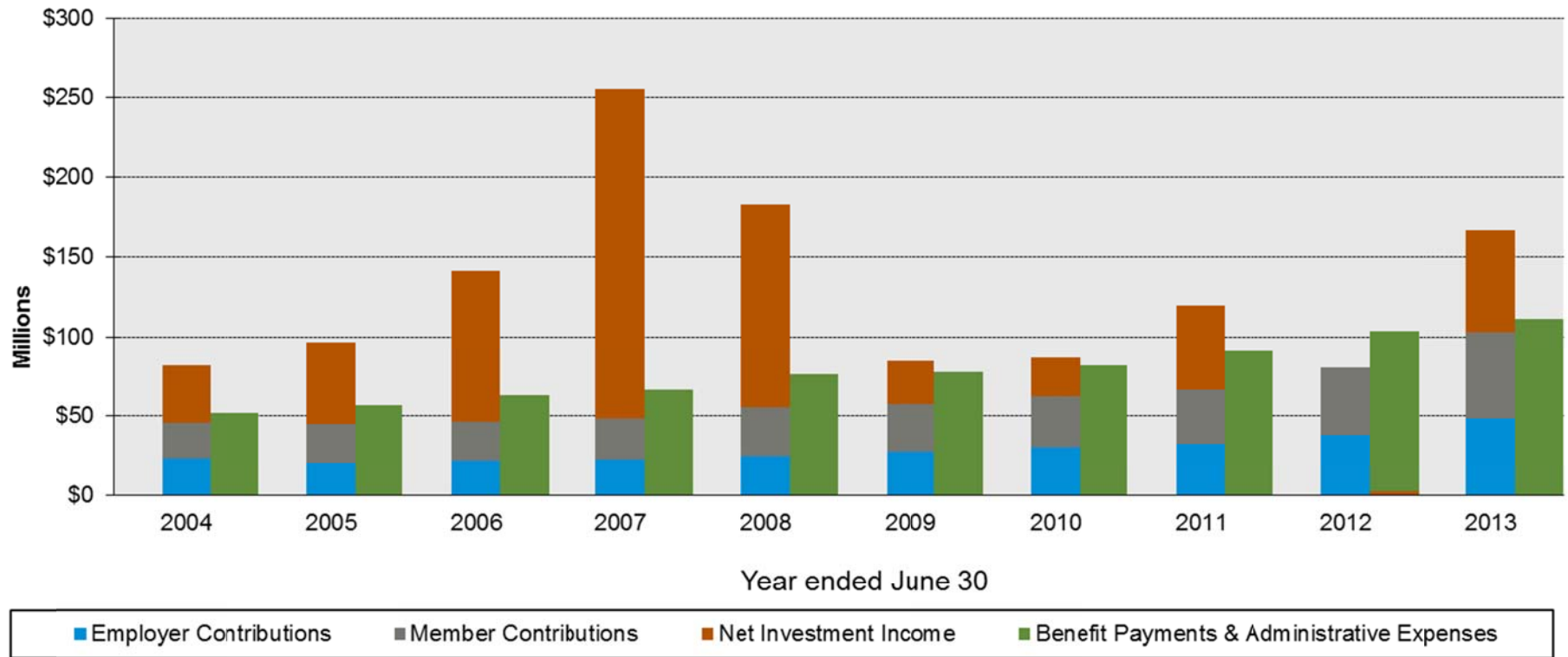
**TABLE 6*****Progress of the PERS Fund through June 30, 2013  
on an Actuarial Value Basis***

Year Ended June 30	Employer Contributions	Member Contributions*	Administrative Expenses	Net Investment Income	Transfers From/(To) Other Plans	Benefit Payments	Fund at End Of Year
2003							\$1,166,452,118
2004	\$19,732,842	\$22,152,045	\$(995,879)	\$36,594,962	\$3,771,763	\$(51,174,769)	1,196,533,082
2005	20,704,241	24,097,496	(1,072,277)	51,592,706	(21,131)	(55,719,982)	1,236,114,135
2006	21,969,517	24,508,623	(1,037,535)	95,085,991	(41,271)	(62,056,555)	1,314,542,905
2007	23,140,767	25,562,617	(1,109,260)	206,643,922	(39,829)	(65,601,228)	1,503,139,894
2008	25,253,902	27,351,026	(1,118,233)	126,989,439	3,132,512	(74,938,198)	1,609,810,342
2009	27,705,267	29,970,355	(1,260,812)	27,509,459	(496,073)	(76,090,737)	1,617,147,801
2010	30,253,093	32,584,909	(1,214,733)	23,989,771	(210,638)	(80,827,104)	1,621,723,099
2011	32,278,056	34,277,035	(1,797,287)	53,223,596	(264,686)	(88,976,102)	1,650,463,711
2012	38,005,854	42,587,266	(1,856,915)	(2,422,725)	(412,993)	(98,968,562)	1,627,395,636
2013	48,846,796	54,285,278	(2,059,315)	63,782,233	(212,500)	(109,292,101)	1,682,958,527
Total for Last Ten Years	\$287,890,335	\$317,376,650	\$(13,522,246)	\$ 682,989,354	\$5,205,154	\$(763,645,338)	

\* Includes repurchases of service credit.

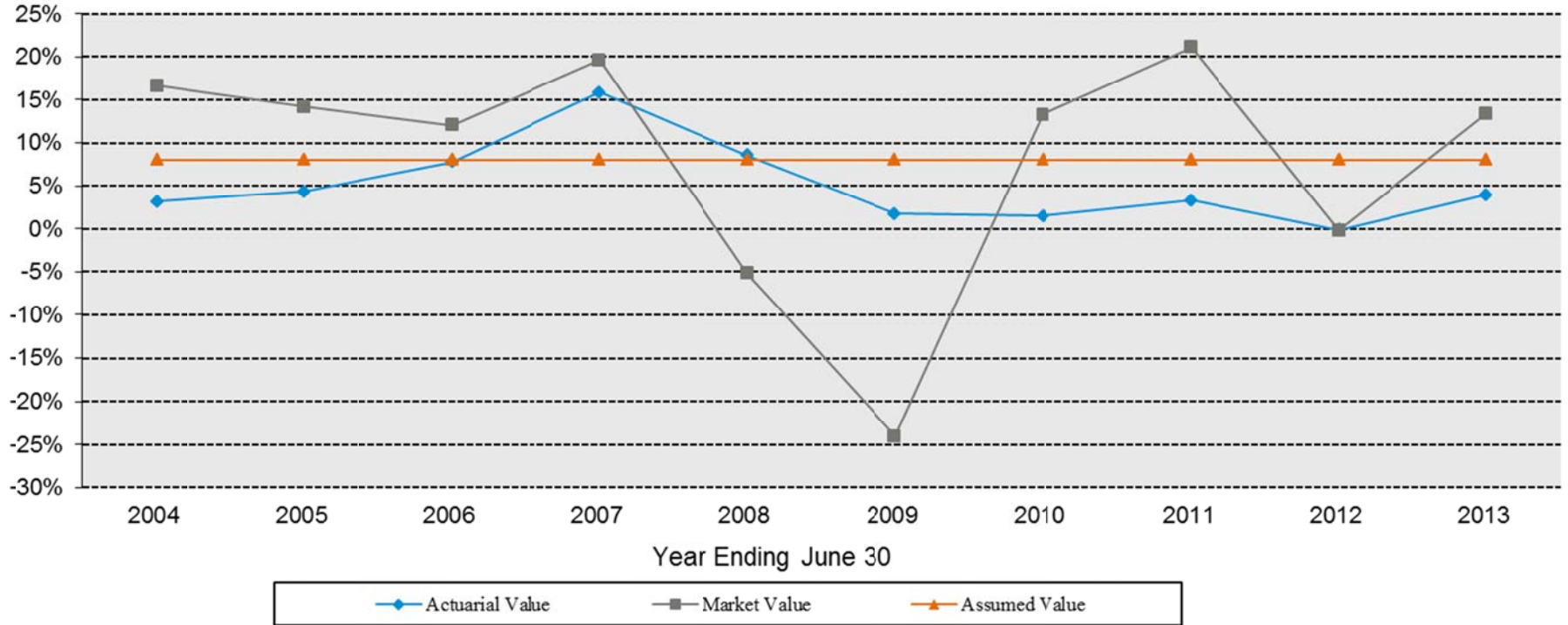
CHART 2

Income and Disbursement for PERS  
on an Actuarial Value Basis



**CHART 3**

**Market Value and Actuarial Rates of Return  
(PERS and HPRS Combined)**



# Results of Actuarial Valuation

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The contribution requirement consists of the normal cost, administrative expense allowance, plus the cost of amortizing the unfunded actuarial accrued liability over a scheduled period of years. The Board has adopted a policy with regard to the unfunded liability of determining cost using an open amortization schedule of 20 years with increasing payments. The calculated employer contribution requirements on this basis for fiscal year 2013-2014 are shown below as a dollar amount and as a percentage of the covered payroll of contributing employees.

**Main System**

The components of the actuarial contribution requirements are shown below:

	<u>Amount for 2013 – 2014</u>	<u>Percentage of Payroll</u>
Total normal cost	\$89,254,673	10.31%
Less: Member contributions	<u>(56,281,437)</u>	<u>(6.50)</u>
Net employer normal cost	\$32,973,236	3.81%
Administrative expense allowance	1,100,000	0.13
Amortization payment (credit)	<u>71,019,268</u>	<u>8.20</u>
Total employer contribution requirement	\$105,092,504	12.14%

Covered payroll is \$865,868,265.

The total statutory contribution rate is 12.12% of payroll (6.00% for the member and 6.12% for the employer) as of July 1, 2013. An increase of 2.00% of payroll is scheduled for January 1, 2014, with the member and employer each being responsible for one-half of the increase. Compared to the ultimate statutory employer rate of 7.12%, and taking into account the ultimate statutory member rate of 7.00%, the plan has a deficit of 4.52% of payroll. This and the Board’s funding policy results in an infinite effective amortization period. The contribution net of normal cost and administrative expenses is never projected to exceed interest on the Unfunded Actuarial Accrued Liability, and the Unfunded Actuarial Accrued Liability is not being amortized.

The total employer actuarial contribution requirement was 12.24% of payroll last year. Since then, actual experience of the System during 2012-2013 has changed the actuarial contribution requirement. Table 7 presents a detailed explanation of the factors that changed the contribution requirement from July 1, 2012 to July 1, 2013.



## *Judges*

The components of the actuarial contribution requirement are shown below:

	<u>Amount for 2013 – 2014</u>	<u>Percentage of Payroll</u>
Total normal cost	\$1,237,148	18.75%
Less: Member contributions	<u>(494,924)</u>	<u>(7.50)</u>
Net employer normal cost	\$742,224	11.25%
Administrative expense allowance	7,500	0.11
Amortization payment (credit)	<u>349,525</u>	<u>5.30</u>
Total employer contribution requirement	\$1,099,249	16.66%

Covered payroll is \$6,598,981.

The total statutory contribution rate is 23.52% of payroll (7.00% for the member and 16.52% for the employer) as of July 1, 2013. An increase of 2.00% of payroll is scheduled for January 1, 2014, with the member and employer each being responsible for one-half of the increase. Compared to the ultimate statutory employer rate of 17.52%, and taking into account the ultimate statutory member rate of 8.00%, the plan has a margin of 1.36% of payroll. This results in an effective amortization period of 16.1 years.

If deferred asset appreciation were taken into account on the valuation date, the assets would exceed Actuarial Accrued Liability and no amortization would be required.

A reconciliation of the change in the cost rate since the previous valuation follows:

	<u>Percentage of Payroll</u>
Employer contribution rate as of July 1, 2012	16.33%
Plan change*	(1.00)
Investment loss	1.38
Contribution gain	(0.04)
Other Plan experience during the year	0.18
Effect of maintaining 20-year amortization schedule	<u>(0.19)</u>
Employer contribution rate as of July 1, 2013	16.66%

\* *The scheduled 1.00% of payroll increase in the member contribution rate will ultimately decrease the employer cost rate by approximately 1.00% of payroll, but only one-half of the increase is reflected in the projected contributions for the 2013-2014 plan year.*

## *National Guard*

The components of the actuarial contribution requirement are shown below:

	<u>Amount for 2013 – 2014</u>	<u>Percentage of Payroll</u>
Total normal cost	\$177,422	10.49%
Less: Member contributions	<u>(71,868)</u>	<u>(4.25)</u>
Net employer normal cost	\$105,554	6.24%
Administrative expense allowance	3,000	0.18
Amortization payment (credit)	<u>44,863</u>	<u>2.65</u>
Total employer contribution requirement	\$153,417	9.07%

Covered payroll is \$1,691,014.

The total approved employer contribution rate is 10.5% of payroll (4.0% for the member and 6.5% for the employer) as of July 1, 2013. An increase of 1.0% of payroll is scheduled for January 1, 2014 with the member and employer each being responsible for one-half of the increase. Compared to the ultimate approved employer rate of 7.0%, and taking into account the ultimate member rate of 4.5%, the plan has a deficit of 1.82% of payroll. This results in an infinite effective amortization period. The contribution net of normal cost and administrative expenses is never projected to exceed interest on the Unfunded Actuarial Accrued Liability, and the Unfunded Actuarial Accrued Liability is not being amortized.

A reconciliation of the change in the cost rate since the previous valuation follows:

	<u>Percentage of Payroll</u>
Employer contribution rate as of July 1, 2012	7.40%
Plan change*	(0.25)
Investment loss	0.39
Contribution gain	(0.05)
Other Plan experience during the year	1.68
Effect of maintaining 20-year amortization schedule	<u>(0.10)</u>
Employer contribution rate as of July 1, 2013	9.07%

*\* The scheduled 0.50% of payroll increase in the member contribution rate will ultimately decrease the employer cost rate by approximately 0.50% of payroll, but only one-half of the increase is reflected in the projected contributions for the 2013-2014 plan year.*

### ***Law Enforcement with prior Main System service***

The components of the actuarial contribution requirement are shown below:

	<u>Amount for</u> <u>2013 – 2014</u>	<u>Percentage</u> <u>of Payroll</u>
Total normal cost	\$1,240,462	10.60%
Less: Member contributions	<u>(645,705)</u>	<u>(5.52)</u>
Net employer normal cost	\$594,757	5.08%
Administrative expense allowance	2,500	0.02
Amortization payment (credit)	<u>698,784</u>	<u>5.97</u>
Total employer contribution requirement	\$1,296,041	11.07%

Covered payroll is \$11,703,913.

The approved employer contribution rate is 9.31% of payroll (10.31% for Bureau of Criminal Investigation (BCI)) as of July 1, 2013. The statutory member contribution rate is 6.00% of payroll as of July 1, 2013 for members employed by the BCI and 5.00% of payroll as of July 1, 2013 for all other members in this segment. An increase is scheduled for January 1, 2014. The increase will be 2.00% of payroll for members employed by the BCI and 1.00% for all other members in this segment with the member and employer each being responsible for one-half of the increase. Compared to the ultimate statutory employer rate of 11.31% for BCI and 9.81% for other members (an average rate of 10.13%) and taking into account the ultimate member statutory rates (an average rate of 5.82%), the plan has a deficit of 0.64%. Under the current policy and statute, this segment has an effective amortization period of 25.8 years.

If deferred asset appreciation were taken into account on the valuation date, the effective amortization period would be reduced to 17.1 years.

A reconciliation of the change in the cost rate since the previous valuation follows:

	<u>Percentage</u> <u>of Payroll</u>
Employer contribution rate as of July 1, 2012	10.69%
Plan change*	(0.60)
Investment loss	0.39
Contribution gain	(0.07)
Other Plan experience during the year	0.88
Effect of maintaining 20-year amortization schedule	<u>(0.22)</u>
Employer contribution rate as of July 1, 2013	11.07%

*\* The scheduled 1.00% of payroll increase in the member contribution rate for BCI employees and 0.50% of payroll increase for other members will ultimately decrease the employer cost rate by 0.50% of payroll, but only one-half of the increase is reflected in the projected contributions for the 2013-2014 plan year.*

### ***Law Enforcement without prior Main System service***

The components of the actuarial contribution requirement are shown below:

	<u>Amount for 2013 – 2014</u>	<u>Percentage of Payroll</u>
Total normal cost	\$306,509	11.83%
Less: Member contributions	<u>(135,969)</u>	<u>(5.25)</u>
Net employer normal cost	\$170,540	6.58%
Administrative expense allowance	7,500	0.29
Amortization payment (credit)	<u>32,075</u>	<u>1.24</u>
Total employer contribution requirement	\$210,115	8.11%

Covered payroll is \$2,589,887.

The total approved contribution rate is 12.43% of payroll (5.0% for the member and 7.43% for the employer). An increase of 1.00% of payroll is scheduled for January 1, 2014 with the member and employer each being responsible for one-half of the increase. Taking into account the ultimate statutory rate of 13.43%, the plan has a margin of 0.07% of payroll. This results in an effective amortization period of 25.4 years.

If deferred asset appreciation were taken into account on the valuation date, the effective amortization period would be reduced to 13.7 years.

A reconciliation of the change in the contribution requirement since the previous valuation follows:

	<u>Percentage of Payroll</u>
Employer contribution rate as of July 1, 2012	7.33%
Plan change*	<u>(0.50)</u>
Investment loss	0.17
Contribution gain	<u>(0.06)</u>
Other Plan experience during the year	1.21
Effect of maintaining 20-year amortization schedule	<u>(0.04)</u>
Employer contribution rate as of July 1, 2013	8.11%

*\* The scheduled 1.00% of payroll increase in the member contribution rate will ultimately decrease the employer cost rate by approximately 1.00% of payroll, but only one-half of the increase is reflected in the projected contributions for the 2013-2014 plan year.*

***Main System, Judges, National Guard and Law Enforcement Combined***

The components of the actuarial contribution requirement are shown below.

	<u>Amount for 2013 – 2014</u>	<u>Percentage of Payroll</u>
Total normal cost	\$92,216,214	10.38%
Less: Member contributions	<u>(57,629,903)</u>	<u>(6.49)</u>
Net employer normal cost	\$34,586,311	3.89%
Administrative expense allowance	1,120,500	0.13
Amortization payment (credit)	<u>72,144,515</u>	<u>8.12</u>
Total employer contribution requirement	\$107,851,326	12.14%

Covered payroll is \$888,452,060.

**TABLE 7**  
**Main System**  
**Reconciliation of the Change in Employer Contribution Requirement**

	<b>Percent of Payroll</b>
<b>Employer Contribution Requirement as of July 1, 2012</b>	<b>12.24%</b>
<i>Retired Life Mortality</i>	
The release of liability due to deaths among retirees and beneficiaries was greater than expected, decreasing the employer contribution requirement.	
<i>Active Life Mortality</i>	
The release of liability due to deaths among active members had a minimal impact on the employer contribution requirement.	
<i>Disability Incidence</i>	
The net change in liability due to disability retirements had a minimal impact on the employer contribution requirement.	
<i>Withdrawals</i>	
The release of liability due to withdrawals prior to retirement when compared to expected values, was not significant.	
<i>Inactive Vested Life Mortality and Retirement</i>	
The release of liability due to deaths and retirements among inactive vested participants was less than expected, increasing the employer contribution requirement.	
<i>Retirement</i>	
The net change in liability due to non-disability retirements was greater than expected, increasing the employer contribution requirement.	
<i>Investments</i>	0.53
The rate of return on the actuarial value of assets was less than assumed, increasing the employer contribution requirement.	
<i>Salary Scale and Service</i>	
Salaries increased less than expected, decreasing the employer contribution requirement.	
<i>Contributions</i>	0.03
Actual contributions received by the System were less than the actuarially determined amount, increasing the employer contribution requirement.	

**TABLE 7 (Continued)**

*Main System*  
*Explanation of Change in Employer Contribution Requirement*

	<b>Percent of Payroll</b>
<i><b>Administrative Expenses</b></i>	0.11
Actual expenses were more than expected, increasing the employer contribution requirement.	
<i><b>New and Reinstated Members</b></i>	
The addition of new and reinstated members minimally increased the plan liabilities and the employer contribution requirement.	
<i><b>Change in Size and Composition of Membership and Miscellaneous Experience</b></i>	
The demographic characteristics of the membership changed during the year, increasing the employer contribution requirement.	
<i><b>Plan Provision Changes</b></i>	(1.00)
The increase in the contribution rates decreases the Plan deficit and the employer contribution requirement.	
<i><b>Assumption Changes</b></i>	0.00
There were no changes in actuarial assumptions.	
<i><b>Funding Schedule</b></i>	(0.31)
The effect of maintaining a 20-year funding schedule decreases the employer contribution requirement.	
<b>Employer Contribution Requirement as of July 1, 2013</b>	<b>12.14%</b>

# Funding Status

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The calculation of funded ratios provides one measure of the progress of funding a retirement plan. The funded ratio is the percentage of plan liabilities covered by plan assets. High ratios indicate a well-funded plan with assets sufficient to cover the plan's liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors. This ratio can be calculated using different measures of the retirement plan's liabilities.

## ***Funding Basis - Actuarial Accrued Liability***

This measure of liabilities is used in calculating pension costs. It uses the Entry Age Normal Actuarial Cost Method that spreads costs as a level percentage of payroll over a member's working career.

For determining plan costs, a smoothed value of assets (called the actuarial value) is used. Hence, the actuarial value of assets was used to calculate the funded ratios.

## ***Disclosure Basis***

The accounting standard for disclosure of liabilities and funding status of the System is based on GASB Statement No. 25 (Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans). GASB Statement No. 25 allows the System to disclose its liabilities and funding status on the same bases used for funding the System. The actuarial value of assets is used for comparing assets and liabilities. We are available to project the disclosure amounts based on the new GASB Statements No. 67 and 68.

## ***Historical Results***

The funded ratios (under the GASB Statement No. 25 standard) for the last ten years are developed in Table 8. These ratios are graphed in Chart 4 on page 30. The funded ratio is 62.0% using actuarial value as of June 30, 2013 and was 65.1% as of June 30, 2012. The funded ratio has deteriorated since July 1, 2001. This is due to investment losses and the fact that the statutory contribution rate is less than the actuarially determined contribution requirement. Furthermore, even if the actuarially determined contribution were made, the amortization policy calculates an amortization payment that is less than the interest on the Unfunded Actuarial Accrued Liability (UAAL), which would cause the UAAL to increase each year.

Funded ratios change over time due to several factors. These factors include the level of contributions, actual experience (including investment returns), plan amendments and changes in assumptions. In particular, the actuarial assumptions were changed in 2006 and 2010, changing the funded ratio from what it would have been otherwise.

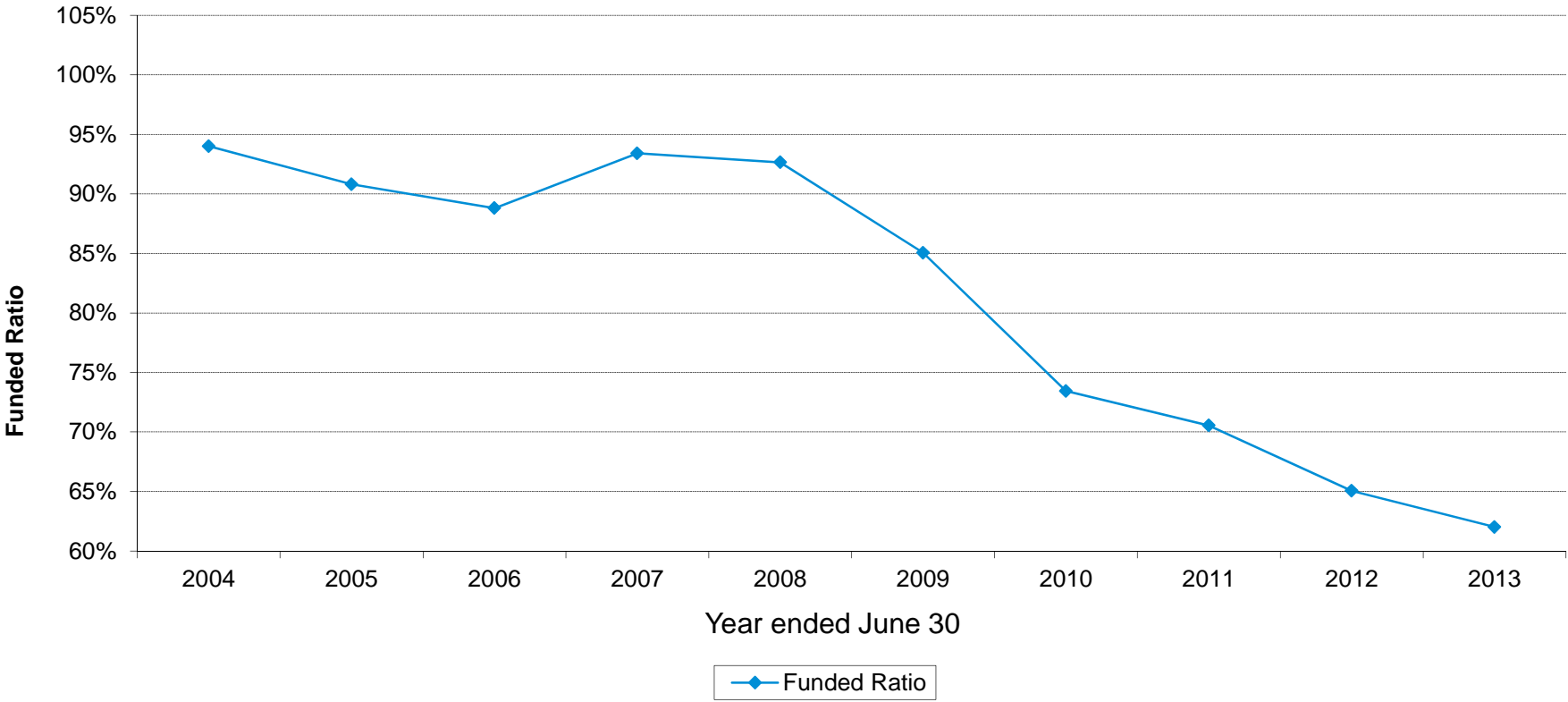


**TABLE 8****Funded Ratio for PERS**

As of July 1	Actuarial Accrued Liability	Actuarial Value of Assets	Funded Ratio
2004	\$1,272,857,600	\$1,196,533,100	94.0%
2005	1,361,182,100	1,236,114,100	90.8
2006	1,480,456,700	1,314,542,900	88.8
2007	1,609,168,600	1,503,137,900	93.4
2008	1,737,627,000	1,609,810,300	92.6
2009	1,901,200,800	1,617,147,800	85.1
2010	2,208,386,100	1,621,723,100	73.4
2011	2,339,833,200	1,650,463,700	70.5
2012	2,501,331,500	1,627,395,600	65.1
2013	2,716,494,800	1,682,958,500	62.0

**CHART 4**

**Funded Ratio for PERS  
(Ratio of Actuarial Value of Assets to Actuarial Accrued Liability)**



# Actuarial Assumptions and Cost Methods

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The actuarial assumptions and cost methods used in the actuarial valuation as of July 1, 2013 are the same as those used in the previous valuation. A summary of the actuarial assumptions and cost methods follows. Details can be found in Exhibit II.

## ***Investment Return***

The actuarial calculations are based on the assumption that the investment return on the actuarial value of assets of the System will be 8.00% per year, net of investment expenses.

## ***Salary Increases***

Because the retirement benefits provided by the plan are based on a member's final average salary, increases in salaries affect the employer's contribution requirements. A salary scale is used in an actuarial valuation to project each member's future salary increases.

For the Main System, National Guard and Law Enforcement, the assumed salary increases are service-related during the first five years of service. After five years of service, salary increases are age-related.

For Judges, the assumed salary increase is 5.00% per year for all years of service.

## ***Inflation***

The assumed inflation rate is 3.5% per annum.

## ***Payroll Growth***

For the Main System, National Guard and Law Enforcement, the assumed payroll growth rate is 4.50% per annum. For Judges, the assumed payroll growth rate is 4.00% per annum.

## ***Mortality Rates***

The reserve required to pay a member's retirement benefits depends on the period over which payments will be received. The valuation uses RP-2000 Combined Healthy Mortality Table set back three years for healthy members and the RP-2000 Disabled Retiree Mortality Table set back one year for males (not set back for females) for disabled members. The table on the next page shows sample mortality rates and life expectancies underlying the healthy-life mortality tables.

Retired Members

<u>Age</u>	Males		Females	
	<u>Deaths per 1,000 Lives</u>	<u>Expected Number of Years of Life Remaining</u>	<u>Deaths per 1,000 Lives</u>	<u>Expected Number of Years of Life Remaining</u>
55	2.7	28.4	2.0	31.2
60	4.7	23.9	3.5	26.6
65	8.8	19.5	6.7	22.1
70	16.1	15.6	12.2	18.0
75	27.3	12.0	20.7	14.3
80	46.9	8.9	34.1	11.0
85	80.5	6.3	56.3	8.1

***Disability Incidence Rates Before Retirement***

A percentage of members are assumed to become disabled while in active service. The incidence rates used are based on a study of disability incidence under the Social Security program. To reflect actual experience under the retirement system, 33% of the Social Security disability incidence rates are used for males and 20% are used for females.

***Withdrawal Rates Before Retirement***

The withdrawal rates used in this actuarial valuation reflect the expected percentage of members who will leave service at each age before retirement for reasons other than death or disability.

Withdrawal rates vary by age. For the Main System, National Guard and Law Enforcement, special withdrawal rates are applied during the first five years of service to recognize higher turnover for short service members. Withdrawal rates end upon the earlier of eligibility for early retirement or the Rule of 85 eligibility.

***Retirement Rates***

The retirement rates reflect the expected percentage of members who will retire at each age. For Main System members, the rates vary with age, as follows:

<u>Age</u>	<u>Early Retirement</u>	<u>Unreduced Retirements*</u>
51-54		8%
55	2%	8
56-59	2	10
60	4	10
61	10	20
62	20	35
63	15	25
64	10	30
65		30
66-74		20
75		100

\*Age 65 or Rule of 85

The retirement rates for Judges begin at age 60. Ten percent of Judges are assumed to retire at ages 60 and 61, 20% are assumed to retire at each age from 62 to 64, 50% are assumed to retire at each age from 65 to 69, and 100% of the remaining Judges are assumed to retire at age 70. Retirement for members of the National Guard and Law Enforcement is assumed to begin at age 55. Twenty percent are assumed to retire at each age from 55 to 63, 50% are assumed to retire at age 64, and 100% are assumed to retire at age 65.

Retirement for inactive vested members of the Main System and Judges is assumed to occur at the earlier of age 64 and the unreduced retirement date for each individual. Retirement for inactive vested members of the National Guard is assumed to occur at age 55. Retirement for inactive vested members of the Law Enforcement is assumed to occur at the earlier of age 55 and the unreduced retirement date for each individual.

Inactive vested members are assumed to elect a refund of contributions in lieu of a deferred pension benefit when it is more valuable than the deferred annuity.

### ***Administrative Expenses***

Annual administrative expenses for all Systems combined are assumed to be \$1,120,500.

### ***Marital Status***

For the Main System, National Guard and Law Enforcement, 80% of male members and 65% of female members are assumed to have spouses at death or retirement. One hundred percent of Judges are assumed to have spouses at retirement or death. Males are assumed to be three years older than their female spouses.

### ***Valuation of Assets***

Investments are valued at an adjusted market value. Interest and dividends are recognized immediately. The net market appreciation (depreciation) is spread over five years in equal dollar amounts, beginning with the year of occurrence. The actuarial value of assets is the market value less deferred appreciation (depreciation). A characteristic of this asset valuation method is that, over time, it is more likely than not to produce an actuarial value of assets that is less than the market value of assets, if the investment return attributable to net interest and dividends is less than the assumed rate of return.

### ***Actuarial Cost Method***

The System is funded using the Entry Age Normal Actuarial Cost Method. This method produces costs that remain relatively level as a percentage of covered payroll.

Under the Entry Age Normal Method, the total contribution requirement has three components - an annual normal cost, an allowance for administrative expenses and a payment with respect to the unfunded/(surplus) actuarial accrued liability. The annual normal cost is calculated for each member as the level percentage of pay required over the member's period of covered employment to pay the total expected benefits. The normal cost is determined as if the current benefit accrual rate had always been in effect. If the actuarial assumptions are met, the total normal cost rate for each member will remain level as a percentage of payroll.

The normal cost payments are sufficient to finance the benefit program only if there are no changes in plan design and all actuarial assumptions are realized. To the extent that actual experience is less favorable than assumed, additional liabilities not funded through normal cost payments arise. Also, benefit liberalizations that improve earned benefits or benefit eligibility produce additional liabilities.

The Board has adopted a policy of calculating an amortization payment for the Unfunded Actuarial Accrued Liability (UAAL) by using an open period of 20 years. The annual payments are determined as a level percent of payroll, with payroll expected to increase 4.5% per year for the Main System, National Guard and Law Enforcement, and 4.0% per year for Judges. This results in a payment towards the UAAL that is less than interest on the UAAL for the Main and National Guard systems. Under this method, the dollar amount of the UAAL is projected to grow from year to year even if the actuarially required contribution were made and all actuarial assumptions were met.

# A. Actuarial Valuation Certificate

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October 29, 2013

## **NORTH DAKOTA PUBLIC EMPLOYEES RETIREMENT SYSTEM**

This is to certify that Segal Consulting (“Segal”) has prepared an Actuarial Valuation of the System as of July 1, 2013 in accordance with generally accepted actuarial principles and practices. It has been prepared at the request of the Board to assist in administering the System. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board and may only be provided to other parties in its entirety.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan’s funded status); and changes in plan provisions or applicable law.

The valuation was based on information supplied by the Retirement Office with respect to member and financial data. Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

We are members of the American Academy of Actuaries, and we meet the Qualifications Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Certain assumptions, including interest rates, mortality tables and others identified in the report are prescribed by the Board and in our opinion, are reasonably related to the experience of the Plan and the expectations for the Plan. The Board is also responsible for selecting the actuarially required contribution, actuarial cost method and asset valuation method.

We are available to provide further information or to answer any questions regarding the report.

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Brad Ramirez, FSA, MAAA, FCA, EA  
Consulting Actuary

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Tammy F. Dixon, FSA, MAAA, EA  
Vice President & Actuary

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Laura L. Mitchell, MAAA, EA  
Vice President & Associate Actuary

**EXHIBIT I-A**  
**ACTUARIAL VALUATION RESULTS**  
**MAIN SYSTEM**

1.	Actuarial accrued liability on July 1, 2013:		
	a.	Active members .....	\$1,551,952,602
	b.	Special prior service pensions .....	10,275
	c.	Retired members and beneficiaries.....	943,661,450
	d.	Inactive non-retired members .....	<u>154,900,691</u>
	e.	Total.....	\$2,650,525,018
2.	Assets at actuarial value (\$1,899,458,667 at market value) .....		1,632,915,720
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		1,017,609,298
4.	Member and employer normal cost for ensuing year* .....		89,254,673
5.	Estimated annual salaries of covered members .....		865,868,265
6.	Member normal cost - equals 6.5% of (5) .....		56,281,437
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		32,973,236
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		71,019,268
9.	Administrative expenses .....		1,100,000
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		105,092,504
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		12.14%

\* Adjusted for interest to recognize payments through the year.



**EXHIBIT I-B**  
**ACTUARIAL VALUATION RESULTS**  
**JUDGES**

1.	Actuarial accrued liability on July 1, 2013:		
	a.	Active members .....	\$21,612,766
	b.	Retired members and beneficiaries.....	14,217,485
	c.	Inactive non-retired members .....	<u>381,557</u>
	d.	Total.....	\$36,211,808
2.	Assets at actuarial value (\$36,525,294 at market value) .....		31,399,855
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		4,811,953
4.	Member and employer normal cost for ensuing year* .....		1,237,148
5.	Estimated annual salaries of covered members .....		6,598,981
6.	Member normal cost - equals 7.5% of (5) .....		494,924
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		742,224
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		349,525
9.	Administrative expenses .....		7,500
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		1,099,249
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		16.66%

\* *Adjusted for interest to recognize payments through the year.*

**EXHIBIT I-C**  
**ACTUARIAL VALUATION RESULTS**  
**NATIONAL GUARD**

1.	Actuarial accrued liability on July 1, 2013:		
	a. Active members .....	\$1,534,842	
	b. Retired members and beneficiaries.....	1,110,115	
	c. Inactive non-retired members .....	<u>314,930</u>	
	d. Total.....		\$2,959,887
2.	Assets at actuarial value (\$2,695,283 at market value) .....		2,317,065
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		642,822
4.	Member and employer normal cost for ensuing year* .....		177,422
5.	Estimated annual salaries of covered members .....		1,691,014
6.	Member normal cost - equals 4.25% of (5) .....		71,868
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		105,554
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		44,863
9.	Administrative expenses .....		3,000
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		153,417
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		9.07%

\* Adjusted for interest to recognize payments through the year.

**EXHIBIT I-D**

**ACTUARIAL VALUATION RESULTS**

**LAW ENFORCEMENT WITH PRIOR MAIN SYSTEM SERVICE**

1.	Actuarial accrued liability on July 1, 2013:		
	a.	Active members .....	\$14,270,485
	b.	Retired members and beneficiaries.....	10,250,346
	c.	Inactive non-retired members .....	<u>811,755</u>
	d.	Total.....	\$25,332,586
2.	Assets at actuarial value (\$17,820,673 at market value) .....		15,319,974
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		10,012,612
4.	Member and employer normal cost for ensuing year* .....		1,240,462
5.	Estimated annual salaries of covered members .....		11,703,913
6.	Member normal cost - equals 5.517%** of (5) .....		645,705
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		594,757
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		698,784
9.	Administrative expenses .....		2,500
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		1,296,041
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		11.07%

\* Adjusted for interest to recognize payments through the year.

\*\*Adjusted for Bureau of Criminal Investigation rates.

**EXHIBIT I-E**

**ACTUARIAL VALUATION RESULTS**

**LAW ENFORCEMENT WITHOUT PRIOR MAIN SYSTEM SERVICE**

1.	Actuarial accrued liability on July 1, 2013:		
	a.	Active members .....	\$1,149,021
	b.	Retired members and beneficiaries.....	95,613
	c.	Inactive non-retired members .....	<u>220,866</u>
	d.	Total.....	\$1,465,500
2.	Assets at actuarial value (\$1,170,109 at market value) .....		1,005,913
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		459,587
4.	Member and employer normal cost for ensuing year* .....		306,509
5.	Estimated annual salaries of covered members .....		2,589,887
6.	Member normal cost - equals 5.25% of (5) .....		135,969
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		170,540
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		32,075
9.	Administrative expenses .....		7,500
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		210,115
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		8.11%

\* Adjusted for interest to recognize payments through the year.

**EXHIBIT I-F**

**ACTUARIAL VALUATION RESULTS**

**MAIN SYSTEM, JUDGES, NATIONAL GUARD AND  
LAW ENFORCEMENT PLAN COMBINED**

1.	Actuarial accrued liability on July 1, 2013:	
	a. Active members .....	\$1,590,519,716
	b. Special prior service pensions .....	10,275
	c. Retired members and beneficiaries.....	969,335,009
	d. Inactive non-retired members .....	<u>156,629,799</u>
	e. Total.....	\$2,716,494,799
2.	Assets at actuarial value (\$1,957,670,026 at market value) .....	1,682,958,527
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....	1,033,536,272
4.	Member and employer normal cost for ensuing year* .....	92,216,214
5.	Estimated annual salaries of covered members .....	888,452,060
6.	Member normal cost .....	57,629,903
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....	34,586,311
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....	72,144,515
9.	Administrative expenses .....	1,120,500
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....	107,851,326
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....	12.14%

*\* Adjusted for interest to recognize payments through the year.*

## EXHIBIT II

### ACTUARIAL ASSUMPTIONS AND COST METHODS

#### 1. Mortality Tables:

Healthy: The RP-2000 Combined Healthy Mortality Table, set back three years.

Disabled: The RP-2000 Disabled Retiree Mortality Table, set back one year for males (not set back for females).

These mortality tables were determined to contain approximately a 10% margin for future mortality improvement, based on a review of mortality experience in 2010.

#### 2. Disability Incidence Rates:

Before age 65:        Males    33% of OASDI disability incidence rates.  
                             Females 20% of OASDI disability incidence rates.

Age 65 and later:                    0.25% per year.

Sample rates are as follows:

<u>Age</u>	<u>Male</u>	<u>Female</u>
20	0.02%	0.01%
30	0.04	0.02
40	0.07	0.04
50	0.20	0.12
60	0.54	0.33

#### 3. Withdrawal Rates:

*Main System:*

First five years of service:

	<u>Years of Service</u>				
<u>Age</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
29 & Under	22%	18%	16%	14%	14%
30 - 39	16	14	12	12	11
40 & Over	12	10	10	8	7

## EXHIBIT II (continued)

Ultimate withdrawal rates after five years of service:

<u>Age</u>	<u>Rate</u>
20 - 24	8.8%
25 - 29	8.8
30 - 34	5.5
35 - 39	4.7
40 - 44	3.9
45 - 49	3.7
50 - 54	3.4
55 - 59	0.1
60 & Over	0.2

*National Guard and Law Enforcement:*

First five years of service:

<u>Age</u>	<u>Years of Service</u>				
	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
29 & Under	25%	23%	20%	17%	15%
30 - 39	20	17	15	13	11
40 & Over	17	15	12	10	7

Ultimate withdrawal rates after five years of service:

<u>Age</u>	<u>Rate</u>
20 - 24	8.8%
25 - 29	8.8
30 - 34	5.5
35 - 39	4.7
40 - 44	3.9
45 - 49	3.7
50 - 54	3.4
55 - 59	0.1
60 & Over	0.2

## EXHIBIT II (continued)

### *Judges:*

<u>Age</u>	<u>Rate</u>
20 – 24	2.2%
25 – 29	2.2
30 – 34	1.4
35 – 39	1.2
40 – 44	1.0
45 – 49	0.9
50 – 54	0.8
55 – 59	0.0
60 & Over	0.1

Withdrawal rates end upon eligibility for early retirement. Early retirement eligibility is as follows:

### *Main System:*

Earlier of (i) age 55 and 3 years of service, and (ii) eligibility for Rule of 85.

### *Judges:*

Earlier of (i) age 55 and 5 years of service, and (ii) eligibility for Rule of 85.

### *National Guard and Law Enforcement:*

Age 50 and 3 years of service.

#### **4. Refund of Employee Contributions:**

Inactive vested members are assumed to elect a refund of employee contributions in lieu of deferred pension benefits when it is more valuable than the deferred annuity.



**EXHIBIT II (continued)**

**5. Retirement Rates for Active Members:**

*Main System:*

<u>Age</u>	<u>Early Retirement</u>	<u>Unreduced Retirements</u>
51-54		8%
55	2%	8
56-59	2	10
60	4	10
61	10	20
62	20	35
63	15	25
64	10	30
65		30
66-74		20
75		100

*Judges:*

<u>Age</u>	<u>Rate</u>
60-61	10%
62-64	20
65-69	50
70	100

*National Guard and Law Enforcement:*

<u>Age</u>	<u>Rate</u>
55-63	20%
64	50
65	100

## EXHIBIT II (continued)

### 6. Retirement Age for Inactive Vested Members:

*Main System and Judges:*

The earlier of:

- Age 64.
- Unreduced retirement date for each individual.

*National Guard:*

Age 55.

*Law Enforcement:*

The earlier of:

- Age 55.
- Unreduced retirement date for each individual.

### 7. Interest Rate:

8.00% per annum, net of investment expenses.

### 8. Administrative Expenses:

<i>Main System:</i>	\$1,100,000
<i>Judges:</i>	\$7,500
<i>National Guard:</i>	\$3,000
<i>Law Enforcement with Prior Main Service:</i>	\$2,500
<i>Law Enforcement without Prior Main Service:</i>	\$7,500

**EXHIBIT II (continued)**

**9. Salary Scale:**

*Main System, National Guard, and Law Enforcement:*

Less than five years of service:

<u>Service</u>	<u>Percentage Increase</u>
0	8.25%
1	7.25
2	6.75
3	6.50
4	6.25

Five or more years of service (sample rates are as follows):

<u>Age</u>	<u>Percentage Increase</u>	<u>Age</u>	<u>Percentage Increase</u>
25	6.25%	45	5.11%
30	5.93	50	5.02
35	5.50	55	4.93
40	5.23	60	4.86

*Judges:*

5.00% per annum for all years of service.

**10. Payroll Growth:**

*Main System, National Guard and Law Enforcement:*

4.50% per annum

*Judges:*

4.00% per annum

**11. Inflation:**

3.5% per annum.

**12. Percent Married and Age of Spouse:**

*Main System, National Guard, and Law Enforcement:*

At retirement or death, 80% of male members and 65% of female members are assumed to have spouses. Males are assumed to be three years older than their female spouses.

*Judges:*

At retirement or death, 100% of members are assumed to have spouses. Males are assumed to be three years older than their female spouses.



### **EXHIBIT III**

#### **CHANGES IN ACTUARIAL ASSUMPTIONS AND COST METHODS**

There were no changes in actuarial assumptions or cost methods since the preceding valuation.

## EXHIBIT IV

### SUMMARY OF PLAN PROVISIONS

This exhibit summarizes the major benefit provisions of the North Dakota Public Employees Retirement System as included in the valuation. It is not intended to be, nor should it be, interpreted as a complete statement of all plan provisions.

#### 1. **Normal Service Retirement:**

Eligibility:

*Main System and Judges:*

Attainment of age 65, or at any age with age plus service equal to at least 85 (Rule of 85).

*National Guard:*

Attainment of age 55 and three consecutive years of service.

*Law Enforcement:*

Attainment of age 55 and three consecutive years of service, or at any age with age plus service equal to at least 85 (Rule of 85).

Benefit:

*Main System, National Guard and Law Enforcement:*

2.00% of final average salary multiplied by service.

*Judges:*

3.50% of final average salary for each of the first ten years of service, 2.80% for each of the next ten years of service, and 1.25% for service in excess of twenty years.

#### 2. **Early Retirement:**

Eligibility:

*Main System:*

Attainment of age 55 with three years of service.

*Judges:*

Attainment of age 55 with five years of service.

## **EXHIBIT IV (continued)**

### *National Guard and Law Enforcement:*

Attainment of age 50 with three years of service.

### Benefit:

#### *Main System:*

The Normal Service Retirement Benefit as determined above. A benefit that begins before age 65 (or Rule of 85, if earlier) is reduced by one-half of one percent for each month before the earlier of age 65 or the age at which the Rule of 85 is met.

#### *Judges:*

The Normal Service Retirement Benefit as determined above. A benefit that begins before age 65 (or Rule of 85, if earlier) is reduced by one-half of one percent for each month before age 65 or the age at which the Rule of 85 is met.

#### *National Guard:*

The Normal Service Retirement Benefit as determined above. A benefit that begins before age 55 is reduced by one-half of one percent for each month before age 55.

#### *Law Enforcement:*

The Normal Service Retirement Benefit as determined above. A benefit that begins before age 55 (or Rule of 85, if earlier) is reduced by one-half of one percent for each month before age 55 or the age at which the Rule of 85 is met.

### **3. Disability Benefit:**

#### Eligibility:

Six months of service and inability to engage in any substantial gainful activity.

#### Benefit:

#### *Main System, National Guard and Law Enforcement:*

25% of the member's final average salary at disability minus workers' compensation benefits, with a minimum of \$100 per month.

#### *Judges:*

70% of the member's final average salary at disability minus Social Security and Workers' Compensation benefits paid.

## EXHIBIT IV (continued)

### 4. Deferred Vested Retirement:

Eligibility:

*Main System, National Guard and Law Enforcement:*

Three years of service.

*Judges:*

Five years of service.

Benefit:

*Main System and Judges:*

The Normal Service Retirement Benefit payable at age 65 or the Rule of 85, if earlier.  
Reduced early retirement benefits can be elected upon attainment of age 55.

*National Guard:*

The Normal Service Retirement Benefit payable at age 55. Reduced early retirement benefits can be elected upon attainment of age 50.

*Law Enforcement:*

The Normal Service Retirement Benefit payable at age 55 or the Rule of 85, if earlier.  
Reduced early retirement benefit can be selected upon attainment of age 50.

### 5. Pre-Retirement Death Benefits:

(a) Eligibility:

*Main System, National Guard and Law Enforcement:*

Three years of service.

*Judges:*

Five years of service.



## EXHIBIT IV (continued)

Benefit:

*Main System, National Guard and Law Enforcement:*

One of the following options:

- Lump sum payment of member's accumulated contributions with interest.
- 50% of the member's accrued benefit (not reduced on account of age) payable for the surviving spouse's lifetime.
- Continuation portion of 100% joint and survivor annuity (only if participant was eligible for normal retirement).
- A partial lump sum payment in addition to the one of the annuity options above.

*Judges:*

One of the following options:

- Lump sum payment of member's accumulated contributions with interest.
- 100% of the member's accrued benefit (not reduced on account of age) payable for the spouse's lifetime.

(b) Eligibility:

*Main System, Judges, National Guard and Law Enforcement:*

Not vested or no surviving spouse.

Benefit:

*Main System, Judges, National Guard and Law Enforcement:*

Lump sum payment of member's accumulated contributions with interest.

### 6. **Refund of Member Contributions:**

Paid to terminated non-vested members and terminated vested members who choose refund in lieu of a monthly retirement benefit.

## EXHIBIT IV (continued)

### 7. Accumulated Member Contributions:

Member contributions accumulate with interest at the following rates:

<u>Time Period</u>	<u>Per Annum Interest Rate</u>
Through June 30, 1981	5.0%
July 1, 1981 to June 30, 1986	6.0%
After June 30, 1986	0.5% less than the actuarial interest rate assumption

### 8. Standard and Optional Forms of Payment:

Standard form of payment:

*Main System, National Guard and Law Enforcement:*

Monthly benefit for life with a refund to beneficiary at death of the remaining balance (if any) of accumulated member contributions.

*Judges:*

Monthly benefit for life, with 50% payable to an eligible survivor.

Optional forms of payment:

- Life annuity (for Judges)
- 50% joint and survivor annuity with pop-up (for Main System, National Guard and Law Enforcement)
- 100% joint and survivor annuity with pop-up
- Twenty-year certain and life annuity
- Ten-year certain and life annuity
- Social Security level income annuity
- A partial lump sum payment in addition to one of the annuity options above.
- An actuarially equivalent graduated benefit option with either a one percent or two percent increase to be applied the first day of January of each year. Not available for disability or early retirements or in combination with a partial lump sum option, a deferred normal retirement option, or a Social Security level income annuity.

**EXHIBIT IV (continued)**

**9. Final Average Salary:**

Average of the highest salary received by the member for any 36 months employed during the last 180 months of employment.

**10. Contributions:**

Contribution rates specified in the Century Code (except employer rate for National Guard and Law Enforcement); differ between permanent full-time employees and part-time temporary employees. Rates are as follow:

	Rates Set by Statute		Rates Determined by the Board of Retirement
	<u>Member</u>	<u>Employer</u>	<u>Employer</u>
Main System Full-Time Employees	6.00%	6.12%	
Effective January 2014	7.00%	7.12%	
Main System Part-Time Employees	12.12%	0.00%	
Effective January 2014	14.12%	0.00%	
Judges	7.00%	16.52%	
Effective January 2014	8.00%	17.52%	
National Guard	4.00%		6.50%
Effective January 2014	4.50%		7.00%
Law Enforcement with prior Main System service	5.00%		9.31%
Effective January 2014	5.50%		9.81%
BCI Employees	6.00%		10.31%
Effective January 2014	7.00%		11.31%
Law Enforcement without prior Main System service	5.00%		7.43%
Effective January 2014	5.50%		7.93%

Effective January 1, 2000:

A member's account balance includes vested employer contributions equal to the member's contributions to the deferred compensation Plan under chapter 54-52.2. The vested employer contribution may not exceed:

1. For months one through 12 of service credit, \$25 or 1% of the member's monthly salary, whichever is greater.
2. For months 13 through 24 of service credit, \$25 or 2% of the member's monthly salary, whichever is greater.
3. For months 25 through 36 of service credit, \$25 or 3% of the member's monthly salary, whichever is greater.
4. For service exceeding 36 months, \$25 or 4% of the member's monthly salary, whichever is greater.

Vested employer contributions are credited monthly to the member's account balance.

#### **11. Rollovers:**

The fund may accept rollovers from other qualified plans under rules adopted by the Board for the purchase of additional service credit.

## EXHIBIT V

### CHANGES IN PLAN PROVISIONS

As a result of legislation passed in 2013, the contribution rates are scheduled to increase in January of 2014 by the following amounts:

	<u>Member</u>	<u>Employer</u>
Main System Full-Time Employees	1.00%	1.00%
Main System Part-Time Employees	N/A	2.00
Judges	1.00	1.00
National Guard	0.50	0.50
Law Enforcement with prior Main System service	0.50	0.50
BCI Employees	1.00	1.00
Law Enforcement without prior Main System service	0.50	0.50

## B. Census Tables

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	<u>Table Designation</u>
I. Active Members	
(A) Number of active members grouped by nearest age and years of employment:	
Males	9-A
Females	9-B
All	9-C
(B) Number of active members grouped by nearest age and salary:	
Males	10-A
Females	10-B
All	10-C
II. Current Plan Pensions	
(A) Distribution of pensions awarded during the year by amount of benefit and type of pension:	
Males	11-A
Females	11-B
All	11-C
(B) Distribution of pensions awarded during the year by nearest age and type of pension:	
Males	12-A
Females	12-B
All	12-C
(C) Distribution of pensions in force by amount of benefit and type of pension:	
Males	13-A
Females	13-B
All	13-C
(D) Distribution of pensions in force by nearest age and type of pension:	
Males	14-A
Females	14-B
All	14-C
III. Special Prior Service Pensions	
(A) Distribution of pensions in force by amount of benefit:	15
(B) Distribution of pensions in force by nearest age:	16

**TABLE 9-A**

*Census of Members in Active Service on July 1, 2013  
by Nearest Age and Years of Employment in PERS*

*(Males – Main System, Judges, National Guard, and Law Enforcement)*

Nearest Age	Total	Years of Employment							
		Under 5	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 & Over
Total	8,608	3,358	1,881	1,069	776	564	449	324	187
Under 20	1	1	0	0	0	0	0	0	0
20 – 24	231	229	2	0	0	0	0	0	0
25 – 29	787	666	121	0	0	0	0	0	0
30 – 34	881	518	309	53	1	0	0	0	0
35 – 39	809	354	268	142	45	0	0	0	0
40 – 44	906	330	231	171	140	33	1	0	0
45 – 49	985	309	208	145	143	142	35	3	0
50 – 54	1,225	334	242	154	148	134	146	62	5
55 – 59	1,323	324	231	177	137	112	145	141	56
60 – 64	1,012	194	169	132	126	107	91	95	98
65 – 69	323	66	74	62	27	27	25	19	23
70 – 74	93	28	18	21	8	8	4	1	5
75 & over	32	5	8	12	1	1	2	3	0

**TABLE 9-B**

*Census of Members in Active Service on July 1, 2013  
by Nearest Age and Years of Employment in PERS*

*(Females – Main System, Judges, National Guard, and Law Enforcement)*

Nearest Age	Total	Years of Employment							
		Under 5	5 – 9	10 - 14	15 - 19	20 - 24	25 – 29	30 - 34	35 & Over
Total	12,980	5,087	2,766	1,783	1,199	880	650	378	237
Under 20	7	7	0	0	0	0	0	0	0
20 – 24	328	328	0	0	0	0	0	0	0
25 – 29	912	834	78	0	0	0	0	0	0
30 – 34	1,111	717	347	47	0	0	0	0	0
35 – 39	1,288	701	341	206	39	1	0	0	0
40 – 44	1,405	619	375	221	150	38	2	0	0
45 – 49	1,646	583	396	261	167	155	78	6	0
50 – 54	2,237	591	453	391	258	194	213	131	6
55 – 59	2,056	398	393	327	288	230	173	134	113
60 – 64	1,474	234	269	231	207	208	152	80	93
65 – 69	391	48	95	72	66	48	24	20	18
70 – 74	90	18	14	18	18	6	5	6	5
75 & over	35	9	5	9	6	0	3	1	2



**TABLE 9-C**

*Census of Members in Active Service on July 1, 2013  
by Nearest Age and Years of Employment in PERS*

*(All Members – Main System, Judges, National Guard, and Law Enforcement)*

Nearest Age	Total	Years of Employment							
		Under 5	5 - 9	10 - 14	15 - 19	20 - 24	25 – 29	30 - 34	35 & Over
Total	21,588	8,445	4,647	2,852	1,975	1,444	1,099	702	424
Under 20	8	8	0	0	0	0	0	0	0
20 – 24	559	557	2	0	0	0	0	0	0
25 – 29	1,699	1,500	199	0	0	0	0	0	0
30 – 34	1,992	1,235	656	100	1	0	0	0	0
35 – 39	2,097	1,055	609	348	84	1	0	0	0
40 – 44	2,311	949	606	392	290	71	3	0	0
45 – 49	2,631	892	604	406	310	297	113	9	0
50 – 54	3,462	925	695	545	406	328	359	193	11
55 – 59	3,379	722	624	504	425	342	318	275	169
60 – 64	2,486	428	438	363	333	315	243	175	191
65 – 69	714	114	169	134	93	75	49	39	41
70 – 74	183	46	32	39	26	14	9	7	10
75 & over	67	14	13	21	7	1	5	4	2

**TABLE 10-A**

*Census of Members in Active Service on July 1, 2013  
by Nearest Age and Salary*

*(Males – Main System, Judges, National Guard, and Law Enforcement)*

Nearest Age	Total	Annualized Salary									
		Less than \$10,000	\$10,000 - \$14,999	\$15,000 - \$19,999	\$20,000 - \$24,999	\$25,000 - \$29,999	\$30,000 - \$34,999	\$35,000 - \$39,999	\$40,000 - \$44,999	\$45,000 - \$49,999	\$50,000 & Over
Total	8,608	180	226	195	449	581	963	1,032	1,204	1,026	2,752
Under 20	1	0	0	0	1	0	0	0	0	0	0
20 – 24	231	16	10	11	26	40	60	32	20	14	2
25 – 29	787	30	16	25	58	79	123	143	112	111	90
30 – 34	881	18	16	13	42	52	109	129	170	130	202
35 – 39	809	7	10	15	33	49	80	84	143	122	266
40 – 44	906	11	11	11	40	52	98	110	133	104	336
45 – 49	985	20	11	12	47	53	105	108	152	104	373
50 – 54	1,225	21	21	20	49	76	108	148	176	143	463
55 – 59	1,323	23	28	33	58	85	134	144	160	161	497
60 – 64	1,012	10	40	26	47	70	108	99	99	103	410
65 – 69	323	11	39	16	32	19	28	29	30	29	90
70 – 74	93	8	15	8	11	5	10	4	7	5	20
75 & over	32	5	9	5	5	1	0	2	2	0	3

**TABLE 10-B*****Census of Members in Active Service on July 1, 2013  
by Nearest Age and Salary******(Females – Main System, Judges, National Guard, and Law Enforcement)***

Nearest Age	Total	Annualized Salary									
		Less than \$10,000	\$10,000 - \$14,999	\$15,000 - \$19,999	\$20,000 - \$24,999	\$25,000 - \$29,999	\$30,000 - \$34,999	\$35,000 - \$39,999	\$40,000 - \$44,999	\$45,000 - \$49,999	\$50,000 & Over
Total	12,980	465	891	1,395	1,281	1,579	1,631	1,407	1,332	968	2,031
Under 20	7	4	1	1	0	1	0	0	0	0	0
20 – 24	328	63	48	42	57	40	32	24	15	5	2
25 – 29	912	59	49	100	91	146	113	125	102	84	43
30 – 34	1,111	54	79	97	86	136	127	124	147	109	152
35 – 39	1,288	65	118	116	88	146	152	135	160	97	211
40 – 44	1,405	51	113	176	107	148	154	163	157	101	235
45 – 49	1,646	42	122	184	171	192	208	161	165	107	294
50 – 54	2,237	41	124	226	255	258	303	232	226	152	420
55 – 59	2,056	35	104	232	210	252	277	221	190	173	362
60 – 64	1,474	29	84	148	161	189	199	167	136	110	251
65 – 69	391	9	28	53	42	58	53	45	25	25	53
70 – 74	90	8	11	16	8	9	11	8	7	4	8
75 & over	35	5	10	4	5	4	2	2	2	1	0

**TABLE 10-C**

*Census of Members in Active Service on July 1, 2013  
by Nearest Age and Salary*

*(All Members – Main System, Judges, National Guard, and Law Enforcement)*

Nearest Age	Total	Annualized Salary									
		Less than \$10,000	\$10,000 - \$14,999	\$15,000 - \$19,999	\$20,000 - \$24,999	\$25,000 - \$29,999	\$30,000 - \$34,999	\$35,000 - \$39,999	\$40,000 - \$44,999	\$45,000 - \$49,999	\$50,000 & Over
Total	21,588	645	1,117	1,590	1,730	2,160	2,594	2,439	2,536	1,994	4,783
Under 20	8	4	1	1	1	1	0	0	0	0	0
20 – 24	559	79	58	53	83	80	92	56	35	19	4
25 – 29	1,699	89	65	125	149	225	236	268	214	195	133
30 – 34	1,992	72	95	110	128	188	236	253	317	239	354
35 – 39	2,097	72	128	131	121	195	232	219	303	219	477
40 – 44	2,311	62	124	187	147	200	252	273	290	205	571
45 – 49	2,631	62	133	196	218	245	313	269	317	211	667
50 – 54	3,462	62	145	246	304	334	411	380	402	295	883
55 – 59	3,379	58	132	265	268	337	411	365	350	334	859
60 – 64	2,486	39	124	174	208	259	307	266	235	213	661
65 – 69	714	20	67	69	74	77	81	74	55	54	143
70 – 74	183	16	26	24	19	14	21	12	14	9	28
75 & over	67	10	19	9	10	5	2	4	4	1	3

**TABLE 11-A**

*Pensions Awarded During the Year Ended June 30, 2013  
by Type of Pension and Monthly Amount*

*(Males – Main System, Judges, National Guard, and Law Enforcement)*

Monthly Amount	Total	Type of Pension			
		Normal	Early	Rule of 85	Disability
Total	260	118	33	97	12
Under \$200	19	16	3	0	0
200 - 399	25	13	11	0	1
400 - 599	24	17	6	0	1
600 - 799	25	13	6	0	6
800 - 999	19	12	2	1	4
1,000 - 1,199	9	7	1	1	0
1,200 - 1,399	15	7	3	5	0
1,400 - 1,599	6	3	0	3	0
1,600 - 1,799	11	5	0	6	0
1,800 - 1,999	17	10	0	7	0
2,000 - 2,199	11	5	0	6	0
2,200 - 2,399	9	2	0	7	0
2,400 - 2,599	11	1	0	10	0
2,600 - 2,799	14	0	0	14	0
2,800 - 2,999	6	0	0	6	0
3,000 - 3,199	6	2	0	4	0
3,200 - 3,399	5	1	0	4	0
3,400 - 3,599	6	1	0	5	0
3,600 - 3,799	2	0	0	2	0
3,800 - 3,999	6	0	1	5	0
4,000 - 4,199	4	1	0	3	0
4,200 - 4,399	1	0	0	1	0
4,400 - 4,599	1	0	0	1	0
4,600 - 4,799	1	0	0	1	0
4,800 - 4,999	2	0	0	2	0
5,000 & over	5	2	0	3	0

**TABLE 11-B*****Pensions Awarded During the Year Ended June 30, 2013  
by Type of Pension and Monthly Amount******(Females – Main System, Judges, National Guard, and Law Enforcement)***

Monthly Amount	Total	Type of Pension			
		Normal	Early	Rule of 85	Disability
Total	391	155	100	126	10
Under \$200	57	31	26	0	0
200 - 399	54	28	25	0	1
400 - 599	48	23	21	1	3
600 - 799	28	11	11	1	5
800 - 999	26	16	4	5	1
1,000 - 1,199	25	9	6	10	0
1,200 - 1,399	28	7	6	15	0
1,400 - 1,599	17	3	0	14	0
1,600 - 1,799	19	6	1	12	0
1,800 - 1,999	19	4	0	15	0
2,000 - 2,199	11	4	0	7	0
2,200 - 2,399	14	4	0	10	0
2,400 - 2,599	11	3	0	8	0
2,600 - 2,799	4	1	0	3	0
2,800 - 2,999	4	1	0	3	0
3,000 - 3,199	5	1	0	4	0
3,200 - 3,399	4	0	0	4	0
3,400 - 3,599	1	0	0	1	0
3,600 - 3,799	1	0	0	1	0
3,800 - 3,999	7	1	0	6	0
4,000 - 4,199	3	1	0	2	0
4,200 - 4,399	1	0	0	1	0
4,400 - 4,599	1	1	0	0	0
4,600 - 4,799	1	0	0	1	0
4,800 - 4,999	1	0	0	1	0
5,000 & over	1	0	0	1	0

**TABLE 11-C**

*Pensions Awarded During the Year Ended June 30, 2013  
by Type of Pension and Monthly Amount*

*(All Members – Main System, Judges, National Guard, and Law Enforcement)*

Monthly Amount	Total	Type of Pension			
		Normal	Early	Rule of 85	Disability
Total	651	273	133	223	22
Under \$200	76	47	29	0	0
200 - 399	79	41	36	0	2
400 - 599	72	40	27	1	4
600 - 799	53	24	17	1	11
800 - 999	45	28	6	6	5
1,000 - 1,199	34	16	7	11	0
1,200 - 1,399	43	14	9	20	0
1,400 - 1,599	23	6	0	17	0
1,600 - 1,799	30	11	1	18	0
1,800 - 1,999	36	14	0	22	0
2,000 - 2,199	22	9	0	13	0
2,200 - 2,399	23	6	0	17	0
2,400 - 2,599	22	4	0	18	0
2,600 - 2,799	18	1	0	17	0
2,800 - 2,999	10	1	0	9	0
3,000 - 3,199	11	3	0	8	0
3,200 - 3,399	9	1	0	8	0
3,400 - 3,599	7	1	0	6	0
3,600 - 3,799	3	0	0	3	0
3,800 - 3,999	13	1	1	11	0
4,000 - 4,199	7	2	0	5	0
4,200 - 4,399	2	0	0	2	0
4,400 - 4,599	2	1	0	1	0
4,600 - 4,799	2	0	0	2	0
4,800 - 4,999	3	0	0	3	0
5,000 & over	6	2	0	4	0

**TABLE 12-A*****Pensions Awarded During the Year Ended June 30, 2013  
by Type of Pension and Nearest Age******(Males – Main System, Judges, National Guard, and Law Enforcement)***

Nearest Age	Type of Pension				
	Total	Normal	Early	Rule of 85	Disability
Total	260	118	33	97	12
Under 50	5	0	0	0	5
50 - 54	8	0	0	8	0
55 - 59	24	2	2	18	2
60 - 64	95	5	24	61	5
65 - 69	101	84	7	10	0
70 - 74	18	18	0	0	0
75 & over	9	9	0	0	0



**TABLE 12-B*****Pensions Awarded During the Year Ended June 30, 2013  
by Type of Pension and Nearest Age******(Females – Main System, Judges, National Guard, and Law Enforcement)***

Nearest Age	Type of Pension				
	Total	Normal	Early	Rule of 85	Disability
Total	391	155	100	126	10
Under 50	1	0	0	0	1
50 - 54	8	1	0	4	3
55 - 59	41	0	11	27	3
60 - 64	157	9	75	72	1
65 - 69	143	104	14	23	2
70 - 74	32	32	0	0	0
75 & over	9	9	0	0	0

**TABLE 12-C*****Pensions Awarded During the Year Ended June 30, 2013  
by Type of Pension and Nearest Age******(All Members – Main System, Judges, National Guard, and Law Enforcement)***

Nearest Age	Type of Pension				
	Total	Normal	Early	Rule of 85	Disability
Total	651	273	133	223	22
Under 50	6	0	0	0	6
50 - 54	16	1	0	12	3
55 - 59	65	2	13	45	5
60 - 64	252	14	99	133	6
65 - 69	244	188	21	33	2
70 - 74	50	50	0	0	0
75 & over	18	18	0	0	0

**TABLE 13-A*****Current Plan Pensioners in Force as of July 1, 2013  
by Type of Pension and Monthly Amount******(Males – Main System, Judges, National Guard, and Law Enforcement)***

Monthly Amount	Total	Type of Pension			
		Normal	Early	Service*	Disability
Total	3,313	1,066	715	1,381	151
Under \$200	301	186	104	6	5
200 - 399	423	170	203	5	45
400 - 599	365	134	170	10	51
600 - 799	258	108	108	16	26
800 - 999	229	94	54	67	14
1,000 - 1,199	244	89	29	121	5
1,200 - 1,399	230	56	14	158	2
1,400 - 1,599	188	47	11	129	1
1,600 - 1,799	155	34	3	118	0
1,800 - 1,999	155	31	4	119	1
2,000 - 2,199	131	20	2	108	1
2,200 - 2,399	117	12	6	99	0
2,400 - 2,599	114	19	0	95	0
2,600 - 2,799	88	10	0	78	0
2,800 - 2,999	54	6	1	47	0
3,000 - 3,199	47	9	2	36	0
3,200 - 3,399	48	6	0	42	0
3,400 - 3,599	33	4	2	27	0
3,600 - 3,799	16	3	0	13	0
3,800 - 3,999	20	3	1	16	0
4,000 - 4,199	21	5	1	15	0
4,200 - 4,399	16	2	0	14	0
4,400 - 4,599	14	3	0	11	0
4,600 - 4,799	8	3	0	5	0
4,800 - 4,999	8	4	0	4	0
5,000 & over	30	8	0	22	0

\* Includes Rule of 85, Rule of 88, and Rule of 90.

**TABLE 13-B*****Current Plan Pensioners in Force as of July 1, 2013  
by Type of Pension and Monthly Amount******(Females – Main System, Judges, National Guard, and Law Enforcement)***

Monthly Amount	Total	Type of Pension			
		Normal	Early	Service*	Disability
Total	4,613	1,481	1,573	1,375	184
Under \$200	717	287	413	8	9
200 - 399	967	349	544	9	65
400 - 599	701	266	343	24	68
600 - 799	425	158	142	93	32
800 - 999	384	127	54	193	10
1,000 - 1,199	319	73	43	203	0
1,200 - 1,399	264	66	15	183	0
1,400 - 1,599	187	38	5	144	0
1,600 - 1,799	154	26	6	122	0
1,800 - 1,999	121	23	5	93	0
2,000 - 2,199	89	20	3	66	0
2,200 - 2,399	83	16	0	67	0
2,400 - 2,599	48	6	0	42	0
2,600 - 2,799	28	5	0	23	0
2,800 - 2,999	25	4	0	21	0
3,000 - 3,199	24	4	0	20	0
3,200 - 3,399	18	2	0	16	0
3,400 - 3,599	8	1	0	7	0
3,600 - 3,799	9	2	0	7	0
3,800 - 3,999	14	3	0	11	0
4,000 - 4,199	7	2	0	5	0
4,200 - 4,399	6	1	0	5	0
4,400 - 4,599	1	1	0	0	0
4,600 - 4,799	4	0	0	4	0
4,800 - 4,999	2	1	0	1	0
5,000 & over	8	0	0	8	0

\* Includes Rule of 85, Rule of 88, and Rule of 90.

**TABLE 13-C*****Current Plan Pensioners in Force as of July 1, 2013  
by Type of Pension and Monthly Amount******(All Members – Main System, Judges, National Guard, and Law Enforcement)***

Monthly Amount	Total	Type of Pension			
		Normal	Early	Service*	Disability
Total	7,926	2,547	2,288	2,756	335
Under \$200	1,018	473	517	14	14
200 - 399	1,390	519	747	14	110
400 - 599	1,066	400	513	34	119
600 - 799	683	266	250	109	58
800 - 999	613	221	108	260	24
1,000 - 1,199	563	162	72	324	5
1,200 - 1,399	494	122	29	341	2
1,400 - 1,599	375	85	16	273	1
1,600 - 1,799	309	60	9	240	0
1,800 - 1,999	276	54	9	212	1
2,000 - 2,199	220	40	5	174	1
2,200 - 2,399	200	28	6	166	0
2,400 - 2,599	162	25	0	137	0
2,600 - 2,799	116	15	0	101	0
2,800 - 2,999	79	10	1	68	0
3,000 - 3,199	71	13	2	56	0
3,200 - 3,399	66	8	0	58	0
3,400 - 3,599	41	5	2	34	0
3,600 - 3,799	25	5	0	20	0
3,800 - 3,999	34	6	1	27	0
4,000 - 4,199	28	7	1	20	0
4,200 - 4,399	22	3	0	19	0
4,400 - 4,599	15	4	0	11	0
4,600 - 4,799	12	3	0	9	0
4,800 - 4,999	10	5	0	5	0
5,000 & over	38	8	0	30	0

\* Includes Rule of 85, Rule of 88, and Rule of 90.

**TABLE 14-A*****Current Plan Pensioners in Force as of July 1, 2013  
by Type of Pension and Nearest Age******(Males – Main System, Judges, National Guard, and Law Enforcement)***

Nearest Age	Total	Type of Pension			
		Normal	Early	Service*	Disability
Total	3,313	1,066	715	1,381	151
Under 50	10	0	0	0	10
50 - 54	30	0	0	18	12
55 - 59	143	6	16	96	25
60 - 64	456	18	97	300	41
65 - 69	829	223	200	384	22
70 - 74	704	281	152	256	15
75 - 79	509	211	94	189	15
80 - 84	342	154	82	98	8
85 - 89	194	111	51	30	2
90 & over	96	62	23	10	1

\* Includes Rule of 85, Rule of 88, and Rule of 90.

**TABLE 14-B**

***Current Plan Pensioners in Force as of July 1, 2013  
by Type of Pension and Nearest Age***

***(Females – Main System, Judges, National Guard, and Law Enforcement)***

Nearest Age	Total	Type of Pension			
		Normal	Early	Service*	Disability
Total	4,613	1,481	1,573	1,375	184
Under 50	11	0	0	0	11
50 - 54	33	1	0	14	18
55 - 59	173	1	38	106	28
60 - 64	602	13	228	327	34
65 - 69	1,139	320	366	420	33
70 - 74	953	383	281	259	30
75 - 79	741	283	282	162	14
80 - 84	480	219	192	58	11
85 - 89	305	151	128	23	3
90 & over	176	110	58	6	2

\* Includes Rule of 85, Rule of 88, and Rule of 90.

**TABLE 14-C*****Current Plan Pensioners in Force as of July 1, 2013  
by Type of Pension and Nearest Age******(All Members – Main System, Judges, National Guard, and Law Enforcement)***

Nearest Age	Total	Type of Pension			
		Normal	Early	Service*	Disability
Total	7,926	2,547	2,288	2,756	335
Under 50	21	0	0	0	21
50 - 54	63	1	0	32	30
55 - 59	316	7	54	202	53
60 - 64	1,058	31	325	627	75
65 - 69	1,968	543	566	804	55
70 - 74	1,657	664	433	515	45
75 - 79	1,250	494	376	351	29
80 - 84	822	373	274	156	19
85 - 89	499	262	179	53	5
90 & over	272	172	81	16	3

\* Includes Rule of 85, Rule of 88, and Rule of 90.



**TABLE 15**

*Special Prior Service Pensions in Force on July 1, 2013  
by Monthly Amount*

Monthly Amount	Male	Female	Total
Total	2	7	9
Under \$20	1	2	3
20 - 39	0	2	2
40 - 59	0	2	2
60 - 79	1	1	2

**TABLE 16**

*Special Prior Service Pensions in Force on July 1, 2013  
by Nearest Age*

Nearest Age	Male	Female	Total
Total	2	7	9
95 - 99	1	3	4
100 & Over	1	4	5