



**NORTH DAKOTA  
PUBLIC EMPLOYEES  
RETIREMENT SYSTEM**

**ACTUARIAL VALUATION AND REVIEW  
AS OF JULY 1, 2014**



 Segal Consulting



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November 14, 2014

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, 2014 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 2014-2015 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,

A handwritten signature in blue ink, appearing to read "BRAMIREZ".

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Brad Ramirez, FSA, MAAA, FCA, EA  
Vice President & Consulting Actuary

A handwritten signature in black ink, appearing to read "Tammy F. Dixon".

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

A handwritten signature in black ink, appearing to read "Laura L. Mitchell".

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Laura L. Mitchell, MAAA, EA  
Vice President & Consulting 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, 2014. 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, 2014;
3. The assets of the System as of June 30, 2014; 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. The measurements in this valuation are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation.

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 contribution rates are not sufficient to meet the actuarially determined requirement for 2014-2015, based upon the actuarial assumptions and financing objectives approved by the Board. If unchanged, this difference will further increase the actuarial contribution requirement in future valuations.
- The PERS Board has recommended contribution increases in each of the last two legislative sessions and continues to review 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 2014-2015 are as follows:

	Amount	Percentage of Payroll	Statutory/Approved Contribution Rate
Main System	\$104,636,238	11.06%	7.12%
Judges	1,030,705	14.80	17.52
National Guard	97,523	8.14	7.00
Law Enforcement with prior Main System service	1,479,482	9.52	9.81*
Law Enforcement without prior Main System service	270,026	7.42	7.93

\* Bureau of Criminal Investigation rate is 10.31%.

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

	2014-2015	2013-2014
Main System	11.06%	12.14%
Judges	14.80	16.66
National Guard	8.14	9.07
Law Enforcement with prior Main System service	9.52	11.18
Law Enforcement without prior Main System service	7.42	8.11

- The employer actuarial contribution requirement for the Main System for 2014-2015 is \$104,636,238, or 11.06% of payroll and exceeds the statutory rate of 7.12% of payroll as of the valuation date by 3.94%. Last year, the actuarial contribution requirement was 12.14%, and the deficit was 4.52% based on the ultimate statutory rates.
- 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. We recommend an update to the experience study be performed in the 2014-2015 plan year.
- The return on the market value of assets for 2014-2015 for the PERS Fund was 16.14%, compared to 13.40% for the preceding year. The return on the actuarial value of assets for 2014-2015 for the PERS Fund was 12.19% compared to the investment return assumption of 8.00%. As a result, the PERS Fund experienced an investment gain on an actuarial value basis of approximately \$70.6 million.
- A comparison of this year's funded ratio to the prior year's ratio is as follows:

	July 1, 2014	July 1, 2013
Actuarial Value of Assets	\$1,895,837,734	\$1,682,958,527
Actuarial Accrued Liability	\$2,938,752,157	\$2,716,494,799
Funded Ratio	64.5%	62.0%

- The ratio of the actuarial value of assets to the market value of assets for the PERS Fund is 83.1%. Last year, this ratio was 86.0%. The unrecognized appreciation represents about 16.9% 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. 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 64.5% to 77.6%.
  - If the unrecognized appreciation were recognized immediately in the actuarial value of assets, the actuarial contribution requirement as a percent of payroll would decrease as follows:

	2014-2015 Actuarial Contribution Requirement	2014-2015 Contribution Reflecting Unrecognized Appreciation
Main System	11.06%	8.30%
Judges	14.80	7.27
National Guard	8.14	5.07
Law Enforcement with prior Main System service	9.52	7.88
Law Enforcement without prior Main System service	7.42	6.70

- The Governmental Accounting Standards Boards (GASB) recently approved two new Statements. Statement 67 replaces Statement 25 and governs plan reporting. Statement 68 replaces Statement 27 and governs employer reporting. It is important to note that the new GASB rules only redefine liabilities and pension expense for financial reporting purposes, and do not apply to contribution amounts for funding purposes. These statements are applicable for preparing the 2013/2014 fiscal year financial statements for the plan and for the 2014-2015 fiscal year financial statements for contributing employers. The information required by these statements will be provided in a separate report.
- The actuarial valuation report as of July 1, 2014 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.

# 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, 2013 and July 1, 2014 is summarized below:

Category	Year Beginning July 1		Change From Prior Year
	2014	2013	
<b>Main:</b>			
Number	21,814	21,201	2.9%
Average age	46.7	47.1	N/A
Average service credit	10.1	10.4	N/A
Total compensation	\$946,197,522	\$865,868,265	9.3%
Average compensation	43,376	40,841	6.2%
Contribution account balance	732,118,862	674,447,937	8.6%
<b>Judges:</b>			
Number	50	49	2.0%
Average age	58.7	58.6	N/A
Average service credit	16.8	18.3	N/A
Total compensation	\$6,964,502	\$6,598,981	5.5%
Average compensation	139,290	134,673	3.4%
Contribution account balance	6,561,621	6,936,518	-5.4%
<b>National Guard:</b>			
Number	27	39	-30.8%
Average age	37.6	36.5	N/A
Average service credit	6.6	5.5	N/A
Total compensation	\$1,198,481	\$1,691,014	-29.1%
Average compensation	44,388	43,359	2.4%
Contribution account balance	478,373	567,302	-15.7%
<b>Law Enforcement with prior Main System service:</b>			
Number	288	229	25.8%
Average age	38.3	38.5	N/A
Average service credit	7.0	7.3	N/A
Total compensation	\$15,534,493	\$11,703,913	32.7%
Average compensation	53,939	51,109	5.5%
Contribution account balance	6,349,033	5,534,559	14.7%
<b>Law Enforcement without prior Main System service:</b>			
Number	83	70	18.6%
Average age	38.2	37.5	N/A
Average service credit	3.6	3.3	N/A
Total compensation	\$3,641,404	\$2,589,887	40.6%
Average compensation	43,872	36,998	18.6%
Contribution account balance	1,004,240	408,861	145.6%
<b>All active members:</b>			
Number	22,262	21,588	3.1%
Average age	46.6	47.0	N/A
Average service credit	10.1	10.4	N/A
Total compensation	\$973,536,402	\$888,452,060	9.6%
Average compensation	43,731	41,155	6.3%
Contribution account balance	746,512,129	687,895,177	8.5%

Distributions of the active members by sex, age, and service are presented in Tables 9-A, 9-B and 9-C of Appendix B. 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	839	9	1	32	6	887
Rule of 85	1,465	5	0	1	0	1,471
Early Retirement	<u>3,680</u>	<u>18</u>	<u>3</u>	<u>15</u>	<u>5</u>	<u>3,721</u>
Total Retirement	5,984	32	4	48	11	6,079
Deferred Retirement	<u>9,456</u>	<u>10</u>	<u>13</u>	<u>117</u>	<u>26</u>	<u>9,622</u>
Total vested	15,440	42	17	165	37	15,701
Nonvested	<u>6,374</u>	<u>8</u>	<u>10</u>	<u>123</u>	<u>46</u>	<u>6,561</u>
Total	21,814	50	27	288	83	22,262

### ***Transfers***

Some active and inactive 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	-	25	2	116	28	35	206
Judges	2	-	-	-	-	-	2
National Guard	6	-	-	-	-	-	6
Law Enforcement with prior Main System service	28	-	-	3*	2	2	35
Law Enforcement without prior Main System service	20	-	-	3	-	-	23
Highway Patrol	<u>11</u>	<u>-</u>	<u>-</u>	<u>2</u>	<u>-</u>	<u>-</u>	<u>13</u>
Total	67	25	2	124	30	37	285

\*3 Law Enforcement participants with prior Main System service are now employed by BCI.

### ***Inactive Members***

There were 4,363 inactive members (including 1 from Judges, 10 from National Guard, 34 from Law Enforcement with prior Main System service, and 15 from Law Enforcement without prior Main System service) as of July 1, 2014 with vested rights to deferred retirement benefits. The average deferred monthly benefit for this group was \$425.

There were also 18 members from the Main System, 1 member from National Guard and 1 member from Law Enforcement with prior Main System service on leave of absence. For this group, a liability is carried for the deferred retirement benefits for 9 vested participants. The remaining 11 members from the Main System are valued as due refunds.

There were 4,039 inactive members that are due refunds (including 2 from Judges, 18 from National Guard, 24 from Law Enforcement with prior Main System service, and 10 from Law Enforcement without prior Main System service).

### ***Retired Members***

There were 8,535 pensioners and 820 beneficiaries receiving average monthly benefits of \$1,034 as of July 1, 2014. During the year ended June 30, 2014, 793 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, 2014. Tables 13-A through 14-C present the same information for all pensions in pay status as of June 30, 2014.

Additionally, there were 7 pensioners receiving benefits under the Special Prior Service Plan. Their monthly benefits and ages are shown on Tables 15 and 16.

# Benefit Experience

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## *New Awards*

During the fiscal year ended in June 2014, 793 pensions became effective. The average monthly benefit for these pensioners was \$1,351 and their average age at retirement was 63.3. Last year, the average benefit among new pensioners was \$1,350. 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, 2014</u>	<u>July 1, 2013</u>
Normal	336	273
Rule of 85	264	223
Early	175	133
Disability	<u>18</u>	<u>22</u>
Total	793	651

## *Pensioners*

Since benefits became payable under the current retirement program, a total of 12,113 retirement pensions have been awarded, of which 8,511 remained on the June 2014 rolls (including 29 retired Judges and 56 retired members of the National Guard/Law Enforcement). In addition, 24 pensions were in suspended status as of June 30, 2014. 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, 2014, the average monthly benefit was \$1,072, an increase of \$32 from \$1,040 a year earlier. The average age of these pensioners on the valuation date was 72.0 years.

## *Beneficiaries*

As of July 1, 2014, monthly benefit payments were being made to 820 beneficiaries, including 9 beneficiaries of Judges and 7 beneficiaries of National Guard/Law Enforcement. The monthly payments to beneficiaries in payment status total \$531,522.

## *Prior Service Pensioners*

As of July 1, 2014, there were 7 pensioners receiving monthly benefits totaling \$194 under the Special Prior Service Pension provisions of the System. The current average age of Prior Service pensioners was 100.2 years, and the average monthly benefit was \$28. 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, 2014, the combined market value of net assets of the North Dakota Public Employees Retirement System (PERS) and Highway Patrolmen's Retirement System (HPRS) was \$2,347,301,808, an increase of \$332.6 million compared to \$2,014,714,110 a year earlier. This year's combined market value represents an increase of 16.5% 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, 2014</u>	<u>July 1, 2013</u>
Main System	\$2,211,910,482	\$1,899,458,667
Judges	42,713,635	36,525,294
National Guard	3,111,655	2,695,283
Law Enforcement with prior Main System service	21,694,853	17,820,673
Law Enforcement without prior Main System service	<u>2,204,318</u>	<u>1,170,109</u>
Total	\$2,281,634,943	\$1,957,670,026

The rate of return on the market value basis for the PERS Fund was 16.15% for the year ended June 30, 2014.

## *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 \$1,950,401,117 as of June 30, 2014. The determination of the combined actuarial asset value is shown in Table 1. This table shows that there is approximately \$397 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 \$879,027,400 on an actuarial value basis represented an average annual return of 5.79%. For the 2013-2014 year, the actuarial rate of return on the combined assets was 12.20%.

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, 2014</u>	<u>July 1, 2013</u>
Main System	\$1,837,902,845	\$1,632,915,720
Judges	35,491,270	31,399,855
National Guard	2,585,512	2,317,065
Law Enforcement with prior Main System service	18,026,513	15,319,974
Law Enforcement without prior Main System service	<u>1,831,594</u>	<u>1,005,913</u>
Total	\$1,895,837,734	\$1,682,958,527

Chart 1 on page 15 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 2014 and 2013 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 19. 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>
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
2014	16.15	12.20

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 20 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, 2014 and 2013***

<u>Year Ending</u>	<u>Market Value Appreciation (Depreciation)*</u>	<u>June 30, 2014</u>		<u>June 30, 2013</u>	
		<u>Percent Deferred</u>	<u>Amount Deferred</u>	<u>Percent Deferred</u>	<u>Amount Deferred</u>
June 30, 2010	\$153,004,660	0%	\$0	20%	30,600,932
June 30, 2011	288,857,273	20%	57,771,455	40%	115,542,909
June 30, 2012	(40,138,712)	40%	(16,055,485)	60%	(24,083,227)
June 30, 2013	200,819,548	60%	120,491,729	80%	160,655,638
June 30, 2014	293,366,241	80%	<u>234,692,993</u>	N/A	<u>N/A</u>
Total Deferred as of Valuation Date			\$396,900,691		\$109,700,523
(a)	Total Appreciation (Depreciation) for last five Plan Years		\$895,909,010		\$(195,103,907)
(b)	Write-Up/(Down) Amount for the year - equals 20% of (a)		179,181,802		(39,020,781)
			<u>June 30, 2014</u>		<u>June 30, 2013</u>
Market Value of Assets			\$2,347,301,808		\$2,014,714,110
Less: Deferred Appreciation (Depreciation)			<u>396,900,691</u>		<u>282,716,252</u>
Actuarial value of assets			\$1,950,401,117		\$1,731,997,858
Actuarial Value as a Percent of Market Value			83.1%		86.0%

\* 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
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
2014	32,503,200	1.87	179,181,900	10.33	211,685,100	12.20
Total for Last Ten Years	\$312,059,800		\$566,967,600		\$879,027,400	
Average Yield for last Ten Years						5.79%

\* Net of investment expenses.

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

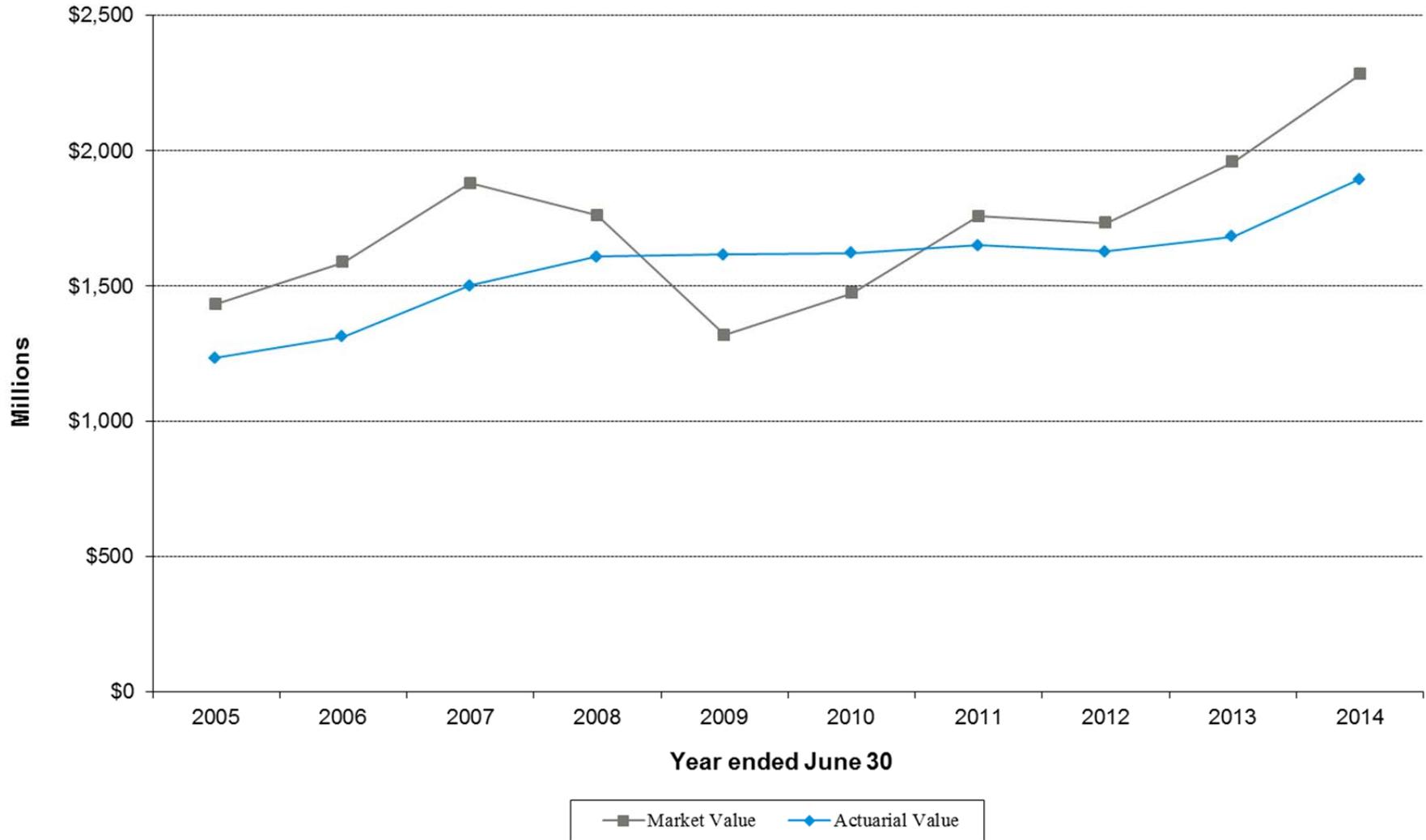
**TABLE 3***Allocation of Combined (PERS and HPRS) Actuarial Value of Assets*

	July 1, 2014		July 1, 2013	
	<u>Market Value</u>	<u>Actuarial Value</u>	<u>Market Value</u>	<u>Actuarial Value</u>
PERS Main System	\$2,211,910,482	\$1,837,902,845	\$1,899,458,667	\$1,632,915,720
PERS Judges	42,713,635	35,491,270	36,525,294	31,399,855
PERS National Guard	3,111,655	2,585,512	2,695,283	2,317,065
PERS Law Enforcement with prior Main System service	21,694,853	18,026,513	17,820,673	15,319,974
PERS Law Enforcement without prior Main System service	<u>2,204,318</u>	<u>1,831,594</u>	<u>1,170,109</u>	<u>1,005,913</u>
PERS Combined	\$2,281,634,943	\$1,895,837,734	\$1,957,670,026	\$1,682,958,527
Highway Patrol	<u>65,666,865</u>	<u>54,563,383</u>	<u>57,044,084</u>	<u>49,039,331</u>
Total	\$2,347,301,808	\$1,950,401,117	\$2,014,714,110	\$1,731,997,858

*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, 2014	Year Ended June 30, 2013
<b>Contribution Income:</b>		
Employer Contributions	\$61,661,050	\$48,846,796
Member Contributions	59,394,200	46,815,060
Service Credit Repurchases	<u>8,325,140</u>	<u>7,470,218</u>
Total Contribution Income	\$129,380,390	\$103,132,074
Less: Administrative Expenses	<u>(2,158,712)</u>	<u>(2,059,315)</u>
Net Contribution Income	\$127,221,678	\$101,072,759
<b>Investment Income:</b>		
Interest and Dividends	\$39,772,701	\$43,509,791
Less: Investment Expenses	<u>(8,191,090)</u>	<u>(6,713,127)</u>
Net Interest and Dividends	\$31,581,611	\$36,796,664
Write-up/(down) of Assets	<u>173,962,242</u>	<u>26,985,569</u>
Net Investment Income	<u>\$205,543,853</u>	<u>\$63,782,233</u>
Total Income Available for Benefit Payments and Reserves	<u>\$332,765,531</u>	<u>\$164,854,992</u>
<b>Benefit Payments:</b>		
Pension Benefits	\$(113,300,699)	\$(103,295,777)
Transfers to Other Plans	(347,783)	(212,500)
Refunds	<u>(6,237,842)</u>	<u>(5,783,824)</u>
Total Benefit Payments	<u>\$(119,886,324)</u>	<u>\$(109,292,101)</u>
Addition to Reserve for Future Benefit Payments	\$212,879,207	\$55,562,891
Actuarial Value of Assets, Start of Year	<u>1,682,958,527</u>	<u>1,627,395,636</u>
Actuarial Value of Assets, End of Year	<u>\$1,895,837,734</u>	<u>\$1,682,958,527</u>

**TABLE 5****Summary Statement of Assets for PERS  
(based on unaudited financial statements)**

	Year Ended June 30, 2014	Year Ended June 30, 2013
Cash	\$5,991,879	\$5,552,040
Receivables:		
Contribution receivable	\$10,197,356	\$8,338,059
Interest receivable	3,259,339	3,488,652
Due from fiduciary funds	272,233	104,387
Due from other state agencies	<u>19,000</u>	<u>1,180</u>
Total receivables	13,747,928	11,932,278
Investments:		
Domestic equities	\$509,920,969	\$430,105,553
International equities	695,332,269	591,307,961
International fixed income	112,293,730	91,424,799
Domestic fixed income	421,096,933	337,477,792
Real estate	396,107,838	364,354,225
Alternative investments	103,079,973	99,995,649
Invested cash	<u>25,947,939</u>	<u>25,694,768</u>
Total investments	2,263,779,651	1,940,360,747
Equipment	0	1,582
Software (net of amortization)	<u>2,426,891</u>	<u>2,810,501</u>
Total assets	\$2,285,946,349	\$1,960,657,148
Liabilities:		
Salaries payable	\$(87,106)	\$(79,609)
Accounts payable	(4,077,820)	(2,726,522)
Due to fiduciary funds	(12,492)	(69,042)
Due to proprietary funds	(31,160)	(6,160)
Due to other state agencies	(8,473)	(16,511)
Benefits payable	0	0
Securities lending collateral	0	0
Accrued compensated absences	<u>(94,355)</u>	<u>(89,278)</u>
Total liabilities	(4,311,406)	(2,987,122)
Net assets at market value	<u>\$2,281,634,943</u>	<u>\$1,957,670,026</u>
Net assets at actuarial value	<u>\$1,895,837,734</u>	<u>\$1,682,958,527</u>

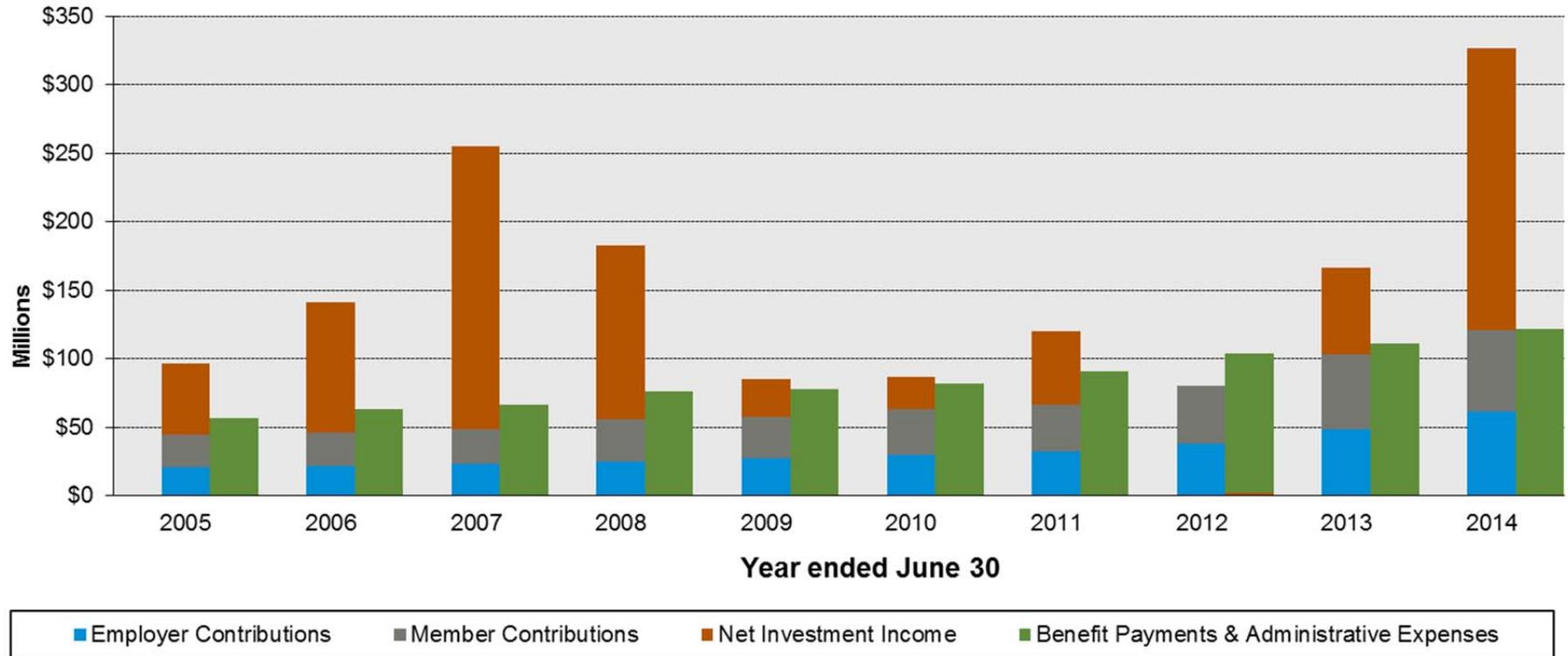
**TABLE 6*****Progress of the PERS Fund through June 30, 2014  
on an Actuarial Value Basis***

Year Ended June 30	Employer Contributions	Member Contributions*	Administrative Expenses	Net Investment Income	Transfers From/(To) Other Plans	Benefit Payments and Refunds	Fund at End Of Year
2004							\$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)	(109,079,601)	1,682,958,527
2014	61,661,050	67,719,340	(2,158,712)	205,543,853	(347,783)	(119,538,541)	1,895,837,734
Total for Last Ten Years	\$329,818,543	\$362,943,945	\$(14,685,079)	\$851,938,245	\$1,085,608	\$(831,796,610)	

\* Includes repurchases of service credit.

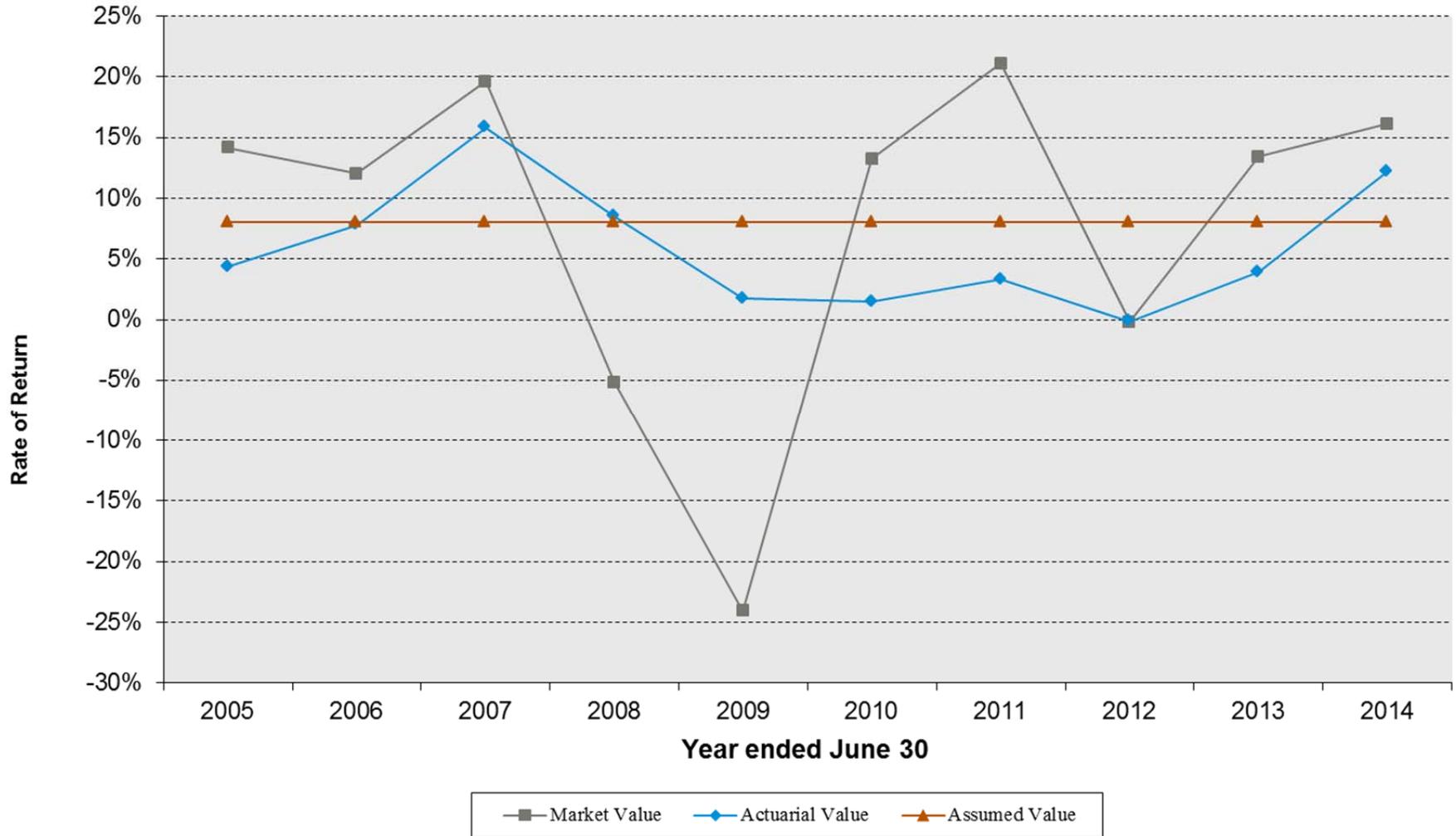
**CHART 2**

**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 2014-2015 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 2014 – 2015</u>	<u>Percentage of Payroll</u>
Total normal cost	\$97,983,204	10.36%
Less: Member contributions	<u>(66,233,827)</u>	<u>(7.00)</u>
Net employer normal cost	\$31,749,377	3.36%
Administrative expense allowance	1,100,000	0.12
Amortization payment (credit)	<u>71,786,861</u>	<u>7.58</u>
Total employer contribution requirement	\$104,636,238	11.06%

Covered payroll is \$946,197,522.

The total statutory contribution rate is 14.12% of payroll (7.00% for the member and 7.12% for the employer) as of July 1, 2014, resulting in a deficit of 3.94% 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. If deferred asset appreciation were taken into account on the valuation date, the effective amortization period would be 30.9 years.

The total employer contribution requirement was 12.14% of payroll last year, resulting in a deficit of 4.52% based on the ultimate statutory contribution rates. Table 7 presents a detailed explanation of the factors that changed the employer contribution requirement from July 1, 2013 to July 1, 2014.

## *Judges*

The components of the actuarial contribution requirement are shown below:

	<u>Amount for 2014 – 2015</u>	<u>Percentage of Payroll</u>
Total normal cost	\$1,322,926	19.00%
Less: Member contributions	<u>(557,160)</u>	<u>(8.00)</u>
Net employer normal cost	\$765,766	11.00%
Administrative expense allowance	7,500	0.11
Amortization payment (credit)	<u>257,439</u>	<u>3.69</u>
Total employer contribution requirement	\$1,030,705	14.80%

Covered payroll is \$6,964,502.

The total statutory contribution rate is 25.52% of payroll (8.00% for the member and 17.52% for the employer) as of July 1, 2014, resulting in a margin of 2.72% of payroll and an effective amortization period of 9.7 years. If deferred asset appreciation were taken into account on the valuation date, the assets would exceed the Actuarial Accrued Liability and no amortization would be required.

The total employer contribution requirement was 16.66% of payroll last year, resulting in a margin of 1.36% based on the ultimate statutory contribution rates.

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, 2013	16.66%
Employee contribution rate increase	(0.50)
Investment gain (includes gains due to contributions)	(1.45)
Other Plan experience during the year	0.22
Effect of 20-year open amortization schedule	<u>(0.13)</u>
Employer contribution rate as of July 1, 2014	14.80%

## *National Guard*

The components of the actuarial contribution requirement are shown below:

	<u>Amount for 2014 – 2015</u>	<u>Percentage of Payroll</u>
Total normal cost	\$123,453	10.30%
Less: Member contributions	<u>(53,932)</u>	<u>(4.50)</u>
Net employer normal cost	\$69,521	5.80%
Administrative expense allowance	3,000	0.25
Amortization payment (credit)	<u>25,002</u>	<u>2.09</u>
Total employer contribution requirement	\$97,523	8.14%

Covered payroll is \$1,198,481.

The total approved employer contribution rate is 11.5% of payroll (4.5% for the member and 7.0% for the employer) as of July 1, 2014, resulting in a deficit of 1.14% of payroll and 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. If deferred asset appreciation were taken into account on the valuation date, the assets would exceed the Actuarial Accrued Liability and no amortization would be required.

The total employer contribution requirement was 9.07% of payroll last year, resulting a deficit of 1.82% based on the ultimate statutory contribution rates.

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, 2013	9.07%
Employee contribution rate increase	(0.25)
Investment gain (includes loss due to contributions)	(0.64)
Other Plan experience during the year	0.04
Effect of 20-year open amortization schedule	<u>(0.08)</u>
Employer contribution rate as of July 1, 2014	8.14%

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

The components of the actuarial contribution requirement are shown below:

	<u>Amount for 2014 – 2015</u>	<u>Percentage of Payroll</u>
Total normal cost	\$1,649,452	10.62%
Less: Member contributions	<u>(868,378)</u>	<u>(5.59)</u>
Net employer normal cost	\$781,074	5.03%
Administrative expense allowance	2,500	0.02
Amortization payment (credit)	<u>695,908</u>	<u>4.47</u>
Total employer contribution requirement	\$1,479,482	9.52%

Covered payroll is \$15,534,493.

The approved employer contribution rate is 9.81% of payroll (10.31% for Bureau of Criminal Investigation (BCI)) as of July 1, 2014; the statutory member contribution rate is 5.50% of payroll for (6.00% for BCI). The plan has a margin of 0.38% of payroll. Under the current policy and statute, this segment has an effective amortization period of 17.9 years. If deferred asset appreciation were taken into account on the valuation date, the effective amortization period would be reduced to 10.0 years.

The total employer contribution requirement was 11.18% of payroll last year, resulting in a deficit of 1.06% based on the ultimate statutory contribution rates.

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, 2013	11.18%
Employee contribution rate increase	(0.18)
Investment gain (includes loss due to contributions)	(0.25)
Other Plan experience during the year	(1.06)
Effect of 20-year open amortization schedule	<u>(0.17)</u>
Employer contribution rate as of July 1, 2014	9.52%

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

The components of the actuarial contribution requirement are shown below:

	<u>Amount for 2014 – 2015</u>	<u>Percentage of Payroll</u>
Total normal cost	\$432,646	11.88%
Less: Member contributions	<u>(200,277)</u>	<u>(5.50)</u>
Net employer normal cost	\$232,369	6.38%
Administrative expense allowance	7,500	0.21
Amortization payment (credit)	<u>30,157</u>	<u>0.83</u>
Total employer contribution requirement	\$270,026	7.42%

Covered payroll is \$3,641,404.

The total approved contribution rate is 13.43% of payroll (5.50% for the member and 7.93% for the employer), resulting in a margin of 0.51% of payroll and an effective amortization period of 10.7 years. If deferred asset appreciation were taken into account on the valuation date, the effective amortization period would be reduced to 1.3 years.

The total employer contribution requirement was 8.11% of payroll last year, resulting in a margin of 0.07% based upon the ultimate statutory contribution rates.

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, 2013	8.11%
Plan change	(0.25)
Investment and other plan experience during the year	(0.41)
Effect of 20-year open amortization schedule	<u>(0.03)</u>
Employer contribution rate as of July 1, 2014	7.42%

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

The components of the actuarial contribution requirement are shown below.

	<u>Amount for</u> <u>2014 – 2015</u>	<u>Percentage</u> <u>of Payroll</u>
Total normal cost	\$101,511,681	10.43%
Less: Member contributions	<u>(67,913,574)</u>	<u>(6.98)</u>
Net employer normal cost	\$33,598,107	3.45%
Administrative expense allowance	1,120,500	0.11
Amortization payment (credit)	<u>72,795,367</u>	<u>7.48</u>
Total employer contribution requirement	\$107,513,974	11.04%

Covered payroll is \$973,536,402.

The total employer contribution requirement was 12.14% of payroll last year.

**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, 2013</b>	<b>12.14%</b>
<i>Retired Life Mortality</i>	(0.02)
The release of liability due to deaths among retirees and beneficiaries was greater than expected.	
<i>Withdrawals</i>	0.02
The release of liability due to withdrawals prior to retirement was less than expected.	
<i>Contributions</i>	0.29
Actual contributions were less than the employer contribution requirement	
<i>Retirement</i>	0.03
The net change in liability due to non-disability retirements was greater than expected.	
<i>Investments</i>	(0.82)
The rate of return on the actuarial value of assets was more than assumed.	
<i>Salary Scale and Service</i>	0.16
Salaries increased less than expected.	
<i>Administrative Expenses</i>	0.01
Actual expenses were more than expected.	
<i>Reinstated Members</i>	0.07
The addition reinstated members increased the plan liabilities.	
<i>Change in Size and Composition of Membership</i>	(0.04)
<i>Employee Contribution Rate Increase</i>	(0.50)
<i>Assumption Changes</i>	0.00
<i>Effect of 20-year open amortization schedule</i>	(0.28)
<b>Employer Contribution Requirement as of July 1, 2014</b>	<b>11.06%</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.

## ***Historical Results***

The funded ratios for the last ten years are developed in Table 8. These ratios are graphed in Chart 4 on page 31. The funded ratio is 64.5% using actuarial value as of June 30, 2014 and was 62.0% as of June 30, 2013. The funded ratio deteriorated from July 1, 2007 through July 1, 2013, but increased as of July 1, 2014. This pattern is due to investment losses and statutory contribution rates less than the actuarially determined contribution requirement, and a positive return on assets in 2013/2014.

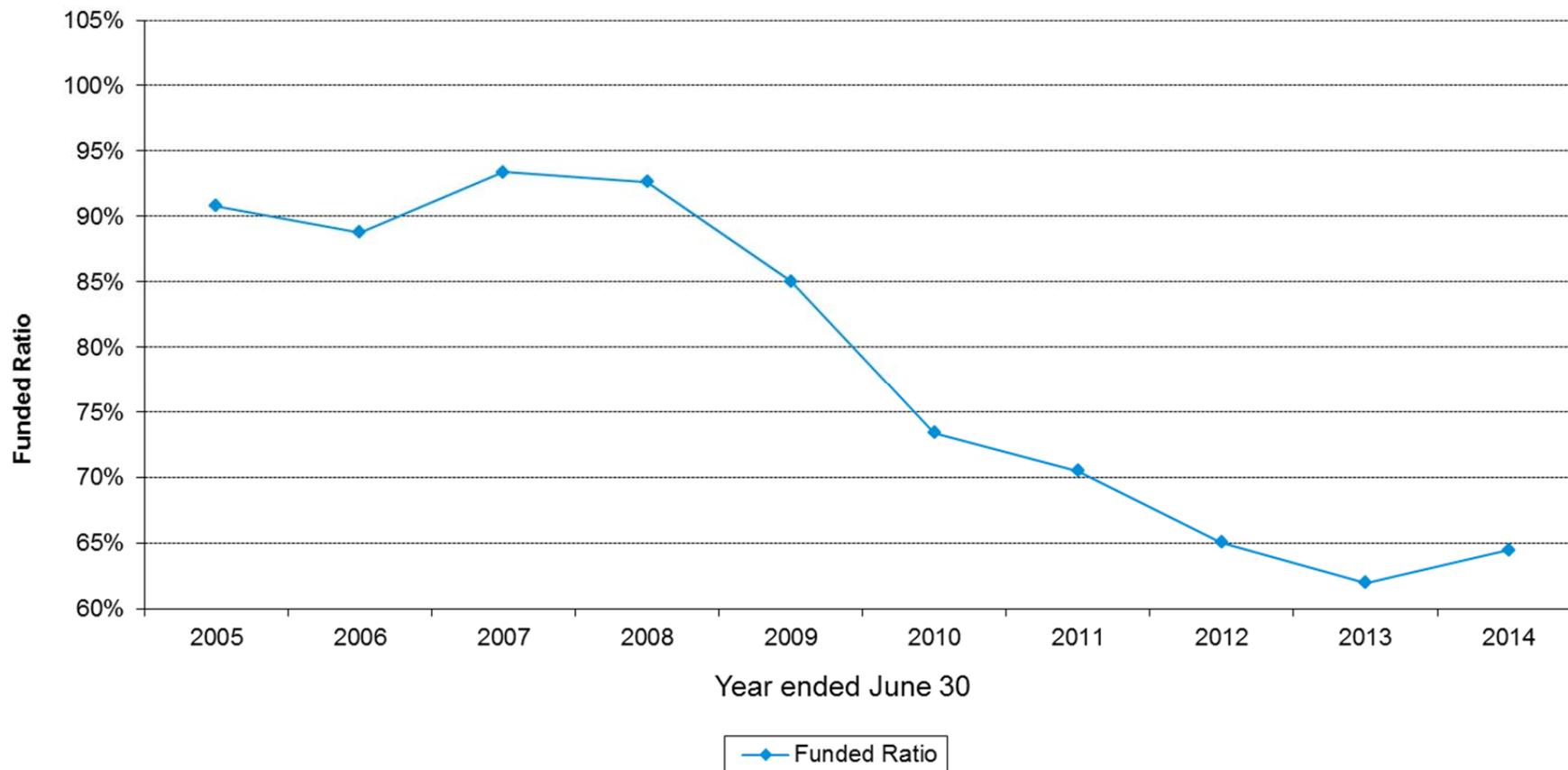
Funded ratios change over time due to several factors. These factors include the level of contributions, actual experience (including investment returns), plan amendments and changes in assumptions. In particular, the actuarial assumptions were changed in 2006 and 2010, changing the funded ratio from 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
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
2014	2,938,752,200	1,895,837,700	64.5

### 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, 2014 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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November 14, 2014

## **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, 2014 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  
Vice President & 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 & Consulting Actuary

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

1.	Actuarial accrued liability on July 1, 2014:		
	a.	Active members .....	\$1,642,970,764
	b.	Special prior service pensions .....	5,939
	c.	Retired members and beneficiaries.....	1,047,079,567
	d.	Inactive non-retired members .....	<u>176,455,020</u>
	e.	Total.....	\$2,866,511,290
2.	Assets at actuarial value (\$2,211,910,481 at market value) .....		1,837,902,845
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		1,028,608,445
4.	Member and employer normal cost for ensuing year* .....		97,983,204
5.	Estimated annual salaries of covered members .....		946,197,522
6.	Member normal cost - equals 7.00% of (5) .....		66,233,827
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		31,749,377
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		71,786,861
9.	Administrative expenses .....		1,100,000
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		104,636,238
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		11.06%

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

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

1.	Actuarial accrued liability on July 1, 2014:		
	a. Active members .....	\$20,880,207	
	b. Retired members and beneficiaries.....	15,910,663	
	c. Inactive non-retired members .....	<u>2,244,603</u>	
	d. Total.....		\$39,035,473
2.	Assets at actuarial value (\$42,713,635 at market value) .....		35,491,270
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		3,544,203
4.	Member and employer normal cost for ensuing year* .....		1,322,926
5.	Estimated annual salaries of covered members .....		6,964,502
6.	Member normal cost - equals 8.00% of (5) .....		557,160
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		765,766
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		257,439
9.	Administrative expenses .....		7,500
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		1,030,705
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		14.80%

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

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

1.	Actuarial accrued liability on July 1, 2014:		
	a. Active members .....	\$1,369,026	
	b. Retired members and beneficiaries.....	1,088,066	
	c. Inactive non-retired members .....	<u>486,665</u>	
	d. Total.....		\$2,943,757
2.	Assets at actuarial value (\$3,111,655 at market value) .....		2,585,512
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		358,245
4.	Member and employer normal cost for ensuing year* .....		123,452
5.	Estimated annual salaries of covered members .....		1,198,481
6.	Member normal cost - equals 4.50% of (5) .....		53,932
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		69,521
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		25,002
9.	Administrative expenses .....		3,000
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		97,523
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		8.14%

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

**EXHIBIT I-D**

**ACTUARIAL VALUATION RESULTS**

**LAW ENFORCEMENT WITH PRIOR MAIN SYSTEM SERVICE**

1.	Actuarial accrued liability on July 1, 2014:		
a.	Active members.....	\$16,307,506	
b.	Retired members and beneficiaries.....	10,594,682	
c.	Inactive non-retired members.....	<u>1,095,741</u>	
d.	Total.....		\$27,997,929
2.	Assets at actuarial value (\$21,694,853 at market value) .....		18,026,513
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		9,971,416
4.	Member and employer normal cost for ensuing year* .....		1,649,452
5.	Estimated annual salaries of covered members .....		15,534,493
6.	Member normal cost - equals 5.59%** of (5) .....		868,378
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		781,074
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		695,908
9.	Administrative expenses.....		2,500
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		1,479,482
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		9.52%

\* Adjusted for interest to recognize payments throughout 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, 2014:		
	a.	Active members.....	\$1,832,682
	b.	Retired members and beneficiaries.....	95,298
	c.	Inactive non-retired members.....	<u>335,727</u>
	d.	Total.....	\$2,263,707
2.	Assets at actuarial value (\$2,204,318 at market value) .....		1,831,594
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		432,113
4.	Member and employer normal cost for ensuing year* .....		432,646
5.	Estimated annual salaries of covered members .....		3,641,404
6.	Member normal cost - equals 5.50% of (5) .....		200,277
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		232,369
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		30,157
9.	Administrative expenses .....		7,500
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		270,026
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		7.42%

\* Adjusted for interest to recognize payments throughout 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, 2014:		
	a.	Active members .....	\$1,683,360,185
	b.	Special prior service pensions .....	5,939
	c.	Retired members and beneficiaries.....	1,074,768,276
	d.	Inactive non-retired members .....	<u>180,617,756</u>
	e.	Total.....	\$2,938,752,156
2.	Assets at actuarial value (\$2,281,634,942 at market value) .....		1,895,837,734
3.	Unfunded/(Surplus) actuarial accrued liability - equals (1) minus (2) .....		1,042,914,422
4.	Member and employer normal cost for ensuing year* .....		101,511,680
5.	Estimated annual salaries of covered members .....		973,536,402
6.	Member normal cost .....		67,913,574
7.	Employer normal cost for ensuing year - equals (4) minus (6) .....		33,598,106
8.	Amortization payment - equals 20-year amortization of item (3) as a level percent of aggregate salary* .....		72,795,367
9.	Administrative expenses .....		1,120,500
10.	Total employer cost for ensuing year - equals (7) plus (8) plus (9).....		107,513,973
11.	Total employer cost as percentage of payroll – equals (10) divided by (5).....		11.04%

*\* Adjusted for interest to recognize payments throughout 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.



**20. Benefit Election:**

100% of the married participants elect the 50% joint and survivor annuity and 100% of the unmarried participants elect the life annuity.

### **EXHIBIT III**

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

There were no changes in actuarial assumptions or cost methods since the prior 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	7.00%	7.12%	
Main System Part-Time Employees	14.12%	0.00%	
Judges	8.00%	17.52%	
National Guard	4.50%		7.00%
Law Enforcement with prior Main System service	5.50%		9.81%
BCI Employees	6.00%		10.31%
Law Enforcement without prior Main System service	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 were increased 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
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, 2014  
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	8,846	3,559	1,908	1,076	805	547	438	316	197
Under 20	6	6	0	0	0	0	0	0	0
20 – 24	269	269	0	0	0	0	0	0	0
25 – 29	819	706	113	0	0	0	0	0	0
30 – 34	924	554	311	59	0	0	0	0	0
35 – 39	910	430	286	150	43	1	0	0	0
40 – 44	876	325	215	160	150	26	0	0	0
45 – 49	972	315	210	139	133	135	39	1	0
50 – 54	1,219	332	241	190	138	123	134	58	3
55 – 59	1,359	339	234	162	151	121	152	143	57
60 – 64	1,025	200	175	128	135	107	89	87	104
65 – 69	333	63	79	59	38	25	18	23	28
70 – 74	98	15	35	18	11	8	4	3	4
75 & over	36	5	9	11	6	1	2	1	1

**TABLE 9-B**

*Census of Members in Active Service on July 1, 2014  
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	13,416	5,551	2,783	1,714	1,262	820	638	397	251
Under 20	9	9	0	0	0	0	0	0	0
20 – 24	366	366	0	0	0	0	0	0	0
25 – 29	1,037	950	87	0	0	0	0	0	0
30 – 34	1,222	828	345	49	0	0	0	0	0
35 – 39	1,367	764	366	193	44	0	0	0	0
40 – 44	1,477	685	364	220	167	41	0	0	0
45 – 49	1,619	603	392	242	159	153	64	6	0
50 – 54	2,160	582	455	357	273	171	183	135	4
55 – 59	2,170	464	408	328	313	212	184	147	114
60 – 64	1,474	226	257	235	227	187	157	80	105
65 – 69	402	53	87	74	60	45	41	21	21
70 – 74	75	13	15	9	9	10	7	7	5
75 & over	38	8	7	7	10	1	2	1	2

**TABLE 9-C**

***Census of Members in Active Service on July 1, 2014  
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	22,262	9,110	4,691	2,790	2,067	1,367	1,076	713	448
Under 20	15	15	0	0	0	0	0	0	0
20 – 24	635	635	0	0	0	0	0	0	0
25 – 29	1,856	1,656	200	0	0	0	0	0	0
30 – 34	2,146	1,382	656	108	0	0	0	0	0
35 – 39	2,277	1,194	652	343	87	1	0	0	0
40 – 44	2,353	1,010	579	380	317	67	0	0	0
45 – 49	2,591	918	602	381	292	288	103	7	0
50 – 54	3,379	914	696	547	411	294	317	193	7
55 – 59	3,529	803	642	490	464	333	336	290	171
60 – 64	2,499	426	432	363	362	294	246	167	209
65 – 69	735	116	166	133	98	70	59	44	49
70 – 74	173	28	50	27	20	18	11	10	9
75 & over	74	13	16	18	16	2	4	2	3

**TABLE 10-A**

*Census of Members in Active Service on July 1, 2014  
by Nearest Age and Salary*

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

Nearest Age	Annualized Salary										
	Total	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	8,820	88	150	187	394	559	937	1,009	1,157	1,038	3,301
Under 20	5	1	0	2	1	0	1	0	0	0	0
20 – 24	265	4	3	14	26	32	79	49	26	21	11
25 – 29	814	18	9	17	65	68	138	141	111	101	146
30 – 34	920	8	9	13	36	52	89	123	165	144	281
35 – 39	910	3	4	13	31	49	94	103	126	121	366
40 – 44	870	5	6	12	32	48	81	96	113	100	377
45 – 49	971	9	7	10	31	47	94	104	133	122	414
50 – 54	1,217	11	14	14	46	76	103	149	162	120	522
55 – 59	1,358	12	21	23	44	83	116	124	177	162	596
60 – 64	1,023	5	30	25	41	63	103	81	113	107	455
65 – 69	333	4	27	24	24	30	30	29	26	31	108
70 – 74	98	5	10	11	12	9	9	8	5	7	22
75 & over	36	3	10	9	5	2	0	2	0	2	3

**TABLE 10-B*****Census of Members in Active Service on July 1, 2014  
by Nearest Age and Salary******(Females – Main System, Judges, National Guard, and Law Enforcement)***

Nearest Age	Annualized Salary										
	Total	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	13,393	289	483	1,320	1,542	1,551	1,738	1,522	1,348	1,092	2,508
Under 20	9	1	2	1	1	2	1	1	0	0	0
20 – 24	364	23	34	74	68	55	55	23	19	10	3
25 – 29	1,029	46	44	108	128	132	136	130	123	92	90
30 – 34	1,220	41	51	114	111	116	156	149	156	110	216
35 – 39	1,363	44	60	155	134	130	150	127	167	115	281
40 – 44	1,477	32	62	158	177	146	167	163	155	132	285
45 – 49	1,614	23	52	167	202	182	195	196	152	123	322
50 – 54	2,158	21	44	216	243	248	296	271	184	166	469
55 – 59	2,170	28	50	166	276	272	298	242	212	174	452
60 – 64	1,474	22	47	107	145	192	207	162	144	136	312
65 – 69	402	4	22	33	46	67	59	46	28	28	69
70 – 74	75	2	6	13	7	5	12	12	5	4	9
75 & over	38	2	9	8	4	4	6	0	3	2	0

**TABLE 10-C**

*Census of Members in Active Service on July 1, 2014  
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	22,213	377	633	1,507	1,936	2,110	2,675	2,531	2,505	2,130	5,809
Under 20	14	2	2	3	2	2	2	1	0	0	0
20 – 24	629	27	37	88	94	87	134	72	45	31	14
25 – 29	1,843	64	53	125	193	200	274	271	234	193	236
30 – 34	2,140	49	60	127	147	168	245	272	321	254	497
35 – 39	2,273	47	64	168	165	179	244	230	293	236	647
40 – 44	2,347	37	68	170	209	194	248	259	268	232	662
45 – 49	2,585	32	59	177	233	229	289	300	285	245	736
50 – 54	3,375	32	58	230	289	324	399	420	346	286	991
55 – 59	3,528	40	71	189	320	355	414	366	389	336	1,048
60 – 64	2,497	27	77	132	186	255	310	243	257	243	767
65 – 69	735	8	49	57	70	97	89	75	54	59	177
70 – 74	173	7	16	24	19	14	21	20	10	11	31
75 & over	74	5	19	17	9	6	6	2	3	4	3

**TABLE 11-A*****Pensions Awarded During the Year Ended June 30, 2014  
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	306	140	51	105	10
Under \$200	29	26	3	0	0
200 - 399	39	21	18	0	0
400 - 599	27	15	9	0	3
600 - 799	26	13	7	1	5
800 - 999	13	5	6	0	2
1,000 - 1,199	16	9	4	3	0
1,200 - 1,399	20	9	4	7	0
1,400 - 1,599	14	11	0	3	0
1,600 - 1,799	16	5	0	11	0
1,800 - 1,999	12	3	0	9	0
2,000 - 2,199	11	3	0	8	0
2,200 - 2,399	11	2	0	9	0
2,400 - 2,599	10	2	0	8	0
2,600 - 2,799	10	3	0	7	0
2,800 - 2,999	10	3	0	7	0
3,000 - 3,199	6	0	0	6	0
3,200 - 3,399	1	0	0	1	0
3,400 - 3,599	5	1	0	4	0
3,600 - 3,799	3	1	0	2	0
3,800 - 3,999	6	4	0	2	0
4,000 - 4,199	2	1	0	1	0
4,200 - 4,399	1	0	0	1	0
4,400 - 4,599	4	0	0	4	0
4,600 - 4,799	3	1	0	2	0
4,800 - 4,999	2	0	0	2	0
5,000 & over	9	2	0	7	0

**TABLE 11-B*****Pensions Awarded During the Year Ended June 30, 2014  
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	487	196	159	124	8
Under \$200	52	31	0	21	0
200 - 399	88	47	0	40	1
400 - 599	55	25	0	26	4
600 - 799	43	25	0	17	1
800 - 999	30	13	9	7	1
1,000 - 1,199	30	10	12	7	1
1,200 - 1,399	28	11	14	3	0
1,400 - 1,599	18	8	9	1	0
1,600 - 1,799	26	6	20	0	0
1,800 - 1,999	17	3	13	1	0
2,000 - 2,199	13	1	12	0	0
2,200 - 2,399	21	3	18	0	0
2,400 - 2,599	12	2	10	0	0
2,600 - 2,799	11	1	9	1	0
2,800 - 2,999	13	3	10	0	0
3,000 - 3,199	7	1	6	0	0
3,200 - 3,399	1	0	1	0	0
3,400 - 3,599	2	0	2	0	0
3,600 - 3,799	3	0	3	0	0
3,800 - 3,999	2	0	2	0	0
4,000 - 4,199	4	0	4	0	0
4,200 - 4,399	2	0	2	0	0
4,400 - 4,599	2	2	0	0	0
4,600 - 4,799	3	2	1	0	0
4,800 - 4,999	0	0	0	0	0
5,000 & over	4	2	2	0	0

**TABLE 11-C*****Pensions Awarded During the Year Ended June 30, 2014  
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	793	336	210	229	18
Under \$200	81	57	3	21	0
200 - 399	127	68	18	40	1
400 - 599	82	40	9	26	7
600 - 799	69	38	7	18	6
800 - 999	43	18	15	7	3
1,000 - 1,199	46	19	16	10	1
1,200 - 1,399	48	20	18	10	0
1,400 - 1,599	32	19	9	4	0
1,600 - 1,799	42	11	20	11	0
1,800 - 1,999	29	6	13	10	0
2,000 - 2,199	24	4	12	8	0
2,200 - 2,399	32	5	18	9	0
2,400 - 2,599	22	4	10	8	0
2,600 - 2,799	21	4	9	8	0
2,800 - 2,999	23	6	10	7	0
3,000 - 3,199	13	1	6	6	0
3,200 - 3,399	2	0	1	1	0
3,400 - 3,599	7	1	2	4	0
3,600 - 3,799	6	1	3	2	0
3,800 - 3,999	8	4	2	2	0
4,000 - 4,199	6	1	4	1	0
4,200 - 4,399	3	0	2	1	0
4,400 - 4,599	6	2	0	4	0
4,600 - 4,799	6	3	1	2	0
4,800 - 4,999	2	0	0	2	0
5,000 & over	13	4	2	7	0

**TABLE 12-A*****Pensions Awarded During the Year Ended June 30, 2014  
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	306	140	51	105	10
Under 50	1	0	0	0	1
50 - 54	7	0	0	5	2
55 - 59	34	4	9	19	2
60 - 64	107	2	34	67	4
65 - 69	125	103	8	13	1
70 - 74	26	25	0	1	0
75 & over	6	6	0	0	0

**TABLE 12-B*****Pensions Awarded During the Year Ended June 30, 2014  
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	487	196	124	8	159
Under 50	0	0	0	0	0
50 - 54	14	0	0	3	11
55 - 59	48	3	16	2	27
60 - 64	209	10	91	2	106
65 - 69	168	135	17	1	15
70 - 74	36	36	0	0	0
75 & over	12	12	0	0	0

**TABLE 12-C*****Pensions Awarded During the Year Ended June 30, 2014  
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	793	336	175	113	169
Under 50	1	0	0	0	1
50 - 54	21	0	0	8	13
55 - 59	82	7	25	21	29
60 - 64	316	12	125	69	110
65 - 69	293	238	25	14	16
70 - 74	62	61	0	1	0
75 & over	18	18	0	0	0

**TABLE 13-A*****Current Plan Pensioners in Force as of July 1, 2014  
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	3,510	1,166	740	1,457	147
Under \$200	317	204	102	6	5
200 - 399	444	184	216	5	39
400 - 599	372	144	168	9	51
600 - 799	274	117	112	17	28
800 - 999	233	96	60	63	14
1,000 - 1,199	250	95	33	117	5
1,200 - 1,399	245	63	18	162	2
1,400 - 1,599	195	55	11	128	1
1,600 - 1,799	169	38	3	128	0
1,800 - 1,999	165	35	3	126	1
2,000 - 2,199	139	23	1	114	1
2,200 - 2,399	127	14	6	107	0
2,400 - 2,599	123	21	0	102	0
2,600 - 2,799	95	12	0	83	0
2,800 - 2,999	63	9	1	53	0
3,000 - 3,199	52	8	2	42	0
3,200 - 3,399	47	4	0	43	0
3,400 - 3,599	38	5	2	31	0
3,600 - 3,799	19	4	0	15	0
3,800 - 3,999	25	6	1	18	0
4,000 - 4,199	23	6	1	16	0
4,200 - 4,399	17	2	0	15	0
4,400 - 4,599	18	3	0	15	0
4,600 - 4,799	12	4	0	8	0
4,800 - 4,999	10	4	0	6	0
5,000 & over	38	10	0	28	0

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

**TABLE 13-B*****Current Plan Pensioners in Force as of July 1, 2014  
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	4,963	1,607	1,662	1,516	178
Under \$200	747	304	426	8	9
200 - 399	1,005	368	567	9	61
400 - 599	731	280	363	24	64
600 - 799	457	174	158	92	33
800 - 999	403	138	58	197	10
1,000 - 1,199	341	80	50	210	1
1,200 - 1,399	291	77	18	196	0
1,400 - 1,599	202	44	6	152	0
1,600 - 1,799	180	32	6	142	0
1,800 - 1,999	137	25	6	106	0
2,000 - 2,199	101	21	3	77	0
2,200 - 2,399	102	19	0	83	0
2,400 - 2,599	59	8	0	51	0
2,600 - 2,799	39	6	1	32	0
2,800 - 2,999	38	7	0	31	0
3,000 - 3,199	31	5	0	26	0
3,200 - 3,399	19	2	0	17	0
3,400 - 3,599	10	1	0	9	0
3,600 - 3,799	12	2	0	10	0
3,800 - 3,999	14	3	0	11	0
4,000 - 4,199	12	2	0	10	0
4,200 - 4,399	8	1	0	7	0
4,400 - 4,599	3	3	0	0	0
4,600 - 4,799	7	2	0	5	0
4,800 - 4,999	2	1	0	1	0
5,000 & over	12	2	0	10	0

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

**TABLE 13-C*****Current Plan Pensioners in Force as of July 1, 2014  
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	8,473	2,773	2,402	2,973	325
Under \$200	1,064	508	528	14	14
200 - 399	1,449	552	783	14	100
400 - 599	1,103	424	531	33	115
600 - 799	731	291	270	109	61
800 - 999	636	234	118	260	24
1,000 - 1,199	591	175	83	327	6
1,200 - 1,399	536	140	36	358	2
1,400 - 1,599	397	99	17	280	1
1,600 - 1,799	349	70	9	270	0
1,800 - 1,999	302	60	9	232	1
2,000 - 2,199	240	44	4	191	1
2,200 - 2,399	229	33	6	190	0
2,400 - 2,599	182	29	0	153	0
2,600 - 2,799	134	18	1	115	0
2,800 - 2,999	101	16	1	84	0
3,000 - 3,199	83	13	2	68	0
3,200 - 3,399	66	6	0	60	0
3,400 - 3,599	48	6	2	40	0
3,600 - 3,799	31	6	0	25	0
3,800 - 3,999	39	9	1	29	0
4,000 - 4,199	35	8	1	26	0
4,200 - 4,399	25	3	0	22	0
4,400 - 4,599	21	6	0	15	0
4,600 - 4,799	19	6	0	13	0
4,800 - 4,999	12	5	0	7	0
5,000 & over	50	12	0	38	0

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

**TABLE 14-A*****Current Plan Pensioners in Force as of July 1, 2014  
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	3,510	1,166	740	1,457	147
Under 50	10	0	0	0	10
50 - 54	26	0	0	15	11
55 - 59	135	9	18	86	22
60 - 64	459	17	95	309	38
65 - 69	943	276	219	425	23
70 - 74	743	295	151	279	18
75 - 79	526	230	100	183	13
80 - 84	367	164	81	114	8
85 - 89	188	101	50	35	2
90 & over	113	74	26	11	2

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

**TABLE 14-B*****Current Plan Pensioners in Force as of July 1, 2014  
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	4,963	1,607	1,662	1,516	178
Under 50	8	0	0	0	8
50 - 54	30	0	0	17	13
55 - 59	179	4	38	104	33
60 - 64	687	20	261	373	33
65 - 69	1257	368	392	468	29
70 - 74	1018	429	283	281	25
75 - 79	787	306	290	170	21
80 - 84	500	224	198	67	11
85 - 89	310	151	130	26	3
90 & over	187	105	70	10	2

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

**TABLE 14-C*****Current Plan Pensioners in Force as of July 1, 2014  
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	8,473	2,773	2,402	2,973	325
Under 50	18	0	0	0	18
50 - 54	56	0	0	32	24
55 - 59	314	13	56	190	55
60 - 64	1,146	37	356	682	71
65 - 69	2,200	644	611	893	52
70 - 74	1,761	724	434	560	43
75 - 79	1,313	536	390	353	34
80 - 84	867	388	279	181	19
85 - 89	498	252	180	61	5
90 & over	300	179	96	21	4

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

**TABLE 15**

***Special Prior Service Pensions in Force on July 1, 2014  
by Monthly Amount***

Monthly Amount	Male	Female	Total
Total	2	5	7
Under \$20	1	2	3
20 - 39	0	2	2
40 - 59	0	1	1
60 - 79	1	0	1

**TABLE 16**

***Special Prior Service Pensions in Force on July 1, 2014  
by Nearest Age***

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