NORTH DAKOTA RETIREE HEALTH INSURANCE CREDIT FUND

ACTUARIAL VALUATION AND REVIEW AS OF JULY 1, 2014

THE SEGAL GROUP
Founded in 1939

Segal Consulting

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 a pleased to submit this Actuarial Valuation and Review as of July 1, 2014 for the North Dakota Public Employees Retirement System Retiree Health Insurance Credit (RHIC) Fund. 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 information on which our calculations are based and the financial information were 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,

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

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

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

cc: Sparb Collins

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Table of Contents

Introduction

This report has been prepared by Segal Consulting to present a valuation of the North Dakota Public Employees Retirement System Retiree Health Insurance Credit Fund 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 Retiree Health Insurance Credit Fund;

2. The characteristics of covered active members, and pensioners and beneficiaries as of July 1, 2014;

3. The assets of the Fund as of June 30, 2014; and

4. Economic assumptions regarding future salary increases and investment earnings and demographic rates of participation, 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 Fund in accordance with the benefit provisions of the North Dakota Public Employees Retirement System Retiree Health Insurance Credit Fund. 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

- The present rate of contributions is sufficient to meet the actuarially determined requirement for 2014-2015, based upon the actuarial assumptions and financing objectives approved by the Board.

- The actuarial contribution requirement for 2014-2015 is $6.4 million, or 0.64% of payroll. The statutory rate of 1.14% of payroll is greater than the actuarially determined rate by 0.50% of payroll. Last year, the statutory rate exceeded the actuarially determined rate of 0.77% by 0.37% of payroll.

- The largest factor in the change in the actuarial contribution requirement was the actual contributions being greater than expected.

- The return on the market value of assets for 2013-2014 was 15.94%, and was 12.11% for the preceding year. The return on the actuarial value of assets for 2013-2014 was 11.56% compared to the investment return assumption of 8.00%. As a result, the Fund experienced an investment gain on an actuarial basis of approximately $2.4 million.

- A comparison of this year's funded ratio to the prior year follows:

	July 1, 2014	July 1, 2013
Actuarial Value of Assets	$77,925,234	$65,972,463
Actuarial Accrued Liability	116,633,623	114,052,953
Funded Ratio	66.8%	57.8%

- The unrecognized appreciation represents about 15.3% of the market value of assets. A characteristic 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 deferred appreciation were recognized immediately in the actuarial value of assets, the funded percentage would increase from 66.8% to 78.9%.

  - If the deferred appreciation were recognized immediately in the actuarial value of assets, the actuarial contribution requirement would decrease from 0.64% of payroll to 0.53% of payroll.

- Members of the optional defined contribution plan are also eligible to participate in the Retiree Health Insurance Credit Fund. Based on the member data provided to us, we included 224 of these active members in this actuarial valuation.

- 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 development.

- 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.

Member Characteristics

Nonretired Members

Detailed information for 22,642 active members as of July 1, 2014 was provided by the Retirement Office. The data included name, sex, date of birth, date of hire, months of service, and annual earnings.

Age, service, and compensation data are summarized below:

	Males	Females	Total
Number of active members	9,085	13,557	22,642
Average age	46.3	46.7	46.6
Average years of service	10.2	9.9	10.0
Projected annual compensation	$467,622,177	$533,581,533	$1,001,203,710
Average projected annual compensation	$51,472	$39,358	$44,219

Distributions of the active members by sex, age, and service as of July 1, 2014 are presented in Tables 1, 2 and 3.

Retired Members & Beneficiaries

Information regarding the Fund's pensioners and beneficiaries shows that benefits were being paid to 4,828 individuals on July 1, 2014. The average benefit paid to these retired members and beneficiaries is $119 per month. Their average age is 73.6 years. Distributions of the retired members and beneficiaries are presented in Tables 4, 5, and 6 by sex, monthly amount, and current age.

TABLE 1

Census of Members in Active Service on July 1, 2014
by Nearest Age and Years of Employment

(Males)

		Years of Employment							
Nearest Age	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over
Total	9,085	3,616	1,959	1,119	845	568	453	323	202
Under 20	6	6	0	0	0	0	0	0	0
20-24	275	275	0	0	0	0	0	0	0
25-29	844	728	116	0	0	0	0	0	0
30-34	964	569	330	65	0	0	0	0	0
35-39	944	435	295	167	46	1	0	0	0
40-44	911	330	223	167	165	26	0	0	0
45-49	1,002	316	211	143	141	149	41	1	0
50-54	1,247	333	247	190	143	129	143	59	3
55-59	1,383	340	237	165	157	122	156	146	60
60-64	1,037	201	176	132	138	107	89	89	105
65-69	338	63	80	61	38	25	18	24	29
70-74	98	15	35	18	11	8	4	3	4
75 & Over	36	5	9	11	6	1	2	1	1

TABLE 2

Census of Members in Active Service on July 1, 2014
by Nearest Age and Years of Employment

(Females)

		Years of Employment							
Nearest Age	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over
Total	13,557	5,568	2,807	1,749	1,302	837	645	398	251
Under 20	9	9	0	0	0	0	0	0	0
20-24	371	371	0	0	0	0	0	0	0
25-29	1,042	954	88	0	0	0	0	0	0
30-34	1,225	830	346	49	0	0	0	0	0
35-39	1,378	764	370	195	49	0	0	0	0
40-44	1,510	687	372	232	175	44	0	0	0
45-49	1,655	607	394	254	170	158	66	6	0
50-54	2,178	582	459	360	276	176	186	135	4
55-59	2,192	464	411	332	324	215	185	147	114
60-64	1,479	226	258	237	228	187	158	80	105
65-69	404	53	87	74	61	46	41	21	21
70-74	76	13	15	9	9	10	7	8	5
75 & Over	38	8	7	7	10	1	2	1	2

TABLE 3

Census of Members in Active Service on July 1, 2014
by Nearest Age and Years of Employment

(All Members)

		Years of Employment							
Nearest Age	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over
Total	22,642	9,184	4,766	2,868	2,147	1,405	1,098	721	453
Under 20	15	15	0	0	0	0	0	0	0
20-24	646	646	0	0	0	0	0	0	0
25-29	1,886	1,682	204	0	0	0	0	0	0
30-34	2,189	1,399	676	114	0	0	0	0	0
35-39	2,322	1,199	665	362	95	1	0	0	0
40-44	2,421	1,017	595	399	340	70	0	0	0
45-49	2,657	923	605	397	311	307	107	7	0
50-54	3,425	915	706	550	419	305	329	194	7
55-59	3,575	804	648	497	481	337	341	293	174
60-64	2,516	427	434	369	366	294	247	169	210
65-69	742	116	167	135	99	71	59	45	50
70-74	174	28	50	27	20	18	11	11	9
75 & Over	74	13	16	18	16	2	4	2	3

TABLE 4

Distribution of Retired Members & Beneficiaries Receiving Benefits on July 1, 2014 by Nearest Age and Monthly Amount

(Males)

		Monthly Amount						
Nearest Age	Total	Under $30	$30-$59	$60-$89	$90-$119	$120-$149	$150-$179	$180 & Over
Total	1,871	65	164	248	259	386	408	341
Under 50	4	2	0	2	0	0	0	0
50-54	6	1	1	1	1	0	2	0
55-59	41	3	2	3	0	3	29	1
60-64	182	9	9	11	13	49	59	32
65-69	464	24	37	52	72	93	92	94
70-74	406	6	39	47	66	94	73	81
75-79	332	6	29	47	42	64	72	72
80-84	241	8	25	41	32	54	46	35
85 & Over	195	6	22	44	33	29	35	26

TABLE 5

Distribution of Retired Members Receiving Benefits on July 1, 2014
by Nearest Age and Monthly Amount

(Females)

		Monthly Amount						
Nearest Age	Total	Under $30	$30-$59	$60-$89	$90-$119	$120-$149	$150-$179	$180 & Over
Total	2,957	131	426	574	519	634	374	299
Under 50	2	1	1	0	0	0	0	0
50-54	8	1	2	1	0	0	4	0
55-59	71	5	6	6	5	8	33	8
60-64	319	21	40	25	22	84	79	48
65-69	676	32	82	101	115	177	82	87
70-74	604	18	70	111	133	143	71	58
75-79	522	29	91	125	105	101	45	26
80-84	368	14	70	97	64	64	29	30
85 & Over	387	10	64	108	75	57	31	42

TABLE 6

Distribution of Retired Members & Beneficiaries Receiving Benefits on July 1, 2014
by Nearest Age and Monthly Amount

(All Retired Members & Beneficiaries)

		Monthly Amount						
Nearest Age	Total	Under $30	$30-$59	$60-$89	$90-$119	$120-$149	$150-$179	$180 & Over
Total	4,828	196	590	822	778	1,020	782	640
Under 50	6	3	1	2	0	0	0	0
50-54	14	2	3	2	1	0	6	0
55-59	112	8	8	9	5	11	62	9
60-64	501	30	49	36	35	133	138	80
65-69	1140	56	119	153	187	270	174	181
70-74	1010	24	109	158	199	237	144	139
75-79	854	35	120	172	147	165	117	98
80-84	609	22	95	138	96	118	75	65
85 & Over	582	16	86	152	108	86	66	68

Assets

Market Value of Assets

Draft financial information was provided by the North Dakota Public Employees Retirement System.

As shown in the draft financial statements as of June 30, 2014, the market value of net assets of the North Dakota Retiree Health Insurance Credit Fund was $92,013,709, an increase of $16.5 million compared to $75,556,001 a year earlier. This year's market value represents an increase of 21.8% over the market value one year earlier.

The rate of return on the market value basis was 15.94% for the year ended June 30, 2014.

Table 9 presents a summary statement of assets for the past two years.

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 actuarial value of assets as of June 30, 2014 was $77,925,234 compared to $65,972,463 as of June 30, 2013. On an actuarial basis, the rate of return was 11.56% for the year ended June 30, 2014.

Table 7 shows that there is approximately $14.1 million of deferred appreciation that will be recognized in future years. For the prior year, there was approximately $9.6 million of appreciation to be recognized in future years.

Table 8 presents a statement of income and disbursements on an actuarial value basis for the past two years.

TABLE 7

Determination of Actuarial Value of Assets
as of June 30, 2014 and 2013

		June 30, 2014		June 30, 2013	
Year Ending	Market Value Appreciation (Depreciation)	Percent Deferred	Amount Deferred	Percent Deferred	Amount Deferred
June 30, 2010	$4,928,103	0%	$0	20%	$985,621
June 30, 2011	8,481,511	20%	1,696,302	40%	3,392,604
June 30, 2012	163,508	40%	65,403	60%	98,105
June 30, 2013	6,384,010	60%	3,830,406	80%	5,107,208
June 30, 2014	10,620,455	80%	8,496,363	N/A	N/A
(a) Total Deferred as of Valuation Date			$14,088,474		$9,583,538
(b) Total Appreciation (Depreciation) for last five Plan Years			30,577,587		11,970,637
(c) Write-Up/(Down) Amount for the year - equals 20% of (b)			6,115,517		2,394,127

	June 30, 2014	June 30, 2013
Market Value of Assets	$92,013,709	$75,556,001
Less: Deferred Appreciation (Depreciation)	14,088,474	9,583,538
Actuarial Value of Assets	$77,925,235	$65,972,463
Actuarial Value as a Percentage of Market Value	84.69%	87.32%

TABLE 8

Summary Statement of Income and Disbursements
(based on unaudited financial statements)
on an Actuarial Value Basis

	Year Ended June 30, 2014	Year Ended June 30, 2013
Contribution Income:		
Employer Contributions	$10,709,787	$9,959,603
Member Contributions	6,274,648	6,014,003
Service Credit Repurchases	368,859	371,587
Total Contribution Income	$17,353,294	$16,345,193
Less: Administrative Expenses	(201,465)	(185,619)
Net Contribution Income	$17,151,829	$16,159,574
Investment Income:		
Interest and Dividends	$1,984,656	$1,777,178
Less: Investment Expenses	(238,703)	(197,797)
Net Interest and Dividends	$1,745,953	$1,579,381
Write-Up/(Down) of Assets	6,115,517	2,394,127
Net Investment Income	$7,861,470	$3,973,508
Total Income Available for Benefit Payments	$25,013,299	$20,133,082
Benefit Payments:		
Health Credit Benefits	$(6,259,110)	$(6,000,703)
Refunds	(2,992)	(8,765)
Health Premium Paid	(6,798,427)	(6,458,449)
Total Benefit Payments	$(13,060,529)	$(12,467,917)
Change in Reserve for Future Benefit Payments	$11,952,770	$7,665,165
Actuarial Value of Assets, Start of Year	65,972,463	58,307,298
Actuarial Value of Assets, End of Year	$77,925,234	$65,972,463

TABLE 9

Summary Statement of Assets
(based on unaudited financial statements)

	Year Ended June 30, 2014		Year Ended June 30, 2013	
Cash		$50,169		$24,641
Receivables:				
Contribution receivable	$783,903		$758,365	
Interest receivable	85,205		72,982	
Due from fiduciary funds	9,189		68,920	
Due from proprietary funds	417,672		420,416	
Total receivables		1,295,969		1,320,683
Investments:				
Domestic equities	$42,578,295		$34,038,246	
International equities	12,534,457		9,816,186	
Domestic fixed income	35,162,409		29,749,849	
Total investments		90,275,161		73,604,281
Prepaid health premiums		580,193		549,260
Software (net of amortization)		233,311		270,173
Total assets		92,434,803		75,769,038
Liabilities:				
Accounts payable	$(69,151)		$(57,110)	
Due to fiduciary funds	(344,558)		(102,106)	
Due to proprietary funds	(7,385)		(53,821)	
Total liabilities		(421,094)		(213,037)
Net assets at market value		$92,013,709		$75,556,001
Net assets at actuarial value		$77,925,234		$65,972,463

Results of Actuarial Valuation

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 amortization period of 40 years beginning July 1, 1990 (16 years remaining as of July 1, 2014). Amortization payments are based on a level percent of payroll. 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 total compensation of active employees.

The components of the actuarial contribution requirement are as follows:

	Amount for 2014 – 2015	Percentage of Payroll	Cost per Active Employee
Normal cost	$3,159,738	0.31%	$140
Administrative expense allowance	97,000	0.01	4
Amortization payment	3,182,046	0.32	140
Total employer contribution requirement	$6,438,784	0.64%	$284

Covered payroll is $1,001,203,710 for 22,642 active employees.

The statutory contribution rate is 1.14% of payroll. Hence the plan has a margin of 0.50% of payroll.

If deferred asset appreciation were taken into account on the valuation date, the margin would be 0.61% of payroll.

A reconciliation of the change since the previous actuarial valuation follows:

	Percentage of Payroll
Employer contribution requirement as of July 1, 2013	0.77%
Investment gain (includes gains due to contributions)	(0.02)
Change in normal cost rate	(0.03)
Other plan experience during the year	(0.08)
Change in assumptions	0.00
Employer contribution requirement as of July 1, 2014	0.64%

Funding Status

The calculation of funded ratios provides one measure of the progress of funding a 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 plan's liabilities.

Funding Basis – Actuarial Accrued Liability

The funded ratio shown below is based on assets and liabilities developed in the actuarial valuation. It uses the actuarial accrued liability developed by the Projected Unit Credit Actuarial Cost Method and the actuarial value of assets.

Historical Results

The funded ratio for the past nine years is shown below. The progress of this ratio reveals overall improvement in the plan's funded condition.

As of July 1	Actuarial Accrued Liability	Actuarial Value of Assets	Funded Ratio
2006	$82,632,628	$34,020,413	41.2%
2007	85,342,012	38,881,121	45.6
2008	87,592,818	42,543,140	48.6
2009	102,191,552	44,829,007	43.9
2010	102,805,439	48,723,475	47.4
2011	108,384,942	53,730,426	49.6
2012	112,373,231	58,307,298	51.9
2013	114,052,953	65,972,463	57.8
2014	116,633,623	77,925,234	66.8

Actuarial Assumptions and Cost Methods

The assumptions and cost methods used in the actuarial valuation as of July 1, 2014 are summarized below. 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 will be 8.00% per year, net of investment expenses.

Mortality Rates

The reserve required to pay a member's retirement benefits depends on the period over which payments will be received. The assumptions differ for active members of the Public Employees Retirement System (PERS), the Highway Patrolmen's Retirement System (Highway Patrol), and the Defined Contribution Plan members (DC). For PERS and DC members, the rates are based on the 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 (no age setback for females) for disabled members. The schedule below shows the annual mortality rates and life expectancies underlying the healthy mortality tables for PERS and DC. The mortality rates for Highway Patrol are summarized in the Highway Patrolmen's Retirement System report.

	Retired Members			
	Males		Females	
Age	Deaths per 1,000 Lives	Expected Number of Years of Life Remaining	Deaths per 1,000 Lives	Expected Number of Years of Life Remaining
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 Rates

Disability rates differ for active members of PERS, DC, and Highway Patrol. Rates for PERS and DC are summarized below for selected ages. The disability assumptions for the Highway Patrol are detailed in the valuation report for their retirement system.

Age	Males	Females
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

Withdrawal Rates before Retirement

The withdrawal rates used in this actuarial valuation are intended to recognize the percentage of members who will leave service at each age prior to retirement for reasons other than death or disability. Withdrawal rates differ for active members of the Main System, Judges, National Guard, Law Enforcement, DC, and Highway Patrol. Rates for the Main and DC Systems are described below. The withdrawal assumptions for members of the Judges, National Guard, Law Enforcement, and Highway Patrol are detailed in the valuation report for their retirement systems.

Select and ultimate rates are used for the Main and DC Systems. During the select period (first five years of employment), rates vary by year of service and age. During the ultimate period (after five years of employment), the rates vary by age. The Main and DC Systems rates are detailed in Exhibit II.

Retirement Rates

The retirement rates used in the valuation differ for active members of the Main, Judges, National Guard, Law Enforcement, DC, and Highway Patrol. Rates for the Main and DC Systems are described below. The retirement assumptions for members of the Judges, National Guard, Law Enforcement, and Highway Patrol are detailed in the valuation reports for their retirement systems.

For members of the Main and DC Systems, retirement rates vary depending on age and whether the member is eligible for the Rule of 85. The Main and DC Systems rates are detailed in Exhibit II.

Administrative Expenses

Annual administrative expenses are assumed to be $97,000.

Marital Status

For PERS and DC, 80% of active male members and 65% of active female members are assumed to have spouses, except for Judges, for whom 100% are assumed to have spouses.

For the Highway Patrol, 90% of all active members are assumed to have spouses.

Males are assumed to be three years older than their female spouses.

Valuation of Assets

Investments are carried at an adjusted market value. The net market appreciation (depreciation) is spread over five years in equal dollar amounts, commencing 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.

Participation Rates

Receipt of benefits from the Fund is contingent upon the member's election of participation in the North Dakota Uniform Group Insurance Program. The assumption concerning the percentage of active members participating in this program varies with the member's service at retirement. Assumed participation rates are as follows:

Main and DC Systems, National Guard and Law Enforcement		Judges and Highway Patrol	
Years of Service	Participation Rate	Years of Service	Participation Rate
3 - 4	30%	5 - 9	50%
5 - 9	50%	10 - 14	65%
10 - 14	65%	15 - 19	80%
15 - 19	80%	20 - 24	85%
20 - 24	85%	25 and over	90%
25 and over	90%		

Actuarial Cost Method

Costs are determined under the Projected Unit Credit Cost Method. Under this method, benefits are projected to each assumed occurrence of decrement (death, disability, retirement) using service as of the valuation date. The normal cost is equal to the actuarial present value of the benefits earned in the current year.

The actuarial accrued liability for active members is equal to the actuarial present value of the benefits earned in all prior years. The actuarial assumptions used to determine the liabilities for members of the optional defined contribution plan are the same as those used for the Main System. The actuarial accrued liability for members currently receiving benefits and for participants entitled to deferred benefits is the actuarial present value of the benefits expected to be paid. The unfunded actuarial accrued liability is equal to the actuarial accrued liability minus the actuarial value of assets. This amount is amortized as a level percentage of payroll over a fixed period of years. Payroll is assumed to increase by 4.5% per year.

Actuarial Valuation Certificate

November 14, 2014

NORTH DAKOTA PUBLIC EMPLOYEES RETIREMENT SYSTEM
RETIREE HEALTH INSURANCE CREDIT FUND

This is to certify that Segal Consulting ("Segal") has prepared an Actuarial Valuation of the Fund as of July 1, 2014 in accordance with generally accepted actuarial principles and practices. It has been prepared at the request of the Board of Trustees to assist in administering the Fund and meeting filing requirements of federal government agencies. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Trustees 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 Consulting 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 Qualification 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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EXHIBIT I

ACTUARIAL VALUATION RESULTS

1.	Actuarial accrued liability on July 1, 2014:	
	a. Active members	$57,316,910
	b. Retired members and beneficiaries	59,316,713
	c. Total	$116,633,623
2.	Assets at actuarial value ($92,013,709 at market value)	77,925,234
3.	Unfunded actuarial accrued liability - equals (1) minus (2)	38,708,389
4.	Normal cost for ensuing year*	3,159,738
5.	Amortization payment - equals 16-year amortization of item (3) as a level percent of total payroll*	3,182,046
6.	Administrative expenses	97,000
7.	Total cost for ensuing year - equals (4) plus (5) plus (6)	6,438,784
8.	Total payroll of covered members	1,001,203,710
9.	Total employer cost as percentage of payroll - equals (7) divided by (8)	0.64%

* Adjusted for interest to recognize payments throughout the year.

EXHIBIT II

ACTUARIAL ASSUMPTIONS AND COST METHODS

1. Mortality Tables:

Active PERS members and retirees:

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

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

Active Highway Patrol members:

Healthy: RP-2000 Combined Healthy Mortality Table, set back one year.

Disabled: 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:

Different disability incidence rates are applied to the active members of PERS and the Highway Patrol. The disability rates applied to the Highway Patrol are described in the valuation report for their retirement system.

Sample rates for PERS are:

Age	Males	Females
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:

Different withdrawal rates are applied to the active members of the Main and DC Systems, Highway Patrol, Judges, National Guard and Law Enforcement. Rates for the Main and DC Systems are detailed below. The withdrawal assumptions applied to the active members in the other groups are detailed in the valuation report for their retirement system.

Select and ultimate rates are used for active members of the Main and DC Systems. During the select period (first five years of active employment), rates vary by entry age and year of employment. During the ultimate period (active employment after the first five years), rates vary by attained age.

Select Period						Ultimate Period	
	Year of Employment					Age	Rate
Age	0	1	2	3	4	20 - 24	8.8%
29 & Under	22%	18%	16%	14%	14%	25 - 29	8.8
30 - 39	16	14	12	12	11	30 - 34	5.5
40 & Over	12	10	10	8	7	35 - 39	4.7
						40 - 44	3.9
						45 - 49	3.7
						50 - 54	3.4
						55 - 59	0.1
						60 & Over	0.2

Withdrawal rates end upon eligibility for early retirement.

4. Retirement Rates for Active Members:

Different retirement rates are applied to the active members of the Main and DC Systems, Highway Patrol, Judges, National Guard and Law Enforcement. Retirement rates for the Main System are detailed below. The retirement rates applied to the active members of the other groups are detailed in the valuation report for their retirement system.

Annual rates for the Main and DC Systems are as follows:

Age	Unreduced*	Early
51-54	8%	0%
55	8	2
56-59	10	2
60	10	4
61	20	10
62	35	20
63	25	15
64	30	10
65	30	
66-74	20	
75	100	

**Age 65 or Rule of 85*

5. Interest Rate:

8.00% per annum, net of investment expenses.

6. Annual Administrative Expenses:

$97,000.

7. Payroll Growth:

4.50% per annum.

8. Inflation:

3.50% per annum.

9. Participation Rates:

The percentage of eligible members electing coverage under the health insurance program and receiving the stipend varies with years of service. Rates are as follows:

Main System, National Guard and Law Enforcement		Judges and Highway Patrol	
Years of Service	Participation Rate	Years of Service	Participation Rate
3 - 4	30%	5 - 9	50%
5 - 9	50%	10 - 14	65%
10 - 14	65%	15 - 19	80%
15 - 19	80%	20 - 24	85%
20 - 24	85%	25 or more	90%
25 or more	90%		

10. Joint and Survivor Options:

Main and DC Systems, National Guard and Law Enforcement:

60% of male retirees and 25% of female retirees will elect a 100% joint and survivor form of pension from the retirement system in which they participated.

Valued without reduction for optional form of payment.

Judges:

100% of retirees will elect a 100% joint and survivor form of pension from the retirement system.

Valued without reduction for optional form of payment.

Highway Patrol:

90% of retirees will elect a 100% joint and survivor form of pension from the retirement system.

Valued without reduction for optional form of payment.

11. Marital Status:

Main and DC Systems, National Guard and Law Enforcement:

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

Judges:

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

Highway Patrol:

At death, 90% of all active members are assumed to have spouses. Males are assumed to be three years older than their female spouses.

12. Actuarial Cost Method:

Projected Unit Credit Actuarial Cost Method. Unfunded actuarial accrued liability amortized in installments increasing by the payroll growth assumption each year over a fixed period that ends on June 30, 2030.

13. Actuarial Value of Assets:

Adjusted market value that immediately recognizes interest and dividends. The procedure recognizes 20% of each year's total appreciation (depreciation) beginning with the year of occurrence. After five years, the appreciation (depreciation) is fully recognized. 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.

EXHIBIT III

CHANGES IN ACTUARIAL ASSUMPTIONS
AND COST METHODS

There were no changes in actuarial assumptions 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 Retiree Health Insurance Credit Fund 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. <u>Covered Employees:</u>

Members of the Public Employees Retirement System, the Highway Patrolmen's Retirement System and the Defined Contribution Retirement Plan who elect coverage.

2. <u>Normal Retirement:</u>

Age requirement:

Main and DC Systems and Judges:

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

Highway Patrol:

Age 55, or at any age with age plus service equal to at least 80 (Rule of 80).

National Guard:

Age 55.

Law Enforcement:

Age 55, or at any age with age plus service equal to at least 85 (Rule of 85).

Service requirement:

Main and DC Systems and Judges:

None.

Highway Patrol:

Ten years.

National Guard and Law Enforcement:

Three consecutive years.

Other requirements:

Participation in the North Dakota Uniform Group Insurance Program.

Benefit amount:

A monthly stipend equal to $5.00 times service.

EXHIBIT IV (continued)

3. Early Retirement:

Age requirement:

Main and DC Systems and Judges:

Age 55.

Highway Patrol, National Guard and Law Enforcement:

Age 50.

Service requirement:

Main and DC Systems, National Guard and Law Enforcement:

Three years.

Judges:

Five years.

Highway Patrol:

Ten years.

Benefit amount:

Main and DC Systems and Judges:

The Normal Retirement Benefit reduced by 3% for retirements at age 64 and an additional 6% for each year by which retirement precedes age 64.

Benefits are unreduced upon the fulfillment of the Rule of 85.

Highway Patrol, National Guard and Law Enforcement:

The Normal Retirement Benefit reduced by 3% for retirements at age 54 and an additional 6% for each year by which retirement precedes age 54.

Benefits are unreduced upon the fulfillment of the Rule of 80 for Highway Patrol and Rule of 85 for Law Enforcement.

4. Disability Retirement:

Age requirement:

None.

Service requirement:

Six months.

Other requirements:

As required by applicable pension plan.

Benefit amount:

Same as Normal Retirement Benefit.

5. Pre-Retirement Death Benefit:

Age requirement:

None.

Service requirement:

Main and DC Systems, National Guard and Law Enforcement:

Three years.

Judges:

Five years.

Highway Patrol:

Ten years.

Benefit amount:

Same as Normal Retirement Benefit accrued to the date of the member's death, payable for as long as benefits are payable to the spouse from the Retirement System under the standard option.

6. Post-Retirement Death Benefit:

Following a retired member's death, the Retiree Health Insurance Credit Fund will: (1) continue benefits to the member's spouse if the spouse continues to receive a monthly pension from member's Retirement System or (2) provide benefits to the member's spouse if the member selected a joint and survivor option from the Retiree Health Insurance Credit Fund.

7. Alternative Options:

If benefits from the member's Retirement System are paid under single life, level Social Security, or 10 or 20 year term certain options (without a continuation to the spouse after the certain period ends), actuarially reduced health credit benefits may be elected for the spouse. Alternative options in the Retiree Health Insurance Credit Fund include 50% and 100% joint and survivor annuities.

8. Service:

Members receive credit for each year and month of employment.

9. Contributions:

The employer contributes 1.14% of covered salaries and wages for participating employees.

EXHIBIT V

CHANGES IN PLAN PROVISIONS

There were no changes made in the plan provisions since the prior valuation.

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