

Registers of Deeds' Supplemental Pension Fund

Report on the Annual Valuation Prepared as of December 31, 2013

October 2014



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October 6, 2014

Board of Trustees North Carolina Local Governmental Employees' Retirement System 325 North Salisbury Street Raleigh, NC 27603-1385

Members of the Board:

We submit herewith our report on the actuarial valuation of the Registers of Deeds' Supplemental Pension Fund (referred to as the "Fund"), prepared as of December 31, 2013. The report has been prepared in accordance with North Carolina General Statute 161-50.

The primary purpose of the valuation report is to determine the required member and employer contribution rates, to describe the current financial condition of the Fund, and to analyze changes in such condition. In addition, the report provides information that the Office of the State Controller (OSC) requires for its Comprehensive Annual Financial Report (CAFR) and it summarizes census data. Use of this report for any other purposes or by anyone other than OSC and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck Consultants' written consent.

The valuation is based upon membership data and financial information as furnished by the Retirement Systems Division and the Financial Operations Division and as summarized in this report. Although reviewed for reasonableness and consistency with the prior valuation, these elements have not been audited by Buck and we cannot certify as to the accuracy and completeness of the data supplied. The valuation is also based on benefit and contribution provisions as presented in this report. If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not described, or that conditions have changed since the calculations were made, you should contact the authors of this actuarial report prior to relying on this information.

The valuation is further based on the actuarial valuation assumptions, approved by the Board of Trustees, as presented in this report. We believe that these assumptions are reasonable and comply with the requirements of GASB Nos. 25, 27, and 67. We prepared this report in accordance with the requirements of these standards.



Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, Buck performed no analysis of the potential range of such future differences.

The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Respectfully submitted,

Michael A. Ribble, FSA, EA, MAAA

Principal, Consulting Actuary

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Table of Contents

Section 1: Summary of Principal Results	1
Table 1 – Summary of Principal Results	1
Section 2: Membership Data	3
Table 2 – The Number and Reported Compensation of	
Active Members	č
Table 3 – The Number and Annual Retirement Allowances of Retired Members and Survivors of Deceased Members Currently Receiving Benefits	3
Section 3: Asset Allocation	
Table 4 – Allocation of Investments by Category	
Section 4: Comments on Valuation	
Section 5: Comments on Experience and Gains	6
Table 5 – Reconciliation of Change in Unfunded Actuarial Accured Liability Since the Prior Valuation	
Section 6: Accounting Information	7
Table 6 – Number of Active and Retired Participants	
Table 7 – Schedule of Funding Progress	
Table 8 – Annual Required Contribution (ARC)	
Table 9 – Additional Information for GASB Statement Nos. 25 and 27	
Table 10 – Schedule of Changes in Net Pension Liability (Asset)	g
Table 11 – Net Pension Liability (Asset)	
Table 12 – Sensitivity of the Net Pension Liability to Changes in the	
Discount Rate	10
Appendices	11
Appendix A – Results of the Valuation	
Appendix B – Development of Actuarial Value of Assets	
Appendix C – Actuarial Assumptions and Methods	
Appendix D – Summary of Main Benefit Provisions	17
Appendix E – GASB 67 Fiduciary Net Position Projection	
Appendix F – Detailed Tabulations of the Data	22



Section 1: Summary of Principal Results

 This report, prepared as of December 31, 2013, presents the results of the actuarial valuation of the system. For convenience of reference, the principal results of the valuation and a comparison with the results of the previous valuation are summarized below.

Table 1: Summary of Principal Results

		•		
Valuation Date	Dece	ember 31, 2013	Dece	ember 31, 2012
Active members Number Reported compensation Valuation compensation**	\$ \$	100 5,960,423 6,333,594	\$ \$	99 5,613,024 6,156,662
Terminated members entitled to benefits but not yet receiving benefits Number Annual Allowances	\$	2 36,000	\$	4 72,000
Retired members and survivors of deceased members currently receiving benefits Number Annual allowances	\$	95 1,696,104	\$	91 1,624,104
Assets: Actuarial value (AVA) Market value	\$	46,405,972 44,804,737	\$	44,995,689 47,307,961
Actuarial accrued liability (AAL) Unfunded actuarial accrued liability (AAL-AVA) Funded ratio (AVA/AAL)	\$	24,064,415 (22,341,557) 192.8%	\$	23,516,992 (21,478,697) 191.3%
Fiscal Year Ending	Jı	ıne 30, 2016	Ju	ıne 30, 2015
Annual required employer contribution: Normal cost Accrued liability	\$	629,630 (629,630)	\$	618,289 (618,289)
Total Liquidation period	\$	0 N/A*	\$	0 N/A*

^{*} If the annual required employer contribution (ARC) is based on 30 year amortization of the unfunded accrued liability, the ARC is less than \$0, which is not allowed under GASB 25/27. Therefore, the accrued liability contribution has been set such that the total employer ARC equals \$0.

^{**} Reported compensation adjusted to reflect the assumed rate of pay increase prior to the valuation date.



Section 1: Summary of Principal Results

- 2. Tables summarizing the membership of the system as of the valuation date are shown in Section 2.
- 3. An allocation of investments by category is shown in Section 3.
- 4. Comments on the valuation results are provided in Section 4.
- 5. Comments on the experience and actuarial gains during the valuation year are provided in Section 5.
- 6. Accounting information to be disclosed in the financial statements of the System and the employer is provided in Section 6.
- Appendix A of this report presents a summary of the results of the valuation, including present and prospective assets and liabilities of the Fund as of December 31, 2013.
- 8. Appendix B of this report presents the development of the actuarial value of assets.
- 9. Appendix C of this report outlines the full set of actuarial assumptions and methods employed.
- 10. Appendix D gives a summary of the benefit and contribution provisions of the system.
- 11. Appendix E provides the projection of cash flows used to determine the discount rate under GASB Statement No. 67.
- 12. Appendix F provides detailed tabulations of the membership of the system as of the valuation date.



Section 2: Membership Data

Data regarding the membership of the system for use as a basis for the valuation were furnished by the System's office. The following tables summarize the membership of the system as of December 31, 2013 upon which the valuation was based.

Table 2: The Number and Reported Compensation of Active Members Included in the Valuation as of December 31, 2013

Group	Number	Average Age	Average Service	Reported npensation
Males	22	55.3	10.7	\$ 1,509,502
Females	<u>78</u>	<u>55.0</u>	<u>21.1</u>	 4,450,921
Total	100	55.1	18.8	\$ 5,960,423

Table 3: The Number and Annual Retirement Allowances of Retired Members and Survivors of Deceased Members Currently Receiving Benefits Included in the Valuation as of December 31, 2013

Group	Number	Average Age	Annual Retirement Allowances
Males	15	74.2	\$ 259,650
Females	<u>80</u>	<u>70.9</u>	<u>1,436,454</u>
Total	95	71.4	\$ 1,696,104



Section 3: Asset Allocation

The following table shows an allocation of investments by category for the Register of Deeds' Supplemental Pension Fund as of December 31, 2013.

Table 4: Allocation of Investments by Category for the Register of Deeds' Supplemental Pension Fund as of December 31, 2013

Cash and Receivables	0.4%
Fixed Income (LTIF)	99.6
Public Equity	0.0
Other*	0.0
Total	100.0%

^{*} Real Estate, Alternatives, Inflation and Credit.



Section 4: Comments on Valuation

Appendix A of this report presents a summary of the results of the valuation, including present and prospective assets and liabilities of the Fund as of December 31, 2013.

The results of the valuation show that the Fund has total prospective liabilities of \$27,861,087 of which \$16,397,836 is for the prospective benefits payable on account of present beneficiaries and \$11,463,251 is for the prospective benefits payable on account of present active members. Against these liabilities, the Fund has present assets of \$46,405,972 leaving a balance of \$(18,544,885) as the present value of contributions to be made in the future.

The employer's contributions consist of normal contributions and accrued liability contributions. The valuation indicates that employer normal contributions totaling \$629,630 are required to provide the benefits of the Fund for the average new member and include the amount required for administrative expenses.

Prospective employer normal contributions have a present value of \$3,796,672. When this amount is subtracted from \$(18,544,885) which is the present value of total contributions, the result is an unfunded actuarial accrued liability of \$(22,341,557).



Section 5: Comments on Experience and Gains

The following table shows a detailed reconciliation of the change in unfunded accrued liability since the prior valuation.

Table 5: Reconciliation of Change in Unfunded Accrued Liability
Since the Prior Valuation
(in millions)

Unfunded accrued liability as of 12/31/2012	\$ (21.5)
Normal cost during 2013	0.5
Reduction due to actual contributions during 2013	(0.9)
Interest on unfunded accrued liability, normal cost and contributions	(1.2)
Asset (gain)/loss	0.4
Accrued liability (gain)/loss	<u>0.4</u>
Unfunded accrued liability as of 12/31/2013	\$ (22.3)



The section contains the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 25, 27 and 67 for fiscal year ending June 30, 2014 based on a valuation date of December 31, 2013.

Please note that GASB Statement No. 25 (*Financial Reporting for Defined Benefit Pension Plans*) is applicable for fiscal years ending prior to 2014 and has been replaced by GASB Statement No. 67 (*Financial Reporting for Pension Plans*) for fiscal years ending 2014 and later. Similarly, GASB Statement No. 27 (*Accounting for Pensions by State and Local Governmental Employers*) is applicable for fiscal years ending prior to 2015 and has been replaced by GASB Statement No. 68 (*Accounting and Financial Reporting for Pensions*) for fiscal years ending 2015 and later.

GASB Statement Nos. 25 and 27 set forth certain items of information to be disclosed in the financial statements of the Plan. The tables below provide a distribution of the number of employees by type of membership, and the schedule of funding progress.

Table 6: Number of Active and Retired Participants as of December 31, 2013

Group	Number
Retired members and survivors of deceased members currently receiving benefits	95
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	2
Active participants	<u>100</u>
Total	197

Table 7: Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
12/31/2007	\$35,452,796	\$17,829,797	\$(17,622,999)	198.8%	\$5,868,775	(300.3)%
12/31/2008	37,212,564	18,365,203	(18,847,361)	202.6	6,023,750	(312.9)
12/31/2009	38,913,032	21,839,594	(17,073,438)	178.2	6,092,173	(280.3)
12/31/2010	40,529,252	22,103,690	(18,425,562)	183.4	5,926,120	(310.9)
12/31/2011	42,622,991	22,193,628	(20,429,363)	192.1	5,874,918	(347.7)
12/31/2012	44,995,689	23,516,992	(21,478,697)	191.3	5,613,024	(382.7)
12/31/2013	46,405,972	24,064,415	(22,341,557)	192.8	5,960,423	(374.8)



The tables below provide the annual required contribution (ARC) of the employer, (determined in accordance with the parameters of GASB 25/27), and additional information as of the valuation date. If the accrued liability contribution is based on amortization of the unfunded actuarial accrued liability of \$(22,341,557) over a 30-year period, the total employer ARC would be less than \$0, which is not allowed under GASB 25/27. Therefore, the accrued liability contribution has been set such that the total ARC equals \$0.

Table 8: Annual Required Contribution (ARC)
Based on the Valuation as of December 31, 2013

Fiscal Year Ending	June 30, 2016
Normal Cost	\$ 629,630
Accrued Liability	(629,630)
Total	\$ 0

Since the Registers of Deeds' Supplemental Pension Fund is a cost-sharing multiple employer plan, the amounts collected in accordance with the Statutes are suitable for use in the financial statements of the employers as the annual required contribution (ARC) even though they may differ in total from the amounts shown above.

Table 9: Additional Information for GASB Statement Nos. 25 and 27

Valuation date	December 31, 2013
Actuarial cost method	Entry Age
Amortization method	Level dollar closed
Remaining amortization period	N/A*
Asset valuation method	20% of market value plus 80% of expected actuarial value (not greater than 120% of market value and not less than 80% of market value)
Actuarial assumptions:	
Investment rate of return**	5.25%
Projected salary increases***	4.25% - 7.75%
** Includes inflation of *** Includes inflation and productivity of	3.00% 3.50%
Cost-of-living adjustments	N/A

* If the annual required employer contribution (ARC) is based on 30 year amortization of the unfunded accrued liability, the ARC is less than \$0, which is not allowed under GASB 25/27. Therefore, the accrued liability contribution has been set such that the total employer ARC equals \$0



GASB Statement No. 67 set forth certain items of information to be disclosed in the financial statements of the Plan. The tables below provide the schedule of changes in Net Pension Liability (Asset).

Table 10: Schedule of Changes in Net Pension Liability (Asset)

Calculation as of	June 30, 2014
Total Pension Liability	
Service Cost	\$ 563,000
Interest	1,342,000
Changes of Benefit Terms	0
Difference between Expected and Actual Experience	302,000
Change in Assumptions	0
Benefit Payments, including Refund of Member Contributions	(1,666,000)
Net Change in Total Pension Liability	\$ 541,000
Total Pension Liability – Beginning of Year	\$ 23,602,000
Total Pension Liability – End of Year	\$ 24,143,000
Plan Fiduciary Net Position	
Employer Contributions	\$ 817,000
Member Contributions	0
Net Investment Income	2,714,000
Benefit Payments, including Refund of Member Contributions	(1,666,000)
Administrative Expenses	(18,000)
Other	0
Net Change in Plan Fiduciary Net Position	\$ 1,847,000
Plan Fiduciary Net Position - Beginning of Year	\$ 44,962,000
Plan Fiduciary Net Position - End of Year	\$ 46,809,000

Table 11: Net Pension Liability (Asset)

Calculation as of	June 30, 2014	June 30, 2013
Total Pension Liability	\$ 24,143,000	\$ 23,602,000
Plan Fiduciary Net Position	46,809,000	44,962,000
Net Pension Liability (Asset)	\$(22,666,000)	\$(21,360,000)
Plan Fiduciary Net Position as a		
Percentage of the Total Pension Liability	193.88%	190.50%



The table below is the sensitivity of the net pension liability to changes in the discount rate.

Table 12: Sensitivity of the Net Pension Liability at June 30, 2014 to Changes in the Discount Rate

	1% Decrease	Current	1% Increase
Discount Rate	4.75%	5.75%	6.75%
Net Pension Liability (Asset)	(20,353,000)	(22,666,000)	(24,654,000)

The discount rate used to measure the total pension liability was 5.75%. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy. Based on those assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Please see Appendix E for additional detail.



Appendix A: Results of the Valuation

	Results of the Valuation as of December 31, 2013							
1.	Actuarial liabilities							
	Present value of prospective benefits payable in respect of: a.Present beneficiaries and terminated vested members b.Present active members c.Total actuarial liabilities	16,397,836 <u>11,463,251</u> 27,861,087						
2.	Assets of the System	46,405,972						
3.	Present value of future contributions (1c) – (2)	(18,544,885)						
4.	Present value of future normal contributions by employers	3,796,672						
5.	Present value of unfunded accrued liability contributions by employers (3) – (4)	(22,341,557)						



Appendix B: Development of Actuarial Value of Assets

	Actuarial Value of Assets ding December 31, 2013	for the
Actuarial Value of Assets as of	December 31, 2012	\$ 44,995,689
2. 2013 Net Cash Flowa. Contributionsb. Disbursementsc. Net Cash Flow: (a) - (b)		910,036 1,664,991 (754,955)
3. Expected Investment Return: [(1) x .0575] + [(2)c x .02875]		2,565,547
4. Expected Actuarial Value of As December 31, 2013: (1) + (2)c + (3)	ssets as of	46,806,281
5. Market Value of Assets as of D	ecember 31, 2013	44,804,737
Excess of Market Value over E Actuarial Value of Assets: (5) - (4)	xpected	(2,001,544)
7. 20% Adjustment towards Mark (6) x .20	et Value:	(400,309)
8. Preliminary Actuarial Value of A December 31, 2013: (4) + (7)	Assets as of	46,405,972
9. Final Actuarial Value of Assets December 31, 2013: [(8) not le not greater than 120% of (5)]		46,405,972
10. Rate of investment return on a	ctuarial value	4.85%
11. Rate of investment return on m	arket value	(3.73)%



Assumptions are based on the experience investigation for LGERS prepared as of December 31, 2009 and adopted by the Board of Trustees on October 21, 2010. The next experience investigation will be based on the five-year period ending December 31, 2014. The actuary will present this investigation during the fall of 2015 for adoption by the Board of Trustees with the intent of using the assumptions recommended in the December 31, 2014 experience review beginning with the December 31, 2015 annual valuation.

Interest Rate: 5.75% per annum, compounded annually.

Inflation: Both general and wage inflation are assumed to be 3.00% per annum.

Real Wage Growth: 0.50% per annum.

Separations From Active Service: Representative values of the assumed rates of separation from active service are as follows:

_	Annual Rate of Withdrawal					
<u>Service</u>	<u>Male</u>	<u>Female</u>				
0	.3000	.3000				
1	.1725	.2000				
2	.1450	.1600				
3	.1200	.1300				
4	.1000	.1250				

Annual Rates of

	Witho	drawal					
<u>Age</u>	and V	esting*	Base M	lortality**	<u>Disability</u>		
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	
25	.0600	.0800	.0004	.0002	.0004	.0005	
30	.0600	.0700	.0006	.0003	.0010	.0009	
35	.0600	.0700	.0009	.0005	.0025	.0015	
40	.0400	.0500	.0012	.0007	.0045	.0030	
45	.0400	.0400	.0017	.0011	.0055	.0040	
50	.0400	.0400	.0024	.0017	.0080	.0048	
55	.0400	.0400	.0036	.0025	.0100	.0065	
60	.0400	.0400	.0059	.0039	.0100	.0085	
65			.0086	.0058			
69			.0109	.0073			

^{*} These rates apply only after five years of membership in the system.



^{**} Base mortality rates as of December 31, 2003.

Retirements: Representative values of the assumed rates of retirement from active service are as follows:

Males

_	Service							
<u>Age</u>	5	10	15	20	25	30	35	
50				0.0500	0.0700	0.3000	0.3000	
55				0.0400	0.1000	0.2500	0.1750	
60	0.0800	0.0800	0.0800	0.0800	0.2750	0.4000	0.2500	
65	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	
70	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	
75	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	

Females

			Service			
5	10	15	20	25	30	35
			0.0700	0.0500	0.2500	0.2500
			0.0500	0.1000	0.3250	0.1750
0.0900	0.0900	0.0900	0.0900	0.3000	0.4000	0.2750
0.3500	0.3500	0.3500	0.3500	0.3500	0.3500	0.3500
0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
	0.3500 0.2500	0.0900 0.0900 0.3500 0.3500 0.2500 0.2500	0.0900 0.0900 0.0900 0.3500 0.3500 0.3500 0.2500 0.2500 0.2500	5 10 15 20 0.0700 0.0500 0.0900 0.0900 0.0900 0.0900 0.3500 0.3500 0.3500 0.3500 0.2500 0.2500 0.2500 0.2500	5 10 15 20 25 0.0700 0.0500 0.0500 0.0900 0.0900 0.0900 0.0900 0.3500 0.3500 0.3500 0.3500 0.2500 0.2500 0.2500 0.2500	5 10 15 20 25 30 0.0700 0.0500 0.2500 0.0900 0.0900 0.0900 0.0900 0.3000 0.4000 0.3500 0.3500 0.3500 0.3500 0.3500 0.3500 0.2500 0.2500 0.2500 0.2500 0.2500 0.2500

Salary Increases: Representative values of the assumed annual rates of future salary increase are as follows:

Service	Annual Rate of Salary Increase
0	7.75%
5	6.50
10	5.45
15	5.20
20	5.00
25	5.00
30	5.00
35	5.00
40	4.50
45	4.25
50	4.25



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Deaths After Retirement: Representative values of the assumed post-retirement mortality rates as of December 31, 2003 prior to any mortality improvements are as follows:

Annual Rate of Death after Retirement

	Retirees (Healthy at Retirement)		Survivors of Deceased Members		Retirees (Disabled at Retirement)	
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
55	.0064	.0035	.0061	.0044	.0277	.0176
60	.0099	.0062	.0090	.0077	.0342	.0229
65	.0165	.0104	.0149	.0125	.0407	.0296
70	.0273	.0167	.0246	.0207	.0483	.0401
75	.0469	.0281	.0422	.0341	.0596	.0558
80	.0805	.0459	.0720	.0563	.0775	.0771

Mortality Improvements: Representative values of the assumed mortality improvement rates (applied to pre-retirement mortality rate for active members and post-retirement mortality rates for retirees healthy at retirement and survivors of deceased members) after retirements are as follows:

<u>Age</u>	Male <u>Projection Scale</u>	Female Projection Scale
25	0.010	0.014
30	0.005	0.010
35	0.005	0.011
40	0.008	0.015
45	0.013	0.016
50	0.018	0.017
55	0.019	0.008
60	0.016	0.005
65	0.014	0.005
70	0.015	0.005
75	0.014	0.008
80	0.010	0.007

Deaths After Retirement (Non-Disabled): According to the RP-2000 Mortality tables for retirees. These tables are set forward two years for male employees and unadjusted for female employees. These tables are also set forward one year for male survivors of deceased members and set forward two years for female survivors of deceased members. The base retiree RP-2000 tables have no rates prior to age 50. The active employee rates of RP-2000 are used for ages less than 50 prior to any adjustments for set back or set forward.



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Death After Disability: According to the RP-2000 Mortality tables for disabled annuitants set back six years for males and set forward one year for females.

Deaths Prior to Retirement: According to the RP-2000 Mortality tables for active employees. These tables are set forward two years for male employees and unadjusted for female employees. The base RP-2000 tables for active employees have no rates after age 70. The rates from ages 71 to 79 are smoothed based on the active rate at age 70 and the retiree rate at age 80. Retiree rates are used for ages 80 and beyond.

Mortality Projection (Non-Disabled): All mortality rates are projected from December 31, 2003 using generational improvement with Scale AA.

Timing of Assumptions: All withdrawals, deaths, disabilities, retirements and salary increases are assumed to occur July 1 of each year.

Administrative Expenses: Assumed to be 0.15% of the market value of assets at the beginning of each calendar year.

Reported Compensation: Calendar year compensation as furnished by the system's office.

Valuation Compensation: Reported compensation adjusted to reflect the assumed rate of pay as of the valuation date.

Actuarial Cost Method: Entry age normal cost method.

Asset Valuation Method: Actuarial value, as developed in Appendix B. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected actuarial value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected actuarial value. The actuarial value of assets is not allowed to be greater than 120% of the market value of assets or less than 80% of the market value of assets.

Changes Since Prior Valuation: None.



Appendix D: Summary of Main Plan Provisions

The Registers of Deeds' Supplemental Pension Fund was established October 1, 1987 for all county registers of deeds who are retired from the Local Governmental Employees' Retirement System or an equivalent locally sponsored plan.

Benefits

Service Retirement Allowance

Conditions for Allowance Retirement from the Local Governmental

Employees' Retirement System or equivalent locally sponsored plan with 10 or more years of

service as a register of deeds.

Amount of Allowance Benefit payable for the life of the member only,

equal to 75% of a registers of deeds equivalent annual salary immediately preceding retirement computed on the latest monthly base rate.

Maximum benefit is \$1,500 per month.

Deferred Vested Retirement Allowance

Conditions for Allowance Separation from service after completing at least

10 years of service as a register of deeds.

Amount of Allowance Service Retirement Allowance described above

commencing upon retirement with the Local

Governmental Retirement System.

Contributions

Employer Contributions 1.5% of the monthly receipts collected pursuant to

Article 1 of Chapter 161 of the General Statutes.

Employee Contributions None.

Changes Since Prior Valuation None.



Table E-1: Projection of Fiduciary Net Positions

(in thousands)

Year	Beginning Fiduciary Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Position
12/31/2013	\$ 44,805	\$ 0	\$ 0	\$ 1,761	\$ 69	\$ 2,524	\$ 45,499
12/31/2014	45,499	0	0	1,813	70	2,563	46,179
12/31/2015	46,179	0	0	1,876	71	2,600	46,832
12/31/2016	46,832	0	0	1,893	72	2,638	47,505
12/31/2017	47,505	0	0	1,896	73	2,675	48,211
12/31/2018	48,211	0	0	1,918	74	2,716	48,935
12/31/2019	48,935	0	0	1,951	75	2,757	49,666
12/31/2020	49,666	0	0	1,986	77	2,797	50,400
12/31/2021	50,400	0	0	2,010	78	2,838	51,150
12/31/2022	51,150	0	0	2,026	79	2,882	51,927
12/31/2023	51,927	0	0	2,038	80	2,925	52,734
12/31/2024	52,734	0	0	2,040	81	2,973	53,586
12/31/2025	53,586	0	0	2,037	83	3,021	54,487
12/31/2026	54,487	0	0	2,015	84	3,073	55,461
12/31/2027	55,461	0	0	1,981	86	3,131	56,525
12/31/2028	56,525	0	0	1,949	87	3,193	57,682
12/31/2029	57,682	0	0	1,922	89	3,259	58,930
12/31/2030	58,930	0	0	1,891	91	3,333	60,281
12/31/2031	60,281	0	0	1,835	93	3,411	61,764
12/31/2032	61.764	0	0	1,784	95	3,497	63,382
12/31/2033	63,382	0	0	1,713	98	3,593	65,164
12/31/2034	65,164	0	0	1,639	101	3,698	67,122
12/31/2035	67,122	0	0	1,561	104	3,812	69,269
12/31/2036	69,269	0	0	1,482	107	3,938	71,618
12/31/2037	71,618	0	0	1,404	110	4,075	74,179
12/31/2038	74,179	0	0	1,323	114	4,224	76,966
12/31/2039	76,966	0	0	1,242	119	4,387	79,992
12/31/2040	79,992	0	0	1,165	123	4,563	83,267
12/31/2041	83,267	0	0	1,087	128	4,753	86,805
12/31/2042	86,805	0	0	1,014	134	4,959	90,616
12/31/2043	90,616	0	0	939	140	5,180	94,717
12/31/2044	94,717	0	0	872	146	5,417	99,116
12/31/2045	99,116	0	0	803	153	5,673	103,833
12/31/2046	103,833	0	0	737	160	5,945	108,881
12/31/2047	108,881	0	0	674	168	6,237	114,276
12/31/2048	114,276	0	0	614	176	6,548	120,034
12/31/2049	120,034	0	0	558	185	6,881	126,172
12/31/2050	126,172	0	0	505	195	7,235	132,707
12/31/2051	132,707	0	0	455	205	7,611	139,658
12/31/2052	139,658	0	0	410	215	8,013	147,046
12/31/2053	147,046	0	0	366	227	8,438	154,891
12/31/2054	154,891	0	0	327	239	8,891	163,216
12/31/2054	163,216	0	0	289	252	9,369	172,044
12/31/2056	172,044	0	0	256	265	9,878	181,401
12/31/2050	181,401	0	0	224	280	10,416	191,313
12/31/2057	191,313	0	0	196	295	10,987	201,809
12/31/2058	201,809	0	0	170	311	10,987	201,809
			0				
12/31/2060	212,919	0		146	328	12,229	224,674
12/31/2061	224,674	0	0	124	347	12,905	237,108
12/31/2062	237,108	0	0	106	366	13,621	250,257



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Table E-1: Projection of Fiduciary Net Positions (continued)
(in thousands)

Year	Beginning Fiduciary Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Position
12/31/2063	\$ 250,257	\$ 0	\$ 0	\$ 89	\$ 386	\$ 14,376	\$ 264,158
12/31/2064	264,158	0	0	75	407	15,175	278,851
12/31/2065	278,851	0	0	62	430	16,020	294,379
12/31/2066	294,379	0	0	51	454	16,912	310,786
12/31/2067	310,786	0	0	43	479	17,856	328,120
12/31/2068	328,120	0	0	35	506	18,852	346,431
12/31/2069	346,431	0	0	28	534	19,903	365,772
12/31/2070	365,772	0	0	23	564	21,015	386,200
12/31/2071	386,200	0	0	18	596	22,189	407,775
12/31/2072	407,775	0	0	14	629	23,429	430,561
12/31/2073	430,561	0	0	12	664	24,738	454,623
12/31/2074	454,623	0	0	9	701	26,121	480,034
12/31/2075	480,034	0	0	7	740	27,580	506,867
12/31/2076	506,867	0	0	5	782	29,123	535,203
12/31/2077	535,203	0	0	3	826	30,750	565,124
12/31/2078	565,124	0	0	3	872	32,470	596,719
12/31/2079	596,719	0	0	3	920	34,286	630,082
12/31/2080	630,082	0	0	1	972	36,201	665,310
12/31/2081	665,310	0	0	1	1,026	38,226	702,509
12/31/2082	702,509	0	0	0	1,084	40,363	741,788
12/31/2083	741,788	0	0	1	1,144	42,621	783,264
12/31/2084	783,264	0	0	1	1,208	45,004	827,059
12/31/2085	827,059	0	0	0	1,276	47,520	873,303
12/31/2086	873,303	0	0	0	1,347	50,176	922,132
12/31/2087	922,132	0	0	0	1,422	52,982	973,692
12/31/2088	973,692	0	0	0	1,502	55,945	1,028,135
12/31/2089	1,028,135	0	0	0	1,586	59,073	1,085,622
12/31/2090	1,085,622	0	0	0	1,675	62,376	1,146,323
12/31/2091	1,146,323	0	0	0	1,768	65,863	1,210,418
12/31/2092	1,210,418	0	0	0	1,867	69,546	1,278,097
12/31/2093	1,278,097	0	0	0	1,971	73,434	1,349,560
12/31/2094	1,349,560	0	0	0	2,082	77,541	1,425,019
12/31/2095	1,425,019	0	0	0	2,198	81,876	1,504,697
12/31/2096	1,504,697	0	0	0	2,321	86,455	1,588,831
12/31/2097	1,588,831	0	0	0	2,451	91,288	1,677,668
12/31/2098	1,677,668	0	0	0	2,588	96,393	1,771,473
12/31/2099	1,771,473	0	0	0	2,733	101,782	1,870,522
12/31/2100	1,870,522	0	0	0	2,885	107,473	1,975,110
12/31/2101	1,975,110	0	0	0	3,047	113,483	2,085,546
12/31/2102	2,085,546	0	0	0	3,217	119,828	2,202,157
12/31/2103	2,202,157	0	0	0	3,397	126,528	2,325,288
12/31/2104	2,325,288	0	0	0	3,587	133,602	2,455,303
12/31/2105	2,455,303	0	0	0	3,787	141,072	2,592,588
12/31/2106	2,592,588	0	0	0	3,999	148,961	2,737,550
12/31/2107	2,737,550	0	0	0	4,223	157,289	2,890,616
12/31/2108	2,890,616	0	0	0	4,459	166,085	3,052,242
12/31/2109	3,052,242	0	0	0	4,708	175,370	3,222,904
12/31/2110	3,222,904	0	0	0	4,971	185,176	3,403,109
12/31/2111	3,403,109	0	0	0	5,249	195,529	3,593,389
12/31/2112	3,593,389	0	0	0	5,543	206,463	3,794,309



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Table E-2: Actuarial Present Value of Projected Benefit Payments

(in thousands)

			`	,	Present Value of Benefit Payments			
Year	Beginning Fiduciary Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Funded Payments at 5.75%	Unfunded Payments at 3.66%	Using Single Discount Rate of 5.75%	
12/31/2013	\$ 44,805	\$ 1,761	\$ 1,761	\$ 0	\$ 1,712	\$ 0	\$ 1,712	
12/31/2014	45,499	1,813	1,813	0	1,667	0	1,667	
12/31/2015	46,179	1,876	1,876	0	1,631	0	1,631	
12/31/2016	46,832	1,893	1,893	0	1,557	0	1,557	
12/31/2017	47,505	1,896	1,896	0	1,474	0	1,474	
12/31/2018	48,211	1,918	1,918	0	1,410	0	1,410	
12/31/2019	48,935	1,951	1,951	0	1,357	0	1,357	
12/31/2020	49,666	1,986	1,986	0	1,306	0	1,306	
12/31/2021	50,400	2,010	2,010	0	1,250	0	1,250	
12/31/2022	51,150	2,026	2,026	0	1,191	0	1,191	
12/31/2023	51,927	2,038	2,038	0	1,133	0	1,133	
12/31/2024	52,734	2,040	2,040	0	1,073	0	1,073	
12/31/2025	53,586	2,037	2,037	0	1,013	0	1,013	
12/31/2026	54,487	2,015	2,015	0	947	0	947	
12/31/2027	55,461	1,981	1,981	0	881	0	881	
12/31/2028	56,525	1,949	1,949	0	819	0	819	
12/31/2029	57,682	1,922	1,922	0	764	0	764	
12/31/2030	58,930	1,891	1,891	0	711	0	711	
12/31/2031	60,281	1,835	1,835	0	652	0	652	
12/31/2032	61,764	1,784	1,784	0	600	0	600	
12/31/2033	63,382	1,713	1,713	0	545	0	545	
12/31/2034	65,164	1,639	1,639	0	493	0	493	
12/31/2035	67,122	1,561	1,561	0	444	0	444	
12/31/2036	69,269	1,482	1,482	0	398	0	398	
12/31/2037	71,618	1,404	1,404	0	357	0	357	
12/31/2038	74,179	1,323	1,323	0	318	0	318	
12/31/2039	76,966	1,242	1,242	0	282	0	282	
12/31/2040	79,992	1,165	1,165	0	250	0	250	
12/31/2041	83,267	1,087	1,087	0	221	0	221	
12/31/2042	86,805	1,014	1,014	0	195	0	195	
12/31/2043	90,616	939	939	0	171	0	171	
12/31/2044	94,717	872	872	0	150	0	150	
12/31/2045	99,116	803	803	0	130	0	130	
12/31/2046	103,833	737	737	0	113	0	113	
12/31/2047	108,881	674	674	0	98	0	98	
12/31/2048	114,276	614	614	0	84	0	84	
12/31/2049	120,034	558	558	0	73	0	73	
12/31/2050	126,172	505	505	0	62	0	62	
12/31/2051	132,707	455	455	0	53	0	53	
12/31/2052	139,658	410	410	0	45	0	45	
12/31/2053	147,046	366	366	0	38	0	38	
12/31/2054	154,891	327	327	0	32	0	32	
12/31/2055	163,216	289	289	0	27	0	27	
12/31/2056	172,044	256	256	0	22	0	22	
12/31/2057	181,401	224	224	0	19	0	19	
12/31/2058	191,313	196	196	0	15	0	15	
12/31/2059	201,809	170	170	0	13	0	13	
12/31/2060	212,919	146	146	0	10	0	10	
12/31/2061	224,674	124	124	0	8	0	8	
12/31/2062	237,108	106	106	0	7	0	7	



Table E-2: Actuarial Present Value of Projected Benefit Payments (continued)

(in thousands)

			(III til	iousarius)	Present Value of Benefit Payments			
Year	Beginning Fiduciary Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Funded Payments at 5.75%	Unfunded Payments at 3.66%	Using Single Discount Rate of 5.75%	
12/31/2063	\$ 250,257	\$ 89	\$ 89	\$ 0	\$ 5	\$ 0	\$ 5	
12/31/2064	264,158	75	75	0	4	0	4	
12/31/2065	278,851	62	62	0	3	0	3	
12/31/2066	294,379	51	51	0	3	0	3	
12/31/2067	310,786	43	43	0	2	0	2	
12/31/2068	328,120	35	35	0	2	0	2	
12/31/2069	346,431	28	28	0	1	0	1	
12/31/2070	365,772	23	23	0	1	0	1	
12/31/2071	386,200	18	18	0	1	0	1	
12/31/2072	407,775	14	14	0	1	0	1	
12/31/2073	430,561	12	12	0	0	0	0	
12/31/2074	454,623	9	9	0	0	0	0	
12/31/2075	480,034	7	7	0	0	0	0	
12/31/2076	506,867	5	5	0	0	0	0	
12/31/2077	535,203	3	3	0	0	0	0	
12/31/2078	565,124	3	3	0	0	0	0	
12/31/2079	596,719	3	3	0	0	0	0	
12/31/2080	630,082	1	1	0	0	0	0	
12/31/2081	665,310	1	1	0	0	0	0	
12/31/2082	702,509	0	0	0	0	0	0	
12/31/2083	741,788	1	1	0	0	0	0	
12/31/2084	783,264	1	1	0	0	0	0	
12/31/2085	827,059	0	0	0	0	0	0	
12/31/2086	873,303	0	0	0	0	0	0	
12/31/2087	922,132	0	0	0	0	0	0	
12/31/2088	973,692	0	0	0	0	0	0	
12/31/2089	1,028,135	0	0	0	0	0	0	
12/31/2090	1,085,622	0	0	0	0	0	0	
12/31/2091	1,146,323	0	0	0	0	0	0	
12/31/2092	1,210,418	0	0	0	0	0	0	
12/31/2093	1,278,097	0	0	0	0	0	0	
12/31/2094	1,349,560	0	0	0	0	0	0	
12/31/2095	1,425,019	0	0	0	0	0	0	
12/31/2096	1,504,697	0	0	0	0	0	0	
12/31/2097	1,588,831	0	0	0	0	0	0	
12/31/2098	1,677,668	0	0	0	0	0	0	
12/31/2099	1,771,473	0	0	0	0	0	0	
12/31/2100	1,870,522	0	0	0	0	0	0	
12/31/2101	1,975,110	0	0	0	0	0	0	
12/31/2102	2,085,546	0	0	0	0	0	0	
12/31/2103	2,202,157	0	0	0	0	0	0	
12/31/2104	2,325,288	0	0	0	0	0	0	
12/31/2105	2,455,303	0	0	0	0	0	0	
12/31/2106	2,592,588	0	0	0	0	0	0	
12/31/2107	2,737,550	0	0	0	0	0	0	
12/31/2108	2,890,616	0	0	0	0	0	0	
12/31/2109	3,052,242	0	0	0	0	0	0	
12/31/2110	3,222,904	0	0	0	0	0	0	
12/31/2111	3,403,109	0	0	0	0	0	0	
12/31/2112	3,593,389	0	0	0	0	0	0	



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Appendix F: Detailed Tabulations of the Data

Table F-1: The Number and Average Reported Compensation of Active Members Distributed by Age and Service as of December 31, 2013

Years of Service											
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	0	0	0	0	0	0	0	0	0	0	(
	0	0	0	0	0	0	0	0	0	0	C
25 to 29	0	1	0	0	0	0	0	0	0	0	,
	0	61,859	0	0	0	0	0	0	0	0	61,859
30 to 34	0	1	0	0	0	0	0	0	0	0	
	0	81,841	0	0	0	0	0	0	0	0	81,841
35 to 39	0	0	0	2	0	0	0	0	0	0	2
	0	0	0	50,306	0	0	0	0	0	0	50,306
40 to 44	0	0	2	3	4	3	0	0	0	0	12
	0	0	92,971	45,330	48,484	58,865	0	0	0	0	57,70
45 to 49	0	0	3	2	4	3	2	0	0	0	14
	0	0	59,243	60,848	42,184	81,043	78,428	0	0	0	62,010
50 to 54	0	1	3	1	1	2	3	2	0	0	13
	0	56,564	64,967	41,838	50,616	51,221	64,112	60,717	0	0	58,472
55 to 59	0	2	6	2	2	6	4	4	2	0	28
	0	59,819	42,680	49,808	62,057	54,858	68,801	63,505	72,421	0	57,238
60 to 64	1	0	1	2	0	7	4	1	1	0	17
	62,650	0	48,276	88,159	0	55,189	60,253	45,589	62,593	0	60,162
65 to 69	0	1	1	0	1	1	0	0	2	0	6
	0	56,892	58,464	0	54,047	71,314	0	0	66,435	0	62,265
70 & Up	0	1	0	0	2	0	2	0	0	1	6
	0	46,702	0	0	90,601	0	50,894	0	0	66,667	66,060
Total	1	7	16	12	14	22	15	7	5	1	100
	62,650	60,499	57,587	56,339	55,189	59,498	64,480	60,149	68,061	66,667	59,604



Appendix F: Detailed Tabulations of the Data

Table F-2: The Number and Annual Retirement Allowances of Retired Members and Survivors of Deceased Members Distributed by Age as of December 31, 2013

		Men		Women			
Age	Number	Allowances		Number	Α	llowances	
					_	40.000	
54				1	\$	18,000	
55				2		36,000	
57				4		72,000	
58				2		36,000	
59				1		18,000	
60	1	\$	18,000	1		18,000	
61	3		54,000	2		36,000	
62				2		36,000	
63				1		18,000	
64	1		18,000	7		126,000	
65				3		54,000	
66	1		18,000	4		72,000	
67	1		18,000	4		72,000	
68				6		108,000	
69				4		72,000	
70				1		18,000	
71				2		36,000	
72				1		18,000	
73	1		18,000	3		52,650	
74				4		72,000	
75				3		54,000	
77				3		54,000	
78	1		18,000	1		18,000	
79	1		18,000				
80	1		18,000	1		18,000	
81				2		36,000	
82				1		18,000	
83				2		36,000	
84				3		54,000	
85				2		34,902	
88				1		18,000	
89				3		52,902	
90	2		36,000				
91	1		18,000				
92				1		18,000	
93	1		7,650				
94				1		18,000	
95				1		18,000	
Total	15	\$	259,650	80	\$	1,436,454	

