REPORT ON THE ACTUARIAL VALUATION OF THE REGISTERS OF DEEDS' SUPPLEMENTAL PENSION FUND PREPARED AS OF DECEMBER 31, 2011

buckconsultants⁻

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October 2, 2012

Mr. Steve Toole Director State of North Carolina Department of State Treasurer Retirement Systems Division 325 North Salisbury Street Raleigh, NC 27603-1385

Dear Mr. Toole:

We submit herewith our Report on the Actuarial Valuation of the Registers of Deeds' Supplemental Pension Fund, prepared as of December 31, 2011. The report has been prepared in accordance with North Carolina General Statute 161-50.

The valuation has been prepared in accordance with the parameters of Statement Nos. 25 and 27 of the Governmental Accounting Standards Board. As provided in Section 161-50.2 of the General Statutes (as amended by Session Law 2007-245), contributions to support the Fund are equal to 1.50% of the monthly receipts collected pursuant to Article 1 of Chapter 161 of the General Statutes. The total annual required contribution (ARC) under GASB for the 2013-2014 fiscal year is \$0. However, since this Plan 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 ARC under GASB 27.

The plan sponsor selected the assumptions used for the results in this report. We believe that these assumptions are reasonable and comply with the requirements of GASB Nos. 25 and 27. We prepared this report in accordance with the requirements of these standards.

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.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

Michael A. Ribble, FSA, EA, MAAA Director, Consulting Actuary

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Larry Langer, ASA, EA, MAAA Principal, Consulting Actuary

14911 Quorum Drive, Suite 200 • Dallas, TX 75254-7534 972.628.6800 • 972.628.6801 (fax)

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REPORT ON THE ACTUARIAL VALUATION OF THE REGISTERS OF DEEDS' SUPPLEMENTAL PENSION FUND PREPARED AS OF DECEMBER 31, 2011

SECTION I - SUMMARY OF PRINCIPAL RESULTS

 This report, prepared as of December 31, 2011, presents the results of an overall 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.

VALUATION DATE	12/31/2011	12/31/2010
Active members included in valuation Number Reported compensation Valuation compensation Terminated vested participants Number Annual Allowances	100 \$ 5,874,918 \$ 6,196,415 2 \$ 36,000	100 \$ 5,926,120 \$ 6,171,165 1 \$ 18,000
Beneficiaries Number Annual allowances	84 \$ 1,498,104	83 \$ 1,469,916
Assets: Market related actuarial value Market value	\$ 42,622,991 44,807,236	\$ 40,529,252 40,862,418
Unfunded accrued liability/(surplus)	\$ (20,429,363)	\$ (18,425,562)
Fiscal Year Ending	June 30, 2014	June 30, 2013
Annual required employer contribution: Normal cost Accrued liability Total Liquidation period	\$ 653,392 <u>(653,392)</u> \$ 0 N/A*	\$ 648,789 <u>(648,789)</u> \$ 0 N/A*

TABLE I SUMMARY OF PRINCIPAL RESULTS

* 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.

- 2. Tables summarizing the membership of the system as of the valuation date are shown in Section II.
- 3. An allocation of investments by category is shown in Section III.
- 4. Comments on the valuation results are provided in Section IV.
- 5. Comments on the experience and actuarial gains during the valuation year are provided in Section V.
- Accounting information to be disclosed in the financial statements of the System and the employer is provided in Section VI.
- 7. Schedule 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, 2011.
- 8. Schedule B of this report presents the development of the actuarial value of assets.
- 9. Schedule C of this report outlines the full set of actuarial assumptions and methods employed.
- 10. Schedule D gives a summary of the benefit and contribution provisions of the system.
- 11. Schedule E provides detailed tabulations of the membership of the system as of the valuation date.

SECTION II - 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, 2011 upon which the valuation was based.

TABLE II

THE NUMBER AND REPORTED COMPENSATION OF ACTIVE MEMBERS INCLUDED IN THE VALUATION AS OF DECEMBER 31, 2011

GROUP	NUMBER	AVERAGE AGE	AVERAGE SERVICE	 EPORTED PENSATION
Males	19	52.8	8.3	\$ 1,310,990
Females	<u> </u>	<u>55.5</u>	<u>21.3</u>	 4,563,928
Total	100	55.0	18.8	\$ 5,874,918

TABLE III

THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES INCLUDED IN THE VALUATION AS OF DECEMBER 31, 2011

GROUP	NUMBER	AVERAGE AGE	ANNUAL RETIREMENT ALLOWANCES
Males	16	72.0	\$ 277,650
Females	<u> </u>	<u>70.2</u>	1,220,454
Total	84	70.5	\$ 1,498,104

SECTION III – ASSET ALLOCATION

The following table shows an allocation of investments by category for the Register of Deeds' Supplemental Pension Fund as of December 31, 2011.

TABLE IV

ALLOCATION OF INVESTMENTS BY CATEGORY FOR THE REGISTER OF DEEDS' SUPPLEMENTAL PENSION FUND AS OF DECEMBER 31, 2011

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 IV - COMMENTS ON VALUATION

- 1. Schedule 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, 2011.
- 2. The results of the valuation show that the Fund has total prospective liabilities of \$26,245,098 of which \$14,723,990 is for the prospective benefits payable on account of present beneficiaries and \$11,521,108 is for the prospective benefits payable on account of present active members. Against these liabilities, the



Fund has present assets of \$42,622,991 leaving a balance of \$(16,377,893) as the present value of contributions to be made in the future.

- 3. The employer's contributions consist of normal contributions and accrued liability contributions. The valuation indicates that employer normal contributions totaling \$653,392 are required to provide the benefits of the Fund for the average new member and include the amount required for administrative expenses.
- 4. Prospective employer normal contributions have a present value of \$4,051,470. When this amount is subtracted from \$(16,377,893) which is the present value of future contributions, the result is an unfunded actuarial accrued liability/(surplus) of \$(20,429,363).

SECTION V - COMMENTS ON EXPERIENCE AND GAINS

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

TABLE V

RECONCILIATION OF CHANGE IN UNFUNDED ACCRUED LIABILITY SINCE THE PRIOR VALUATION (IN MILLIONS)

Unfunded accrued liability/(surplus) as of 12/31/10	\$ (18.4)
Normal cost during 2011	0.6
Reduction due to actual contributions during 2011	(0.8)
Interest on unfunded accrued liability, normal cost and contributions	(1.0)
Asset (gain)/loss	(0.5)
Accrued liability (gain)/loss	(0.3)
Unfunded accrued liability/(surplus) as of 12/31/11	\$ (20.4)

SECTION VI - ACCOUNTING INFORMATION

 Statement Nos. 25 and 27 of the Governmental Accounting Standards Board (GASB) set forth certain items of information to be disclosed in the financial statements of the System and the employer. One such item is a distribution of the number of employees by type of membership, as follows:

GROUP	NUMBER
Retired participants and beneficiaries currently receiving benefits	84
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	2
Active participants Total	<u> 100</u> 186

NUMBER OF ACTIVE AND RETIRED PARTICIPANTS AS OF DECEMBER 31, 2011

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation <u>Date</u>	Actuarial Value of Assets <u>(a)</u>	Actuarial Accrued Liability (AAL) Entry Age <u>(b)</u>	Unfunded AAL (UAAL) <u>(b-a)</u>	Funded Ratio <u>(a / b)</u>	Covered Payroll <u>(c)</u>	UAAL as a Percentage of Covered Payroll <u>((b-a)/c)</u>
12/31/2006	\$32,371,059	\$17,375,253	\$(14,995,806)	186.3%	\$5,558,147	(269.8)%
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)

3. The annual required contribution (ARC) of the employer, determined in accordance with the parameters of GASB 25/27, is shown below. If the accrued liability contribution is based on amortization of the unfunded actuarial accrued liability of \$(20,429,363) 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.

2013/2014 FISCAL YEAR ANNUAL REQUIRED EMPLOYER CONTRIBUTION RATES (ARC) BASED ON THE VALUATION AS OF DECEMBER 31, 2011

ANNUAL REQUIRED CONTRIBUTION (ARC)	AMOUNT
Normal Cost	\$653,392
Accrued Liability	<u>(653,392)</u>
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.

4. Additional information as of December 31, 2011 follows.

Valuation date	12/31/11
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**	5.75%
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.



SCHEDULE A

RESULTS OF THE VALUATION AS OF DECEMBER 31, 2011

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 	14,723,990 <u>11,521,108</u> 26,245,098
2.	Assets of the System	42,622,991
3.	Present value of future contributions $(1)(c) - (2)$	(16,377,893)
4.	Present value of future normal contributions by employers	4,051,470
5.	Present value of unfunded accrued liability contributions by employers $(3) - (4)$	(20,429,363)

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SCHEDULE B

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS FOR THE YEAR ENDING DECEMBER 31, 2011

1.	Actuarial Value of Assets as of December 31, 2010	\$ 40,529,252
2.	2011 Net Cash Flow a. Contributions b. Disbursements c. Net Cash Flow: (a) - (b)	 765,439 <u>1,526,318</u> (760,879)
3.	Expected Investment Return: [(1) x .0575] + [(2)c x .02875]	2,308,557
4.	Expected Actuarial Value of Assets as of December 31, 2011: (1) + (2)c + (3)	42,076,930
5.	Market Value of Assets as of December 31, 2011	44,807,236
6.	Excess of Market Value over Expected Actuarial Value of Assets: (5) - (4)	2,730,306
7.	20% Adjustment towards Market Value: (6) x .20	546,061
8.	Preliminary Actuarial Value of Assets as of December 31, 2011: (4) + (7)	42,622,991
9.	Final Actuarial Value of Assets as of December 31, 2011: [(8) not less than 80% of (5) and not greater than 120% of (5)]	42,622,991
10.	Rate of investment return on actuarial value	7.11%
11.	Rate of investment return on market value	11.62%

SCHEDULE C

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

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.

INTEREST RATE: 5.75% per annum, compounded annually.

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

PRODUCTIVITY INCREASE: 0.50% per annum.

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed rates of separation from active service are as follows:

	ANNUAL RATES OF WITHDRAWAL					
<u>Service</u>	Male	<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 Vesting*		Base Mortality**		<u>Disability</u>			
	Male	<u>Female</u>	Male	Female	Male	<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.

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

				Service			
Age	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

MALES

FEMALES

	Service							
Age	5	10	15	20	25	30	35	
50				0.0700	0.0500	0.2500	0.2500	
55				0.0500	0.1000	0.3250	0.1750	
60	0.0900	0.0900	0.0900	0.0900	0.3000	0.4000	0.2750	
65	0.3500	0.3500	0.3500	0.3500	0.3500	0.3500	0.3500	
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	

SALARY INCREASES: Representative values of the assumed annual rates of future salary increase are as follows:

<u>Service</u>	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

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

_									
	Beneficiaries of								
	<u>Healthy</u>	<u>Retirees</u>	Deceased Members		Disabled Retirees				
<u>Age</u>	Male	<u>Female</u>	Male	<u>Female</u>	Male	<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 healthy retirees and beneficiaries of deceased members) after retirements are as follows:

<u>Age</u>	Male <u>Projection Scale</u>	Female <u>Projection Scale</u>
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 beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries of deceased members and set forward two years for female beneficiaries 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 setbacks.

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. A blend of active rates and retired rates are used from ages 70 to 80 prior to any set back and adjustments.

MORTALITY PROJECTION (NON-DISABLED): All mortality rates are projected from December 31, 2003 using 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.

VALUATION METHOD: Entry age normal cost method.

ASSET VALUATION METHOD: Actuarial value, as developed in Schedule 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.

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SCHEDULE D

SUMMARY OF MAIN BENEFIT 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.

SCHEDULE E

TABLE 1

THE NUMBER AND AVERAGE REPORTED COMPENSATION OF ACTIVE MEMBERS DISTRIBUTED BY AGE AND SERVICE AS OF DECEMBER 31, 2011

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 25 to 29 41,115 41,115 30 to 34 17,818 17,818 35 to 39 0 65,612 56,923 9,918 44,151 40 to 44 0 65,879 0 54,855 59,761 61,524 45 to 49 73,899 53,642 64,511 30,776 72,789 61,925 50 to 54 0 90,078 51,773 49,593 62,467 50,340 56,577 64,575 58,815 55 to 59 66,627 75,597 68,619 43,916 58,989 50,766 62,341 63,651 61,688 60 to 64 50,552 48,023 55,247 52,284 0 57,888 60,567 51,798 74,088 60,603 55,816 65 to 69 63,439 74,919 67,614 46,230 0 57,118 59,513 70 & up 0 53,341 53,582 115,432 51,123 0 65,353 64,992 Total 58,133 60,818 69,008 64,524 0 58,916 64,002 49,946 59,133 52,641 58,749

SCHEDULE E

TABLE 2

THE DISTRIBUTION OF THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES BY AGE AS OF DECEMBER 31, 2011

		Men			Women	
Age	Number		Amount	Number		Amount
52				1	\$	18,000
53				2		36,000
55				3		54,000
56				1		18,000
57				1		18,000
58	1	\$	18,000	1		18,000
59	3		54,000	2		36,000
60				1		18,000
61				1		18,000
62	1		18,000	3		54,000
63				3		54,000
64	1		18,000	2		36,000
65	1		18,000	4		72,000
66				5		90,000
67				3		54,000
68				1		18,000
69	1		18,000	1		18,000
70				1		18,000
71	1		18,000	3		52,650
72				4		72,000
73				2		36,000
75				3		54,000
76	1		18,000	1		18,000
77	1		18,000			
78	1		18,000	1		18,000
79				2		36,000
80				1		18,000
81				3		54,000
82				3		54,000
83				2		34,902
86				1		18,000
87				3		52,902
88	2		36,000			
89	1		18,000			
90				1		18,000
91	1		7,650			
92				1		18,000
93				1		18,000
Total	16	\$	277,650	68	\$	1,220,454