



# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

PLEASE REMIT A COPY OF THIS  
INVOICE WITH YOUR PAYMENT

December 6, 2017

Ms. Colleen Rumplach  
HR Coordinator  
Yadkin County  
P.O. Box 220  
Yadkinville, NC 27055

**Re: Invoice for the June 30, 2016 Actuarial Valuation of the Health Care Plan of Yadkin County**

Dear Ms. Rumplach:

We have performed the June 30, 2016 Actuarial Valuation of the Health Care Plan of Yadkin County. The fee for this service is \$4,459.50. Yadkin County should send a check payable to "Cavanaugh Macdonald Consulting, LLC" addressed to my attention at the address shown below.

If any questions should arise, please call us at 678-388-1700.

Sincerely,

Todd B. Green, ASA, FCA, MAAA  
Principal and Consulting Actuary

TBG:bvt



**Cavanaugh Macdonald**  
CONSULTING, LLC

*The experience and dedication you deserve*

**YADKIN COUNTY  
ACTUARIAL VALUATION OF THE HEALTH CARE PLAN**

**PREPARED AS OF JUNE 30, 2016**





# Cavanaugh Macdonald

CONSULTING, LLC

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December 6, 2017

Ms. Colleen Rumplach  
HR Coordinator  
Yadkin County  
P.O. Box 220  
Yadkinville, NC 27055

**Re: June 30, 2016 Actuarial Valuation of the Health Care Plan of Yadkin County**

Dear Ms. Rumplach:

Enclosed are the results of the June 30, 2016 Actuarial Valuation of the Health Care Plan of Yadkin County. In preparing the valuation, the actuary relied on data provided by the County and the North Carolina Local Governmental Employees' Retirement System (NCLGERS). While not verifying the data at source, the actuary performed tests for consistency and reasonability.

The valuation was based on an assumed interest rate of 4.00%. Schedule A summarizes the valuation results, including a summary of membership data, the valuation balance sheet and the actuarially determined contribution rates. Schedule B contains the required Governmental Accounting Standards Board (GASB) disclosure information. Schedule C outlines the full set of actuarial assumptions and methods employed. Where appropriate, the actuarial assumptions have been updated based on the most recent NCLGERS experience analysis. Schedule D provides a summary of the benefit and contribution provisions as interpreted for valuation purposes.

The annual required contribution was determined in accordance with the accounting requirements under GASB Statement No. 43 and GASB Statement No. 45. The assumptions recommended by the actuary are, in the aggregate, reasonably related to the experience under the Plan and to reasonable expectations of anticipated experience under the Plan and meet the parameters for the disclosures under GASB Statement No. 43 and GASB Statement No. 45.



Ms. Colleen Rumpasch  
December 6, 2017  
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On June 2, 2015, GASB Statement No. 74 and GASB Statement No. 75 (GASB 74 and 75) were unanimously adopted by the GASB Board. The disclosure requirements of GASB 74 and 75 will be similar to the disclosure requirements for pension benefits under GASB Statement No. 67 and GASB Statement No. 68. GASB 74 relates to accounting disclosures for plan sponsors and, as such, replaces GASB 43 beginning with fiscal years ending June 30, 2017. GASB 75 relates to accounting disclosures for contributing employers and, as such, replaces GASB 45 beginning with fiscal years ending June 30, 2018. GASB 74 and 75 will require applicable OPEB plan sponsors and contributing employers to disclose the net OPEB liability on the statement of financial position and book an accounting expense based upon the entry age normal actuarial cost method. Beyond the use of a specified actuarial cost method, GASB's new disclosure standards will also require the discount rate used to calculate liabilities to be based upon the yield of 20-year, tax-exempt municipal bonds and the expected rate of return on plan assets, to the extent plan assets are projected to be available for the payment of future benefits. Additionally, GASB 74 and 75 will bring about many other changes in the liability valuation and accounting disclosure processes currently in place which are expected to significantly impact data collection, timing, and effort. As details for the new GASB OPEB disclosure standards emerge, planning and coordination between plan sponsors, contributing employers, actuaries, and auditors is recommended.

The impact of the Affordable Care Act (ACA) was addressed in this valuation. Review of the information currently available did not identify any specific provisions of the ACA that are anticipated to significantly impact results. While the impact of certain provisions such as the excise tax on high-value health insurance plans beginning in 2020 (if applicable), mandated benefits and participation changes due to the individual mandate should be recognized in the determination of liabilities, overall future plan costs and the resulting liabilities are driven by amounts employers and retirees can afford (i.e., trend). The trend assumption forecasts the anticipated increase to initial per capita costs, taking into account health care cost inflation, increases in benefit utilization, plan changes, government-mandated benefits, and technological advances. Given the uncertainty regarding the ACA's implementation (e.g., the impact of excise tax on high-value health insurance plans, changes in participation resulting from the implementation of state-based health insurance exchanges), continued monitoring of the ACA's impact on the Plan's liability will be required.

Future actuarial results may differ significantly from the current results 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. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein. In our opinion, if the required contributions are made by the employer from year to year in the future at the levels required on the basis of the successive actuarial valuations, the current assets along with the future anticipated contributions will be sufficient to meet all benefit obligations of the Plan for the current active and retired members.



Ms. Colleen Rumpasch

December 6, 2017

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This is to certify that the independent consulting actuaries are Members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the Plan.

If you have any questions, please call us at 678-388-1700.

Respectfully submitted,

A handwritten signature in blue ink that reads 'Todd B. Green' followed by a long horizontal flourish.

Todd B. Green, ASA, FCA, MAAA  
Principal and Consulting Actuary

A handwritten signature in blue ink that reads 'Alisa Bennett' in a cursive style.

Alisa Bennett, FSA, EA, FCA, MAAA  
Principal and Consulting Actuary

TBG/AB:bvt



**JUNE 30, 2016**  
**ACTUARIAL VALUATION OF THE HEALTH CARE PLAN**  
**OF**  
**YADKIN COUNTY**

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**SCHEDULE A – SUMMARY OF PRINCIPAL RESULTS**

Membership as of June 30, 2016			
<b>Active Members</b>			
Law Enforcement Officers			
Number			33
Covered Payroll	\$	1,316,036	
Valuation Compensation <sup>+</sup>	\$	1,394,176	
Firefighters			
Number			31
Covered Payroll	\$	1,249,620	
Valuation Compensation <sup>+</sup>	\$	1,314,515	
General Employees			
Number			156
Covered Payroll	\$	5,882,452	
Valuation Compensation <sup>+</sup>	\$	6,211,153	
<b>Retired Members</b>			
Number			38

<sup>+</sup> Reported annual compensation adjusted for expected changes during the year.

Valuation Balance Sheet as of June 30, 2016			
<b>Accrued Actuarial Liabilities</b>			
Present Value of Benefits (Based on Credited Service to Date)			
Payable in Respect of:			
(1) Present Retired Members and Beneficiaries	\$	2,385,633	
(2) Present Active Members		2,528,909	
(3) Total Accrued Actuarial Liabilities [(1) + (2)]	\$	4,914,542	
<b>Present and Prospective Assets</b>			
(4) Present Assets	\$	0	
(5) Present Value of Future Accrued Liability Contributions (Unfunded Accrued Liability) [(3) – (4)]		4,914,542	
(6) Total Present and Prospective Assets [(4) + (5)]	\$	4,914,542	



**SCHEDULE A – SUMMARY OF PRINCIPAL RESULTS  
(CONTINUED)**

The valuation indicates the following recommended employer contribution is required to meet the parameters established under GASB 43 and 45 and corresponds to a contribution required to meet the cost of benefits currently accruing and provide for the amortization of the unfunded actuarial accrued liability over a 30-year period, based on a 4.00% investment rate of return and the assumption payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule C.

Annual Required Contribution (ARC)		
For Fiscal Year Ending June 30, 2018		
Contribution Component	ARC Dollar Amount	ARC as a Percentage of Valuation Compensation
Normal Cost	\$ 198,781	2.23%
Unfunded Accrued Liability Amortization Payment	187,797	2.11%
Total Contribution	\$ 386,578	4.34%





### SCHEDULE B – ACCOUNTING INFORMATION

GASB Statement No. 43 and GASB Statement No. 45 set forth certain items of required supplementary information to be disclosed in the financial statements of the County. The following required supplementary information was prepared for illustrative purposes. The County is responsible for the preparation and fair presentation of its financial statements in accordance with U.S. generally accepted accounting principles and is subject to audit to obtain reasonable assurance the financial statements are free from material misstatement.

Annual OPEB Cost and Net OPEB Obligation for Fiscal Year Ending June 30, 2017		
(A) Employer Annual Required Contribution (ARC)*	\$	569,840
(B) Valuation Discount Rate		4.00%
(C) Interest on Net OPEB Obligation [(B) x (I)]		33,551
(D) Amortization Factor		26.1695
(E) Adjustment to Annual Required Contribution		32,051
(F) Annual OPEB Cost [(A) + (C) - (E)]	\$	571,340
(G) Employer Contributions Made for Fiscal Year Ending June 30, 2017**		201,691
(H) Increase (Decrease) in Net OPEB Obligation [(F) - (G)]	\$	369,649
(I) Net OPEB Obligation Beginning of Fiscal Year		838,770
(J) Net OPEB Obligation End of Fiscal Year [(H) + (I)]	\$	1,208,419

\* Based on the ARC from the December 31, 2014 Actuarial Valuation Report. We assumed there have been no changes to the plan, benefit structure or population covered that would require an updated Actuarial Valuation ARC be used.

\*\*The net employer contribution of \$201,691 was provided by the County.

Trend Information*			
Fiscal Year Ending	Annual OPEB Cost (AOC)	Percentage of AOC Contributed	Net OPEB Obligation
6/30/2015	\$ 350,348	211.7%	\$ 425,267
6/30/2016	\$ 554,003	25.4%	\$ 838,770
6/30/2017	\$ 571,340	35.3%	\$ 1,208,419

\* Historical information was provided in the County's June 30, 2016 Annual Financial Report.



**SCHEDULE B – ACCOUNTING INFORMATION  
(CONTINUED)**

Schedule of Funding Progress							
Actuarial Valuation Date	Actuarial Value of Assets [A]	Actuarial Accrued Liability (AAL) [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	\$ 0	\$ 5,002,827	\$ 5,002,827	0.0%	\$ 8,718,398	57.4%	
12/31/2008	\$ 0	\$ 3,628,449	\$ 3,628,449	0.0%	\$ 9,170,164	39.6%	
12/31/2010	\$ 0	\$ 3,641,039	\$ 3,641,039	0.0%	\$ 9,045,387	40.3%	
12/31/2012	\$ 0	\$ 4,400,596	\$ 4,400,596	0.0%	\$ 8,856,303	49.7%	
12/31/2014	\$ 0	\$ 7,113,806	\$ 7,113,806	0.0%	\$ 9,110,765	78.1%	
06/30/2016	\$ 0	\$ 4,914,542	\$ 4,914,542	0.0%	\$ 8,448,108	58.2%	

Note: These measures do not indicate whether or not the Plan would have sufficient assets if it were terminated, nor do they indicate what level of future contributions will be required.

Additional Valuation Information	
Valuation Date	June 30, 2016
Actuarial Cost Method	Projected Unit Credit
Amortization Method	Level Percentage of Pay, Closed
Remaining Amortization Period	30 Years
Amortization Factor	26.1695
Asset Valuation Method	Market Value of Assets
Actuarial Assumptions:	
Investment Rate of Return*	4.00%
Medical Trend Assumptions	
Pre-Medicare Trend Rate	7.75% - 5.00%
Year of Ultimate Trend Rate	2022
*Includes Inflation at	3.00%

The assumed investment rate of return reflects the fact that no assets are set aside within Yadkin County that are legally held exclusively for retiree health benefits.



## The Health Care Plan of Yadkin County

### SCHEDULE C – OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

The actuarial assumptions have been updated based on the most recent NCLGERS experience analysis.

**INTEREST RATE:** 4.00% per annum, compounded annually.

**GENERAL EMPLOYEES:** Description and representative values of the annual rates of separation from service are as follows:

**DEATHS AFTER RETIREMENT (HEALTHY):** RP-2014 Healthy Annuitant base rates projected to 2015 using MP-2015, projected forward generationally from 2015 using MP-2015. Rates are adjusted by 115% (male) and 79% (female) for ages under 78 and by 135% (male) and 116% (female) for age 78 and older.

Annual Rates of							
Service	Withdrawal		Age	Withdrawal and Vesting*		Disability	
	Male	Female		Male	Female	Male	Female
0	18.5%	20.5%	25	7.5%	10.0%	0.04%	0.05%
1	15.5%	17.5%	30	6.0%	9.0%	0.05%	0.05%
2	13.0%	15.0%	35	4.5%	6.5%	0.05%	0.05%
3	10.5%	12.5%	40	4.0%	5.0%	0.30%	0.20%
4	8.5%	10.5%	45	4.0%	4.5%	0.40%	0.30%
			50	4.0%	4.5%	0.60%	0.35%
			55	4.0%	4.5%	0.80%	0.60%
			60	4.0%	4.5%	0.80%	0.60%
			65	4.0%	4.5%	0.00%	0.00%

\* These rates apply only after five years of membership in the system.

Annual Rates of Retirement – Males							
Age	5	10	15	20	25	30	35
50				3.0%	7.0%	27.5%	15.0%
55				5.0%	10.0%	25.0%	15.0%
60	10.0%	10.0%	10.0%	10.0%	27.5%	30.0%	25.0%
65	30.0%	30.0%	30.0%	30.0%	35.0%	35.0%	35.0%
70	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Annual Rates of Retirement – Females							
Age	5	10	15	20	25	30	35
50				4.5%	6.0%	30.0%	20.0%
55				6.0%	8.5%	30.0%	20.0%
60	11.0%	11.0%	11.0%	11.0%	30.0%	35.0%	25.0%
65	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%
70	15.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



**SCHEDULE C - OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS  
(CONTINUED)**

**LAW ENFORCEMENT OFFICERS:** Description and representative values of the annual rates of separation from service are as follows:

**DEATHS AFTER RETIREMENT (HEALTHY):** RP-2014 Healthy Annuitant base rates projected to 2015 using MP-2015, projected forward generationally from 2015 using MP-2015. Rates are adjusted by 104% for males and 100% for females.

Annual Rates of							
Service	Withdrawal		Age	Withdrawal and Vesting*		Disability	
	Male	Female		Male	Female	Male	Female
0	12.0%	12.0%	25	5.00%	5.00%	0.06%	0.25%
1	8.5%	8.5%	30	5.00%	5.00%	0.10%	0.30%
2	8.0%	8.0%	35	4.00%	4.00%	0.20%	0.40%
3	7.5%	7.5%	40	3.00%	3.00%	0.30%	0.50%
4	7.0%	7.0%	45	3.50%	3.50%	0.40%	0.60%
			50	3.50%	3.50%	0.40%	0.70%
			55	3.50%	3.50%	0.40%	0.70%
			60	3.50%	3.50%	0.40%	0.70%
			65	3.50%	3.50%	0.00%	0.00%

\* These rates apply only after five years of membership in the system.

Annual Rates of Retirement							
Age	5	10	15	20	25	30	35
50			8.0%	8.0%	8.0%	40.0%	40.0%
55	10.0%	32.5%	32.5%	32.5%	32.5%	75.0%	40.0%
60	10.0%	20.0%	20.0%	20.0%	20.0%	22.5%	20.0%
65	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
70	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



**SCHEDULE C - OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS  
(CONTINUED)**

**FIREFIGHTERS:** Description and representative values of the annual rates of separation from service are as follows:

**DEATHS AFTER RETIREMENT (HEALTHY):** RP-2014 Healthy Annuitant base rates projected to 2015 using MP-2015, projected forward generationally from 2015 using MP-2015.

Annual Rates of							
Service	Withdrawal		Age	Withdrawal and Vesting*		Disability	
	Male	Female		Male	Female	Male	Female
0	13.0%	13.0%	25	3.50%	3.50%	0.10%	0.06%
1	10.5%	10.5%	30	4.00%	4.00%	0.10%	0.09%
2	9.5%	9.5%	35	3.00%	3.00%	0.15%	0.24%
3	8.5%	8.5%	40	2.50%	2.50%	0.40%	0.38%
4	7.5%	7.5%	45	2.50%	2.50%	0.55%	0.48%
			50	2.50%	2.50%	1.00%	0.76%
			55	2.50%	2.50%	1.50%	1.76%
			60	2.50%	2.50%	1.50%	2.76%
			65	2.50%	2.50%	0.00%	0.00%

\* These rates apply only after five years of membership in the system.

Annual Rates of Retirement							
Age	5	10	15	20	25	30	35
50				2.5%	8.5%	32.5%	32.5%
55	2.5%	2.5%	2.5%	2.5%	13.0%	50.0%	27.5%
60	5.8%	5.8%	5.8%	5.8%	32.5%	32.5%	32.5%
65	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%
70	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%
75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



**SCHEDULE C - OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS  
(CONTINUED)**

**ALL MEMBERS:**

**DEATHS BEFORE RETIREMENT:** RP-2014 Employee base rates projected to 2015 using MP-2015, projected forward generationally from 2015 using MP-2015.

**DEATHS AFTER RETIREMENT (BENEFICIARY):** RP-2014 Healthy Annuitant base rates projected to 2015 using MP-2015, projected forward generationally from 2015 using MP-2015. Rates are adjusted by 123% for all ages.

**DEATHS AFTER RETIREMENT (DISABLED):** RP-2014 Disabled Retiree base rates projected to 2015 using MP-2015, projected forward generationally from 2015 using MP-2015. Rates are adjusted by 103% (male) and 99% (female) for all ages.

**LEAVE CONVERSION:** Creditable service for unreduced retirement from NCLGERS has been increased by one year.

**ASSET VALUATION METHOD:** Market Value.

**ACTUARIAL METHOD:** Costs were determined using the Projected Unit Credit Actuarial Cost Method. The annual service cost is the present value of the portion of the projected benefit attributable to participation service during the upcoming year, and the Actuarial Accrued Liability (AAL) is equal to the present value of the portion of the projected benefit attributable to service before the valuation date. Service from hire date through full retirement eligibility date was used in allocating costs.

**HEALTH CARE COST TREND RATES:** The following chart details trend assumptions for annual health care claims.

Year	Annual Rate of Increase
2016	7.75%
2017	7.00%
2018	6.50%
2019	6.00%
2020	5.50%
2021	5.25%
2022 & Beyond	5.00%



**SCHEDULE C - OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS  
(CONTINUED)**

**AGE RELATED MORBIDITY:** Per capita costs are adjusted to reflect expected cost changes related to age. The age related increase to the net incurred claims was assumed to be:

Participant Age	Annual Increase
Under 30	0.0%
30 – 34	1.0%
35 – 39	1.5%
40 – 44	2.0%
45 – 49	2.6%
50 – 54	3.3%
55 – 59	3.6%
60 – 64	4.2%
65 and Older	0.0%

**ANTICIPATED PLAN PARTICIPATION:** Representative values of the assumed annual rates of member participation and spouse coverage are as follows:

Anticipated Plan Participation	
Member Participation	100.00%
Spouse Coverage	10.00%

**SPOUSE AGE DIFFERENCE:** Wives are assumed to be four years younger than husbands.



**SCHEDULE C - OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS  
(CONTINUED)**

**ANNUAL EXPECTED MEDICAL/PRESCRIPTION DRUGS CLAIMS (AGE ADJUSTED TO AGE 65):** The initial per capita costs were based upon adjusted premium rates. The following chart details the annual expected claims for the year following the valuation date:

Annual Expected Claims	
<b>Age Adjusted Claims</b>	
Pre-65	\$ 12,078

**BENEFITS VALUED:** The benefits listed below were valued for the stated upon duration.

**Pre-Medicare Benefits Valued:**

- Medical Coverage
- Prescription Drug Coverage
- Life Insurance





**SCHEDULE D – SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

**Eligibility for Allowance** County paid health and life insurance coverage will be provided to employees qualifying for full retirement as a member of the North Carolina Local Governmental Employees' Retirement System and the North Carolina Law Enforcement Retirement System.

For those hired after July 1, 2011, County paid Health and Life Insurance coverage will be provided to employees who have been a Yadkin County employee for a minimum of five (5) years and qualifying for full retirement as a member of the North Carolina Local Governmental Employees' Retirement System and the North Carolina Law Enforcement Retirement System.

**Amount of Allowance** Health and life insurance coverage will be paid at the same level as for active employees and will be provided to retired employees until they become eligible for Medicare. The life insurance policy is \$10,000 at retirement and reduces to \$6,500 at age 65, at which time the County will no longer pay for life insurance.

**Other Post-Employment Benefits** Health care, prescription drug coverage and life insurance are provided by the County. Medicare eligible retirees may continue life insurance coverage until age 70 if they pay the full rate.

**Dependent Coverage** The retiree may continue dependent coverage (and pay the full premium for this coverage) if enrolled in dependent coverage at the time of retirement. Dependent coverage terminates upon the dependent attaining age 65.

**Representative Monthly Retiree Premium Amounts**

Effective July 1, 2016:

Tier	Health Premiums
Employee Only	\$719.16
Employee + One	\$1,269.00
Family	\$1,646.12