



# **CHAPPAQUA CENTRAL SCHOOL DISTRICT**

## **OTHER POSTEMPLOYMENT BENEFITS (OPEB) REPORTING IN ACCORDANCE WITH GASB 45 FISCAL YEAR JULY 1, 2012 TO JUNE 30, 2013**

**Prepared by: AQUARIUS CAPITAL SOLUTIONS GROUP LLC  
Date: May 5, 2013**

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May 5, 2013

Mr. John L. Chow  
Assistant Superintendent for Business  
Chappaqua Central School District  
66 Roaring Brook Road  
Chappaqua, NY 10514

**Re: Report - GASB 43 & 45 Valuation Report for Fiscal Year July 1, 2012 to June 30, 2013**

Dear Mr. Chow:

Enclosed is an analysis of estimated costs for post employment benefits valuation under Government Accounting Standards Board (GASB) No. 43 & 45 for Chappaqua Central School District (the "District"). The valuation was done for fiscal year July 1, 2012 to June 30, 2013. The attached report was completed in accordance with generally accepted actuarial principles and practices.

**Financial Results**

Included in the analysis is a Table of Contents. Sections I-III of the report, which is four pages, includes the financial forecast for GASB 45. As an example, the unfunded accrued liability (UAL), which is the accrued liability less assets, is approximately \$98.8 million as of July 1, 2012 and the projected annual other postemployment benefits (OPEB) cost is \$5.3 million.

The projected Net OPEB Obligation as of June 30, 2013 is \$11.6 million, which is based on the projected pay-as-you-go number for fiscal year July 1, 2012 to June 30, 2013 as reported by the district.

Pages 1-2 of the report illustrate the financial projections for the plan as of year-end June 30, 2013 to assist your auditors with accounting for the respective plan year. Although the auditors may only require pages 1-2, we recommend forwarding the report in its entirety.

Results for this valuation were valued based on census information provided by your organization in January 2013. This is based on a total of 984 employees, reflecting the sum of 614 active employees and 370 retired employees. The active population reflects approximately 40.9% of the unfunded accrued liability above, with 169 employees or 27.5% of these actives eligible for retirement. Details of census demographic information are illustrated further in the report.

**Covered Benefits and Claim Cost Assumptions**

The District provides post-employment medical benefits including prescription drug benefits as part of the medical plan on a fully insured basis through the Putnam Northern Westchester Health Benefits Consortium (the "Consortium"). A second plan is available through Empire Blue Cross/Blue Shield, which was a change from Emblem Health, effective July 1, 2013. Premium rate information was provided through June 30, 2014 for both plans and reflected in the valuation.

### Sensitivity Analysis

Section II of the report includes a sensitivity analysis based on varying the discount interest rate and the healthcare cost inflation rate (trend). The discount rate used was 5%, which is consistent with the discount rate used for the prior year valuation. We have not performed a review of the District's investments. If a different discount rate is preferred, then please contact us.

Increasing the discount rate by 1% (a discount rate of 6%) would lower the UAL by approximately 13.1%. Conversely, lowering the discount rate by 1% (a discount rate of 4%) would *increase* the UAL by approximately 16.7%. Results are illustrated as of the July 1, 2012 valuation date. See page 3 of the report for details of both scenarios.

Section II of the report also includes a sensitivity analysis based on varying the healthcare cost inflation rate (trend). A 1% trend factor increase would increase the UAL by approximately 19.5%. Our forecast applied the 1% increase beginning in July 1, 2014 and later, treating the 7/1/12 and 7/1/13 costs as fixed (known) costs since these rates have already been released.

For this valuation, we incorporated the impact of the Patient Protection and Affordable Care Act (PPACA) enacted in March 2010 (Healthcare Reform) reflecting a provision for an excise ("cadillac") tax in the valuation and the sensitivity analysis. Details of PPACA are described later in the report. As a result of the excise tax, the impact of a 1% change in trend factor will be greater on a percentage basis than the impact in past years.

Results are illustrated as of the July 1, 2012 valuation date. Details of these scenarios are illustrated on page 3 of the attached report. Please contact us if you desire additional scenarios.

### Additional Seventy Two (72) Scenarios

Similar to last year, we incorporated additional scenarios for the valuation as requested by the District, which are illustrated on pages 13-14. All scenarios are identical to the prior year. This includes forty two (42) combinations of discount rate and healthcare cost inflation rate, which are illustrated on page 13 of the report.

Also included are thirty (30) combinations of future retiree contribution rates (illustrative percentages) and the ultimate healthcare inflation rates. It should be noted that the retiree contribution rates are scenarios for illustrative purposes and have not been implemented or negotiated. Retiree contribution rate scenarios assume that current retiree contribution rates will not change and changes to retiree contribution rates would only apply to current actives that would retire in the future.

Similar to past years, the thirty (30) scenarios reflect the use of the same contribution rate for all future retirees, regardless of union or employment class. These scenarios are illustrated on page 14 of the report.

The ultimate healthcare inflation rates for all seventy two (72) scenarios on pages 13-14 are applied for years 2018 and later. All other assumptions are based on the valuation assumptions in the report.

#### Overview of Actuarial Gain/Loss

On page 4 (Section III) of the valuation report, we illustrate an actuarial loss of \$0.4 million (or 0.40% increase in the June 30, 2012 UAL), which is part of the calculation of OPEB costs. This reflects the increase in the UAL as of July 1, 2012 as compared to the UAL as reported in the prior year valuation report roll forward to yearend June 30, 2012.

The primary driver of the cost increase is due to the incorporation of an assumption for mortality improvement assumption for the July 1, 2012 valuation plus reflecting the impact of PPACA. This was offset by the impact of a reduction in employee lives from the prior valuation combined with the favorable premium rate increases realized from the Consortium medical plan (premium rates increases realized were less than projected). It should be noted that the seventy two (72) scenarios previously discussed reflect the impact of the above.

Details of the actuarial loss are illustrated on page 4 of the report.

#### Demographic Information

Section IV of the report illustrates additional information pertaining to underlying census information including age and sex analysis for active and retired employees along with summaries of the active population by age and years of service. Census analysis is illustrated separately for actives and retirees. This is highlighted on pages 5-7 of the report.

Some highlights of census demographic information as of the July 1, 2012 valuation date are as follows:

- For retirees, the overall average age is 73.4 years, which reflects an average age of 61.7 for pre-65 retirees and 76.4 for post-65 retirees.
- For actives, the average age is 47.4 years and average years of service of 11.2.
- Of the active population, 27.5% of the population (169 employees) is eligible to retire.
- 74.1% actives and 65.7% retirees valued were female.
- Active population includes employees that opted-out of coverage, similar to the prior valuation.

The report also includes a comparison of demographics from the prior valuation report, i.e., the July 1, 2011 valuation. See page 7 for details.

#### Assumptions & Definitions

As part of this report, we included supporting documentation such as a summary of assumptions and key definitions (glossary), which are provided in Sections V and VI, respectively. This includes assumptions for health care costs (premium rates through June 30, 2014), retiree contribution rates, healthcare inflation, decrement tables (e.g., probability of death, turnover, disability and retirement) and other provisions. The decrement tables used for this valuation are based on the New York State Employees' Retirement System (ERS) and the New York State Teachers' Retirement System (TRS).

The mortality table used for the prior valuation was the RP 2000 Healthy Male and Female Tables based on the Combined Healthy Table for both pre and post-retirement without mortality improvement. For the currently valuation, we have incorporated a projection for mortality improvements using Projection Scale AA projecting from the date of the table to the date of the valuation. This is consistent with practices done in the industry for GASB45 valuations with 2012 effective dates in the actuarial profession.

The management team at Aquarius Capital recently conducted market research as Professors at Columbia University, Masters in Actuarial Science program of the most common mortality table and mortality improvements table used in the market for GASB45 valuations. Based on our findings, the tables used for the District's valuation are consistent with the most common tables used in the market. Page 4 of this valuation report illustrates the impact of incorporating a mortality improvement assumption (e.g., Scale AA table).

For additional details on assumptions and definitions, see pages 8-12.

#### Healthcare Reform

The Patient Protection and Affordable Care Act (PPACA) enacted in March 2010 (Healthcare Reform) includes a provision for an excise ("cadillac") tax of 40% on high cost health plans that will be levied on insurers and third party administrators (TPAs) beginning 2018 and will not be tax deductible. It is to be calculated separately for single and family coverage and will be equal to 40% of the excess of per employee plan costs, net of patient cost sharing, over the 2018 stated cost limits of:

- \$10,200 single / \$27,500 family
- \$11,850 single / \$30,950 family for retirees age 55-64

The 2018 limits above may be increased if higher than expected trends are realized from 2010 through 2018 in the benchmark plan. The benchmark plan is the Federal Employees Health Benefits Plan (FEHBP) Blue Cross/Blue Shield standard option. The limits will be adjusted to the extent per employee costs in the benchmark plan increase by more than 55% from 2010 to 2018 (for example, if the benchmark plan increase is 60% between 2010 and 2018, the cost limits will increase by the excess over 55% or 5%.) The final 2018 limits will be increased by CPI + 1% for 2019 and by CPI thereafter. For this valuation, it is assumed that CPI will be 3% for 2019 and beyond.

For valuation purposes, it is assumed the trend adjustments to the cost limits in the benchmark plan (FEHBP) are equal to *actual* premium increases in the FEHBP plan for 2010 through 2013 and *projected* increases in costs from 2014 through 2018 as listed in the "Health Care Cost Trend Assumption" in Section V, page 9 of the report.

For each year from 2018 and beyond, the excess of projected future premiums over future adjusted cost limits are multiplied by 40% and then adjusted (grossed up) for the assumed marginal tax rate of 35%. It is assumed that any excise tax payable by an insurer/TPA will be passed on to the District through increased premiums (whether billed separately or not). This methodology is also described in Section V, page 9 of the report.

Information Reviewed

We based our analysis on reviewing electronic census information (record-by-record review), retiree plan information, cost information (premium rates through June 30, 2014), collective bargaining contracts by bargaining unit, audited financial statements as of June 30, 2012, and other summary information of retiree benefits and eligibility. The Net OPEB Obligation as of June 30, 2013 reflects the projected pay-as-you-go results for fiscal year July 1, 2012 to June 30, 2013.

We also gathered additional information from the company through emails and other correspondence in order to confirm retiree benefit information, census confirmations, and assumptions.

Census information was provided in January 2013 for actives and retirees with details illustrated in Section IV of the report.

Data Reliance & Limitations

In our review, we have relied on the information provided by the District. We have not audited or verified the accuracy of the information provided. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

This report and all attachments contained herein are for the internal use of the District. It may not be provided to other parties without prior consent. If consent is granted, the report must be provided in its entirety. We understand the District intends to distribute this letter and attachments to its auditor and fee accountant in connection with the reporting of results of this report for the sole use of preparation of audited financial statements. Aquarius consents to this distribution as long as the report is provided in its entirety and the auditor is advised to have an actuary review the work.

This report is provided to the District for the purpose of calculation results under GASB 45. Information in this report may not be appropriate to use for other purposes. Aquarius does not intend to benefit from the overall results of the report and we assume no duty, liability or obligation to parties that use this work for other reasons other than its intention, i.e., reporting of GASB 45 for financial statements.

Actuarial Opinion

I, Michael L. Frank, ASA, FCA, MAAA, am President and Actuary of Aquarius Capital Solutions Group LLC. I am an Associate of the Society of Actuaries, Fellow of Conference of Consulting Actuaries, and Member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The attached report was completed in accordance with generally accepted actuarial principles and practices.

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**Mr. John Chow**  
**May 5, 2013**  
**Page 6**

We hope that this report is beneficial. When convenient, please contact me so that we can schedule a call or meeting to review report in more detail. In addition, please extend thanks to you and your team for assistance in the gathering of information to help us complete this analysis. Their assistance was much appreciated. We look forward to working with you in the future.

Sincerely,



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Michael L. Frank, A.S.A., M.A.A.A., F.C.A.  
President & Actuary

Cc: Donald Rusconi – Aquarius Capital

Enclosure



Client: Chappaqua Central School District  
Valuation Estimates under GASB No. 43 & 45 valued as of July 1, 2012

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**CHAPPAQUA CENTRAL SCHOOL DISTRICT**

**GASB NO. 43 & 45**

**VALUATION AS OF JULY 1, 2012**

Prepared by: Aquarius Capital Solutions Group LLC  
May 5, 2013



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**SECTION I: FINANCIAL RESULTS AS OF JULY 1, 2012 VALUATION FOR YEAR END DISCLOSURE**

(First Year of Implementation is Fiscal Year July 1, 2008 to June 30, 2009)

1 Discount Rate		5.00%
<u>Section 1: Development of Service Cost</u>		
2 Service Cost at Beginning of Year as of July 1, 2012	\$	2,291,318
3 Interest on Service Cost (2) x (1)	\$	114,566
4 Service Cost with Interest to Year End (2) + (3)	\$	2,405,884
<u>Section 2: Projected Unfunded Accrued Liability to Year End</u>		
5 Accrued Liability (AL) as of July 1, 2012	\$	98,835,337
6 Assets	\$	-
7 Unfunded Accrued Liability (UAL) as of July 1, 2012 (5) - (6)	\$	98,835,337
8 Service Cost with Interest to Year End (4)	\$	2,405,884
9 Pay-As-You-Go Benefits - Projected for fiscal year July 1, 2012 to June 30, 2013	\$	4,368,028
10 Interest on Unfunded Accrued Liability (7) x (1) - (9) x (1) / 2	\$	4,832,566
11 Projected Unfunded Accrued Liability (UAL) as of June 30, 2013 (7) + (8) - (9) + (10)	\$	101,705,759
<u>Section 3: Amortization of Initial Unfunded Accrued Liability</u>		
12 Initial Unfunded Accrued Liability at Implementation - July 1, 2008 Valuation (Same as Prior Valuation)	\$	92,868,117
13 30 Year Amortization Factor (Same amortization as prior valuation)		30.0000
14 Amortization of Initial Unfunded Accrued Liability as of July 1, 2008 (12) / (13), (Open Amortization Basis)	\$	3,095,604
15 Interest on Amortization of Unfunded Accrued Liability (1) x (14)	\$	154,780
16 Total Amortization of Unfunded Accrued Liability w/ Interest (14) + (15)	\$	3,250,384
17 # of Years of Amortization of Initial UAL, including Current Valuation		5



**SECTION I: FINANCIAL RESULTS AS OF JULY 1, 2012 VALUATION FOR YEAR END DISCLOSURE (CONTINUED)**

Section 4: Adjustments to Annual Required Contribution (ARC)

18 Unfunded Accrued Liability (UAL) as of July 1, 2012 (7)	\$	98,835,337
19 Projected Unfunded Accrued Liability as of June 30, 2012 (Prior Roll Forward Calculation for Yearend June 30, 2012)	\$	98,442,920
20 Experience (Gain)/Loss on Unfunded Accrued Liability as of July 1, 2012 (18) - (19)	\$	392,417
21 Net OPEB Obligation as of June 30, 2012 (Audited Financial Statements as of year-end 6/30/2012, page 40)	\$	10,705,305
22 Total (Gain)/Loss since Prior Valuation		
a. Calculation of Experience (Gain)/Loss on UAL as of July 1, 2012: (20)	\$	392,417
b. Amortization of (Gain)/Loss (Amortization factor over 15 years)		15,0000
c. Amortization for (Gain)/Loss for Current Period: (22a) / (22b)	\$	26,161
23 Amortization Period for (Gain)/Loss based on Prior Valuation (Developed from Prior Valuation Report)	\$	(943,108)
24 Adjustment to ARC - Amortization of (Gain)/Loss (22c) + (23)	\$	(916,947)

Section 5: Summary of Annual OPEB Cost & Net OPEB Obligation as of June 30, 2013

25 Unfunded Accrued Liability (UAL) as of July 1, 2012 (7)	\$	98,835,337
26 Total Service Cost with Interest - July 1, 2012 to June 30, 2013 (4)	\$	2,405,884
27 Total Amortization of Initial Unfunded Accrued Liability w/ Interest (16)	\$	3,250,384
28 Annual Required Contribution (ARC) (26) + (27)	\$	5,656,268
29 Interest on Net OPEB Obligation as of July 1, 2012 (1) x (21)	\$	535,265
30 Adjustment to ARC (24)	\$	(916,947)
31 Annual OPEB Cost (28) + (29) + (30)	\$	5,274,586
32 Contributions Made (Pay-As-You-Go Costs) - Projected (9)	\$	4,368,028
33 Net OPEB Expense Cost at June 30, 2013 (31) - (32)	\$	906,558
34 Net OPEB Obligation as of June 30, 2012 (21)	\$	10,705,305
35 Net OPEB Obligation as of June 30, 2013 (33) + (34)	\$	11,611,863



**SECTION II - SUMMARY OF FINANCIAL INFORMATION INCLUDING SENSITIVITY ANALYSIS**

Summary of Financial Results with Sensitivity Analysis  
(July 1, 2012 Valuation Date)

Results illustrated as of July 1, 2012

	Val. Discount Rate of <u>5.00%</u>	Sensitivity Analysis Val. Discount Rate of <u>6.00%</u>	Sensitivity Analysis Val. Discount Rate of <u>4.00%</u>	Healthcare Cost Trend Rate Assumptions <u>Increased 1%</u>
	<u>Total</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>
1 Total Employee Lives				
a. Actives	614	614	614	614
b. Retirees	370	370	370	370
c. Subtotal	984	984	984	984
2 Present Value of Future Benefits (PVFB) as of July 1, 2012				
a. Actives	\$ 58,456,247	\$ 45,405,010	\$ 76,605,198	\$ 81,981,941
b. Retirees	\$ 58,434,765	\$ 53,566,388	\$ 64,143,407	\$ 64,192,533
c. Subtotal	\$ 116,891,012	\$ 98,971,398	\$ 140,748,606	\$ 146,174,474
d. % Actives as ratio of Subtotal	50.0%	45.9%	54.4%	56.1%
e. Sensitivity Analysis of Subtotal: Ratio to Valuation Results for PVFB		84.7%	120.4%	125.1%
3 Accrued Liability (AL) as of July 1, 2012				
a. Actives	\$ 40,400,573	\$ 32,362,787	\$ 51,168,861	\$ 53,920,886
b. Retirees	\$ 58,434,765	\$ 53,566,388	\$ 64,143,407	\$ 64,192,533
c. Subtotal	\$ 98,835,337	\$ 85,929,175	\$ 115,312,268	\$ 118,113,419
d. % Actives as ratio of Subtotal	40.9%	37.7%	44.4%	45.7%
e. Sensitivity Analysis of Subtotal: Ratio to Valuation Results for AL		86.9%	116.7%	119.5%
4 Assets	\$ -	\$ -	\$ -	\$ -
5 Unfunded Accrued Liability (UAL) as of July 1, 2012 (3c) - (4)	\$ 98,835,337	\$ 85,929,175	\$ 115,312,268	\$ 118,113,419
6 Service Cost with Interest				
a. Service Cost at Year End:	\$ 2,405,884	\$ 1,847,144	\$ 3,182,931	\$ 3,471,700
b. Ratio to Valuation Results for Service Cost		76.8%	132.3%	144.3%
7 Pay-As-You-Go Benefits - Illustrated as Projected	\$ 4,368,028	\$ 4,368,028	\$ 4,368,028	\$ 4,368,028
8 Ratio of AL to Pay-As-You-Go: (3c) / (7)	22.63	19.67	26.40	27.04
9 Ratio of Service Cost to Pay-As-You-Go: (6a) / (7)	0.55	0.42	0.73	0.79
10 Average Annual Pay-As-You-Go Benefit per Retiree (7) / (1b)	\$ 11,805	\$ 11,805	\$ 11,805	\$ 11,805
11 Three Year Projection of Pay-As-You-Go Costs				
a. Year 1: July 1, 2012 to June 30, 2013	\$ 4,368,028	\$ 4,368,028	\$ 4,368,028	\$ 4,368,028
b. Year 2: July 1, 2013 to June 30, 2014	\$ 4,372,424	\$ 4,372,424	\$ 4,372,424	\$ 4,372,424
c. Year 3: July 1, 2014 to June 30, 2015	\$ 4,562,093	\$ 4,562,093	\$ 4,562,093	\$ 4,604,335

Notes:

- All costs are net of retiree contributions. See pages 1-2 for financial statement information.
- Healthcare trend inflation assumption applies to Year 3, since premium rates (costs) are known for Year 2.



**SECTION III - SUMMARY OF FINANCIAL INFORMATION INCLUDING GAIN/LOSS ANALYSIS**

Summary of Experienced (Gain)/Loss as of July 1, 2012

1 Calculation of Experience (Gain)/Loss on Unfunded Accrued Liability as of July 1, 2012 (See Page 2, Line 20 of Report)	\$	392,417
2 Prior Valuation Unfunded Accrued Liability as of June 30, 2012 (See Page 2, Line 19 of Report)	\$	98,442,920
3 Ratio of (Gain)/Loss to Prior Valuation Unfunded Accrued Liability (1) / (2)		0.40%
4 Distribution of Experience (Gain)/Loss as of July 1, 2012		
a. Impact due to changes in headcounts from prior valuation	\$	(1,208,607)
b. Impact due to incorporation of mortality improvement assumption for 2012 (incorporation of scale AA projected to valuation date)	\$	4,280,979
c. Impact due to reflecting the excise ("cadillac") tax under PPACA for the current valuation	\$	520,634
d. Impact due to changes in demographics, cost information and other valuation assumptions*	\$	<u>(3,200,589)</u>
e. Subtotal: (a) + (b) + (c) + (d)	\$	392,417

\*Note: Primary driver to actuarial gain in Line 4d is due to the current premium rate increase being less than forecasted in the prior valuation for the current year.



**SECTION IV - SUMMARY OF CENSUS INFORMATION**

Summary of Enrollment by Age Band for Retirees and Spouses, calculated as of July 1, 2012

<u>Age Band</u>	<u>Female</u>	<u>Male</u>	<u>Subtotal</u>	<u>% Subtotal</u>
Under 50	-	-	-	0.0%
50 to 54	-	-	-	0.0%
55 to 59	8	5	13	3.5%
60 to 64	42	21	63	17.0%
65 to 69	50	23	73	19.7%
70 to 74	44	22	66	17.8%
75 to 79	28	15	43	11.6%
80 to 84	37	19	56	15.1%
85 to 89	19	17	36	9.7%
90 to 94	12	4	16	4.3%
95 +	<u>3</u>	<u>1</u>	<u>4</u>	<u>1.1%</u>
Subtotal	243	127	370	100.0%
% Subtotal	65.7%	34.3%	100.0%	

	<u>Female</u>	<u>Male</u>	<u>Subtotal</u>	<u>% Subtotal</u>
Pre 65 Retirees	50	26	76	20.5%
Post 65 Retirees	<u>193</u>	<u>101</u>	<u>294</u>	<u>79.5%</u>
Subtotal	243	127	370	100.0%

Average Age

Pre 65 Retirees	61.7
Post 65 Retirees	76.4
Subtotal	73.4



**SECTION IV - SUMMARY OF CENSUS INFORMATION (CONTINUED)**

Summary of Census for Actives by Age Band and Years of Service, calculated as of July 1, 2012

<u>Age Band</u>	<u>Years of Service</u>								<u>Subtotal</u>	<u>% Subtotal</u>
	<u>0 to 4</u>	<u>5 to 9</u>	<u>10 to 14</u>	<u>15 to 19</u>	<u>20 to 24</u>	<u>25 to 29</u>	<u>30 to 34</u>	<u>35 +</u>		
Under 25	5	-	-	-	-	-	-	-	5	0.8%
25 to 29	15	3	1	-	-	-	-	-	19	3.1%
30 to 34	19	40	3	-	-	-	-	-	62	10.1%
35 to 39	12	33	28	6	-	-	-	-	79	12.9%
40 to 44	13	20	27	10	1	-	-	-	71	11.6%
45 to 49	15	28	27	15	8	2	-	-	95	15.5%
50 to 54	12	41	21	8	14	7	1	-	104	16.9%
55 to 59	5	22	24	23	14	5	8	1	102	16.6%
60 to 64	5	15	15	8	4	4	7	1	59	9.6%
Age 65 +	-	1	2	5	2	4	2	2	18	2.9%
Subtotal	101	203	148	75	43	22	18	4	614	100.0%
% Subtotal	16.4%	33.1%	24.1%	12.2%	7.0%	3.6%	2.9%	0.7%	100.0%	

Actives

Average Age: 47.4  
Average Years of Service: 11.2

% by Gender

Female	455	74.1%
Male	<u>159</u>	<u>25.9%</u>
Total	614	100.0%

Actives by Service Category

Actives Not Yet Eligible for Benefits	445	72.5%
Actives Eligible for Benefits	<u>169</u>	<u>27.5%</u>
Total	614	100.0%

Note: Active counts above include employees currently opting out of coverage (e.g., receiving buy-out).  
For valuation purposes, it is assumed that 100% of these individuals elect since coverage in retirement.



**SECTION IV - SUMMARY OF CENSUS INFORMATION (CONTINUED)**

Comparison of Census Information with Prior Valuation Report (July 1, 2011)

	<u>July 1, 2012</u>	<u>July 1, 2011</u>	<u>Difference</u>	<u>% Difference</u>
<u>Summary of Counts</u>				
Actives	614	623	(9)	-1.4%
Retirees	<u>370</u>	<u>374</u>	<u>(4)</u>	<u>-1.1%</u>
Total	984	997	(13)	-1.3%
Retiree Counts - % Pre-65	20.5%	31.6%	-11.1%	-35.1%
<u>Average Age</u>				
Actives				
o Current Age	47.4	46.6	0.8	1.7%
o Hire Age	36.2	36.0	0.2	0.6%
Retirees				
o Pre-65	61.7	63.0	(1.3)	-2.1%
o Post-65	76.4	78.0	(1.6)	-2.1%
o Total	73.4	73.0	0.4	0.5%
<u>Average Years of Service</u>				
Actives - Average Years of Service	11.2	10.6	0.6	5.7%
Actives Eligible for Benefits	169	156	13	8.3%
% Actives Eligible for Benefits	27.5%	25.0%	2.5%	10.0%
<u>Gender</u>				
% Female - Actives	74.1%	73.8%	0.3%	0.4%
% Female - Retirees	65.7%	65.0%	0.7%	1.1%

Note: Active counts above include employees currently opting out of coverage (e.g., receiving buy-out).  
For valuation purposes, it is assumed that 100% of these individuals elect since coverage in retirement.



**SECTION V - SUMMARY OF ASSUMPTIONS**

Company	Chappaqua Central School District
Valuation Date	July 1, 2012
Initial Implementation Year	July 1, 2008 to June 30, 2009
Discount Rate	5.0%
Purpose of Work	This report is provided to the Company for the purpose of calculation results under GASB 45. Information in this report may not be appropriate to use for other purposes. Aquarius does not intend to benefit from the overall results of the report and we assume no duty, liability or obligation to parties that use this work for other reasons other than its intention, i.e., reporting of GASB 45 for financial statements.
Covered Benefits	Coverage for medical only including prescription drug coverage as part of medical plan. Certain retirees are eligible for life insurance and receive on a non-contributory basis.
Information for Valuation	All information was provided by the Company for active and retired population.
Retirement Benefits	Coverage for pre-65 and post-65 retirement coverage valued for active and retired population.
Insurance Coverage Funding Basis	Medical, including prescription drugs, is fully insured through Putnam Northern Westchester Health Benefits Consortium ("Consortium") and Empire Blue Cross/Blue Shield. The Empire plan is new plan effective July 1, 2013, replacing the medical plan with Emblem Health.
Assets	Not valued since benefit is unfunded. Assets are zero.
Actuarial Cost Method	Projected Unit Credit.
Health Care Cost Trend Assumption	The following assumptions are used for annual healthcare cost inflation (trend):

	Year	Pre-65	Post 65
Initial Trend	July 1, 2014	8.0%	8.0%
Ultimate Trend	July 1, 2018 & Later	4.0%	4.0%
Grading Per Year		1.0%	1.0%

Starting Claim Cost  
Base plan costs for medical are based on premium rates for plan years July 1, 2012 to June 30, 2013 and July 1, 2013 to June 30, 2014. Both plan years were reflected in the valuation since known premium cost. Medical insured monthly premiums for pre-65 and post-65 retirees for the Consortium along with the Medicare Part B premium are illustrated below by coverage tier.

Consortium Plan	Plan Year 7/11 to 6/12	Plan Year 7/12 to 6/13	Plan Year 7/13 to 6/14
Single - Pre 65	\$ 603.00	\$ 621.00	\$ 640.00
Family - Pre 65	1,507.00	1,552.00	1,600.00
Single - Post 65	\$ 543.00	\$ 559.00	\$ 576.00
Family - Post 65	1,206.00	1,242.00	1,280.00
Standard Medicare Part B Per Member		1/12 to 12/12 \$ 99.90	1/13 to 12/13 \$ 104.90

The above costs are based on 100% before retiree contributions. These costs are valued to assume administrative expenses since fully insured. The Empire Blue Cross/Blue Shield is a fully insured medical plan while Consortium plan is assumed fully insured since purchased as part of a consortium medical plan with pooled rates among the combined participants, i.e., all participating employers. All plans have plan year July 1 to June 30. The monthly cost amounts (premium rates) are trended forward based on the percentages which are listed under "Health Care Cost Trend Assumptions" above.

Projected Benefit Costs  
The medical plans are community rated, therefore retiree claim costs are based on actual premium rates without adjustment for aging. This is consistent with Actuarial Standards of Practice No. 6.



**SECTION V - SUMMARY OF ASSUMPTIONS (CONTINUED)**

Medicare Part B Reimbursements	Valuation reflects the reimbursement of Medicare Part B premium to retirees, spouses and surviving spouses over age 65 that are eligible for the benefit. Employee will pay Medicare Part B premium and be reimbursed by Company.
Medicare Part D	Company does not reimburse for Medicare Part D premium.
Healthcare Reform Impact	<p>The Patient Protection and Affordable Care Act (PPACA) enacted in March 2010 (Healthcare Reform) includes a 40% excise tax ("cadillac tax") on high cost plans that will be levied on insurers and third party administrators (TPA) beginning in 2018 and will not be tax deductible. It will be calculated separately for single and family coverage and will be equal to 40% of the excess of per employee plan costs, net of patient cost sharing, over the 2018 stated cost limits of:</p> <ul style="list-style-type: none"><li>o - \$10,200 single / \$27,500 family</li><li>o - \$11,850 single / \$30,950 family for retirees age 55-64</li></ul> <p>The 2018 limits above may be increased if higher than expected trends are realized from 2010 through 2018 in the benchmark plan. The benchmark plan is the Federal Employees Health Benefits Plan (FEHBP) Blue Cross/Blue Shield standard option. The limits will be adjusted to the extent per employee costs in the benchmark plan increase by more than 55% from 2010 to 2018 (for example, if the benchmark plan increase is 60% between 2010 and 2018, the cost limits will increase by the excess over 55% or 5%.) The final 2018 limits will be increased by CPI + 1% for 2019 and by CPI thereafter. For this valuation, it is assumed that CPI will be 3% in 2019 and beyond.</p> <p>For valuation purposes, it is assumed the trend adjustments to the cost limits in the benchmark plan (FEHBP) are equal to actual premium increases in the FEHBP plan for 2010 through 2013 and projected increases in costs from 2014 through 2018 as listed in the "Health Care Cost Trend Assumption" above.</p> <p>For each year from 2018 and beyond, the excess of projected future premiums over future adjusted cost limits are multiplied by 40% and then adjusted (grossed up) for the assumed marginal tax rate of 35%. It is assumed that any excise tax payable by an insurer/TPA will be passed on to the Company through increased premiums (whether billed separately or not). This is a new assumption incorporated into the valuation.</p>
Plan Design Changes	Valuation assumes no changes in future plan designs (e.g., deductibles, coinsurance, etc.) from current benefits offered for the current plan year. It is assumed that the current level of benefits will remain, with no modifications to avoid the potential excise "cadillac" tax imposed by the Patient Protection and Affordable Care Act (PPACA) described in detail above.
Future Contributions for Medical	Retiree contributions as a percentage of premium remain constant over the valuation. No benefit cost cap changes other than increases due to inflation and the PPACA excise tax calculation as projected in the valuation.
% Future Retirees Opting Out	None, assume 100% participation for those covered as actives. All eligible active and retiree employee records provided by client were valued.
Census Information	Participant data provided by the Company dated January 2013. We relied on information provided as being accurate and we have not conducted any data audits. One census file was provided for both actives and retirees. All data supplied to us by Company.
New Hires	This valuation is based on a closed group and does not reflect the impact of future new entrants (e.g., new hires after date of data collection, i.e., January 2013) into the plan.
Payroll Information	Payroll information was not reflected or valued in this analysis, as benefit and retiree contributions are not based on payroll so this information was not necessary for this valuation.
Retirement System (ERS & TRS)	Valuation is based on the most recent New York State Employees' Retirement System (ERS), and the New York State Teachers' Retirement System (TRS). ERS tables were based on version released in 2010 while TRS tables were based on the version released in 2011.
Retirement Eligibility Assumptions	Eligibility for early retirement is based on meeting a criteria of minimum age and/or years of service (YOS) requirements. All employees are assumed to be eligible upon reaching age fifty five (55) and completing five (5) years of service, which is based on the current contracts as provided by the client.



**SECTION V - SUMMARY OF ASSUMPTIONS (CONTINUED)**

Retiree Contribution Rates

For employees retiring prior to June 30, 2013, retiree contribution percentages are as follows:

<u>Contract Year</u>	<u>Teachers (CCT)</u>	<u>Clerical (COSA)</u>	<u>Custodians (CSEA)</u>	<u>Administration</u>
2007 to 2008	5.00%	5.00%	6.00%	8.00%
7/2008 to 12/2008	6.50%	6.50%	7.00%	10.00%
1/2009 to 6/2009	6.50%	6.50%	8.00%	10.00%
2009 to 2010	7.75%	7.75%	8.00%	10.00%
2010 to 2011	9.00%	9.00%	8.00%	11.00%
2011 to 2012	10.00%	9.00%	10.50%	13.00%
2012 to 2013	11.00%	9.00%	10.50%	15.00%
2013 to 2014	12.25%	9.00%	10.50%	15.00%
2014 to 2015	13.50%	9.00%	10.50%	15.00%

Please note that for Custodial, contribution rates for the period May 1, 2011 to June 30, 2011 are 9%. Retirees contribution rates vary based on class of employees. Contribution rates are based on a percentage of premium. For the Consortium plan, contribution rate percentages are as follows for future retirees (single or family) after June 30, 2013.

<u>Division</u>	<u>Future Retiree Contribution %</u>
Teachers (CCT)	13.5%
Clerical (COSA)	9.0%
Administration	15.0%
Custodians (CSEA)	10.5%

Retiree contribution rates for alternative plan are established at the Consortium premium plan rates plus the incremental cost amount in order for the company to have a net cost structure similar to the current Consortium plan. Since alternative plan premium rates are assumed than Aetna, then the net cost to the company is the same under both the Aetna and the alternative plans.

Mortality

RP 2000 Healthy Male and Female Tables are based on the Combined Healthy Table for both pre and post-retirement projected with mortality improvements using Projection Scale AA for 12.5 years, i.e., from date of table to valuation date. Mortality improvement is an additional assumption incorporated into this valuation report.

Turnover Assumptions

This reflects rate of separation from the active plan and excludes retirement and disability. Turnover table varies by age, gender and years of service with rates of turnover based on the NYS Employees' Retirement System (ERS), and the NYS Teachers' Retirement System (TRS).

Disability Assumptions

This reflects disability assumptions from the active plan and is based on age and gender. This is the assumption used for the NYS Employees' Retirement System (ERS), the NYS Teachers' Retirement System (TRS).

Retirement Assumptions

This reflects rate of retirement from the active plan and is based on age and gender. This is the assumption used for the NYS Employees' Retirement System (ERS) and the NYS Teacher's Retirement System (TRS).

Valuation of Spouses & Marital Status

Spouses are valued for benefits similar to retired employees. Employees with spouses are assumed to be married to those spouses at and throughout retirement. Employees that are without spouses (or not covering a spouse) are assumed to be single at and throughout retirement. Employees electing family coverage are assumed to continue family coverage 85% of the time in retirement.



**SECTION V - SUMMARY OF ASSUMPTIONS (CONTINUED)**

Spouse Age Assumptions	For missing date of births, we are assuming that female spouses are three years younger than male employees and male spouses are three years old than female employees. This is applied for spouses without dates of birth. This was assumed since spouse dates of birth were not available for all actives and retirees with family coverage.
Surviving Spouses & Surviving Dependents	Surviving dependents do not receive subsidized health insurance or any reimbursements for Medicare Part B coverage. Any health insurance coverage provided by company is individual pay all coverage resulting in no additional liability to the company.
Buy Backs (Opt Outs/Waivers)	A portion of individuals that elected buy back option (i.e., opt outs) as actives are assumed to enroll in coverage at retirement. Individuals must be covered as actives prior to retirement in order to be eligible for benefits at retirement. We are assuming 1/4 of individuals will re-enroll at open enrollment in the year prior to retirement in order to obtain retiree benefits. Individuals are assumed to be single since no spouse information was available.
Vesteds & Leave of Absence	There were no individuals listed as vested or on leave of absence.
Cobra Participants	COBRA participants were excluded from the valuation.
Employees on Leave	Eight (8) employees are currently on leave. All employees were valued assuming 50% of these employees would return to work.
Missing Census Information	
o Dates of Birth	No employees were missing date of birth, so no special adjustments were needed. Three (3) active employees were missing date of birth, so assumed hire age of thirty six (36) for valuation based on average age of hire from prior valuation.
o Dates of Hire	Three (3) active employees were missing date of hire, so assumed to have six (6) years of service, which was the service average for July 1, 2011 valuation. Hire dates were not on prior valuation data.
o Gender	No employees were missing gender, so no special adjustments were needed.
o Coverage Tier	No employees were missing coverage tier, so no special adjustments were needed.
Special Adjustments	No other special adjustments were provided since client data was complete for purposes of completing the valuation. All active and retired employees provided were valued.
Medicare Tax Subsidy	The Medicare tax subsidy is not reflected in valuation. There is no offset in premium rates charged to employer and post-65 costs are illustrated gross of subsidy.
Excluded Population	Population reflects all benefit eligible employees provided. Any new hires after date of data collection are not reflected in the valuation.
Amortization of Initial UAL	Initial unfunded accrued liability (UAL) was amortized over thirty (30) years on a level dollar basis. Initial UAL valued on an closed basis.
Rounding of Results	Results are illustrated to the nearest dollar. In using unrounded results (exact dollars), no implication is made as to the degree of precision in those results. Clients and their auditors should apply their own judgment as to the desirability of rounding when transferring results from this valuation report to the client's financial statements.
Initial Year of Recognition of GASB 43 & 45	We have not reviewed the audited financials of client so are not providing an opinion on when client should recognize and comply with GASB 43 & 45. We rely on the opinion of the client and its auditor for this determination.
Employee Contracts & Collective Bargaining Agreements	Employee contracts and collective bargaining agreements specific to retiree benefits were not reviewed. Results based on information as provided by City.
Other Comments	Actuarial methods, considerations, and analyses used in forming this certification conform to the appropriate Standards of Practice and guidelines of the Actuarial Standards Board (ASB).



**SECTION VI - DEFINITIONS & GLOSSARY**

Actuarial Present Value of Future Benefits (PVFB)	Present value of all benefits expected to be paid by the employer, net of expected retiree contributions, based on actuarial assumptions used in the valuation. Assumptions are illustrated in Section VI.
Accrued Liability (AL)	This is the past service liability or present value of all benefits earned to date. Since retiree medical benefits are not accrued based on a specific formula like a pension plan, the accounting standard (GASB 45) requires the benefits to be earned ratably from date of hire to date of full eligibility for benefits. For retirees and actives that are immediately eligible to retire and receive full benefits, the AL equals the PVFB. For actives not yet eligible to retire, it equals a pro-rata portion of the PVFB based on past services to total service for that employee.
Unfunded Accrued Liability (UAL)	This is the excess of the AL over assets.
Annual Required Contribution (ARC)	The employer's periodic required contribution to a defined benefit OPEB plan. The portion, as determined by a particular Actuarial Method, of the Actuarial Present Value of the benefits and expenses, which is provided for by future Normal Costs.
Normal Cost	The proportion of the PVFB of a plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method used in the valuation. This is the cost of OPEB attributed to the current year of service.
Amortization Payment	The portion of the pension plan contribution (ARC) which is designated to pay interest on and to amortize the Actuarial Unfunded Accrued Liability (UAL)
Adjustment to ARC	For this valuation, the adjustment to the ARC reflects the gain/loss from the prior valuation. Cumulative gain/losses are amortized over thirty (30) years on a level dollar basis.
Pay-As-You-Go	This is a method of financing a postretirement benefit plan under which the contributions to the plan are generally made at about the same time and amount as benefits and expenses become due.
Closed Group Valuation	This means that it does not consider the Actuarial PVFB associated with future entrants.
Decrement Rates	This is mortality, turnover, disability and retirement rate assumptions. This is used to determine likelihood of employee qualifying for OPEB and when benefits will commence. Mortality is also used to determine probability of individuals to live and continue to receive benefits.
Discount Rate	Assumption used for converting present value of future benefits less future contributions into today's dollar amounts.
Service Cost	Accounting terminology, which is the same as the Normal Cost.
Projected Unit Credit	This is an actuarial cost method whereby the costs of benefits earned is funded each year and the value of the accrued liability reflects the benefits earned to date.
Plan Members	The individuals covered by the terms of an OPEB plan. The plan membership generally includes employees in active service, terminated employees who have accumulated benefits but are not yet receiving them, and retired employees and beneficiaries currently receiving benefits.
Other Post Employment Benefits (OPEB)	Medical, dental, vision, life and other health benefits provided to terminated or retired employees including their dependents and beneficiaries.
Substantive Plan	The terms of the OPEB plan as understood by the employer and its plan members.
Recognition Year for GASB No. 43 & 45	2007-08 Fiscal Year: This impacts public agencies with total annual revenue of \$100 million or more must comply in the fiscal year after December 15, 2006. 2008-09 Fiscal Year: This impacts public agencies with total annual revenue between \$10 million and \$100 million must comply in the fiscal year after December 15, 2007. 2009-10 Fiscal Year: This impacts public agencies with total annual revenue less than \$10 million must comply in the fiscal year after December 15, 2008.



**SECTION VII: FORTY TWO (42) SCENARIOS FOR DISCOUNT RATES AND HEALTHCARE COST TREND RATES**

VALUATION RESULTS FOR UAL AS OF JULY 1, 2012:

Ultimate Healthcare Cost Trend Scenarios	<u>Discount Rate Scenarios</u>					
	<u>2%</u>	<u>3%</u>	<u>4%</u>	<u>5%</u>	<u>6%</u>	<u>7%</u>
3%	\$ 142,238,367	\$ 119,832,009	\$ 102,576,337	\$ 89,070,295	\$ 78,337,675	\$ 69,687,598
4%	\$ 164,911,571	\$ 136,690,918	\$ 115,312,268	<b>\$ 98,835,337</b>	\$ 85,929,175	\$ 75,665,854
5%	\$ 201,516,975	\$ 163,330,714	\$ 135,008,497	\$ 113,618,020	\$ 97,182,793	\$ 84,348,531
6%	\$ 253,324,602	\$ 200,813,887	\$ 162,560,616	\$ 134,175,312	\$ 112,738,559	\$ 96,276,440
7%	\$ 322,238,743	\$ 250,181,442	\$ 198,517,253	\$ 160,778,232	\$ 132,714,158	\$ 111,485,515
8%	\$ 413,541,113	\$ 314,791,078	\$ 245,034,027	\$ 194,822,484	\$ 158,019,700	\$ 130,572,541
9%	\$ 535,268,586	\$ 399,796,139	\$ 305,461,022	\$ 238,514,141	\$ 190,125,442	\$ 154,528,274

RATIO OF UAL TO CURRENT VALUATION:

Ultimate Healthcare Cost Trend Scenarios	<u>Discount Rate Scenarios</u>					
	<u>2%</u>	<u>3%</u>	<u>4%</u>	<u>5%</u>	<u>6%</u>	<u>7%</u>
3%	143.9%	121.2%	103.8%	90.1%	79.3%	70.5%
4%	166.9%	138.3%	116.7%	<b>100.0%</b>	86.9%	76.6%
5%	203.9%	165.3%	136.6%	115.0%	98.3%	85.3%
6%	256.3%	203.2%	164.5%	135.8%	114.1%	97.4%
7%	326.0%	253.1%	200.9%	162.7%	134.3%	112.8%
8%	418.4%	318.5%	247.9%	197.1%	159.9%	132.1%
9%	541.6%	404.5%	309.1%	241.3%	192.4%	156.3%

Note: Trend rate scenarios are for ultimate trend assumptions in Year 2018 and later. Trend rates for Years 2013 to 2017 as per valuation report.



SECTION VIII: THIRTY (30) ADDITIONAL SCENARIOS BASED ON TREND AND RETIREE CONTRIBUTIONS - UAL SUMMARY

Future Retirees Contribution Rates	<u>Ultimate Healthcare Cost Trend Scenarios</u>					
	<u>4%</u>	<u>5%</u>	<u>9%</u>	<u>11%</u>	<u>13%</u>	<u>15%</u>
7.5%	\$ 100,497,695	\$ 115,740,883	\$ 244,811,659	\$ 379,726,521	\$ 614,575,337	\$ 1,039,494,585
10.0%	\$ 99,567,293	\$ 114,562,087	\$ 241,406,067	\$ 373,863,108	\$ 604,279,874	\$ 1,020,947,182
20.0%	\$ 95,845,684	\$ 109,846,900	\$ 227,783,700	\$ 350,409,454	\$ 563,098,020	\$ 946,757,571
30.0%	\$ 92,124,076	\$ 105,131,713	\$ 214,161,332	\$ 326,955,801	\$ 521,916,167	\$ 872,567,959
40.0%	\$ 88,402,468	\$ 100,416,527	\$ 200,538,965	\$ 303,502,147	\$ 480,734,313	\$ 798,378,348

INCREASE/(DECREASE) IN UAL TO CURRENT VALUATION BASED ON SCENARIO:

Current Valuation @ 7/1/12 & 5% Discount Rate: \$ 98,835,337

Future Retirees Contribution Rates	<u>Ultimate Healthcare Cost Trend Scenarios</u>					
	<u>4%</u>	<u>5%</u>	<u>9%</u>	<u>11%</u>	<u>13%</u>	<u>15%</u>
7.5%	\$ 1,662,358	\$ 16,905,546	\$ 145,976,322	\$ 280,891,184	\$ 515,740,000	\$ 940,659,248
10.0%	\$ 731,956	\$ 15,726,750	\$ 142,570,730	\$ 275,027,771	\$ 505,444,537	\$ 922,111,845
20.0%	\$ (2,989,653)	\$ 11,011,563	\$ 128,948,363	\$ 251,574,117	\$ 464,262,683	\$ 847,922,234
30.0%	\$ (6,711,261)	\$ 6,296,376	\$ 115,325,995	\$ 228,120,464	\$ 423,080,830	\$ 773,732,622
40.0%	\$ (10,432,869)	\$ 1,581,190	\$ 101,703,628	\$ 204,666,810	\$ 381,898,976	\$ 699,543,011

RATIO OF UAL TO CURRENT VALUATION UAL:

Future Retirees Contribution Rates	<u>Ultimate Healthcare Cost Trend Scenarios</u>					
	<u>4%</u>	<u>5%</u>	<u>9%</u>	<u>11%</u>	<u>13%</u>	<u>15%</u>
7.5%	101.7%	117.1%	247.7%	384.2%	621.8%	1051.7%
10.0%	100.7%	115.9%	244.3%	378.3%	611.4%	1033.0%
20.0%	97.0%	111.1%	230.5%	354.5%	569.7%	957.9%
30.0%	93.2%	106.4%	216.7%	330.8%	528.1%	882.9%
40.0%	89.4%	101.6%	202.9%	307.1%	486.4%	807.8%

Notes:

1. Trend rate scenarios are for ultimate trend assumptions in Year 2018 and later. Trend rates for Years 2013 to 2017 as per valuation report.
2. Current valuation results are based on a 5% discount rate. The prior valuation report reflected a 5% discount rate for these scenarios.
3. Updates to future retiree contribution rates only. Current retirees based on current percentages.
4. Current valuation results illustrated as of July 1, 2012.